

CROSS-CONNECTION CONTROL MANAGEMENT PLAN



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This Cross Connection Control Plan has been prepared in compliance with the California State Water Board Cross Connection Control Policy Handbook (CCCPH).

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APPROVED

By JWildflower at 9:49 am, Jul 10, 2025

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Cross-Connection Control Management Plan (CCCMP)

1. Cross-Connection Control Policy Overview

To comply with section 3.1.4 of the Cross-Connection Control Policy Handbook (CCCPH), each public water system (PWS) must submit a written Cross-Connection Control (CCC) Management Plan to the State Water Board for review.

The primary objective of the Cross-Connection Control Management Plan (CCCMP) is to bring the District into compliance with the Cross Connection Control Policy Handbook (CCCPH) developed by the State Water Resources Control Board (State Water Board) for the protection of public health through the establishment of standards intended to ensure a public water system (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 District intends to build a foundation of awareness within the District regarding the importance of backflow protection and cross-connection control, leading to the implementation of a robust cross-connection control program.

Per Section 3.1.4 (b)(1) description the District will implement the requirements of the State CCCPH by implementing District Code (11.14.010 through 11.14.090) and procedures as detailed in this CCCMP.

1.1 Applicability

The State CCCPH and its standards apply to all California PWSs, as defined in California's Health and Safety Code (CHSC, section 116275 (h)). Compliance with the State CCCPH is mandatory for all California PWSs. The District's CCC Management Plan has been developed in conformance to the State CCCPH and is applicable to all customers within the District's service area.

1.2 Responsibility

The District has primary responsibility for protecting the public water system from contamination and/or pollution occurring through backflow by preventing water from unapproved sources or any other substances from entering the distribution system. As a water supplier, the District shall protect the public water supply from contamination and/or pollution by implementing a Cross-Connection Control Program. Responsibility for the protection of the public water system is shared by the District and the customer.

The District fulfills its responsibility by requiring either point of connection protection or internal cross-connection at all existing service connections that have been surveyed and found to have existing actual and/or potential hazards to the public water system.

1.3 Policy Development Background and Legal Authorities

Through the adoption of the State CCCPH, the State Water Board exercised its authority, under California's Safe Drinking Water Act (SDWA), to establish enforceable standards applicable to California's PWSs. Failure to comply with the CCC Management Plan which is in conformance with the State CCCPH may result in the issuance of compliance, enforcement, or other corrective actions against the District.

1.4 California State Drinking Water Act

On October 6, 2017, Assembly Bill 1671 (AB 1671) was approved and filed with the Secretary of State. 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 CCCPH.

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).

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 State CCCPH, which became effective July 1, 2024.

- 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 the State CCCPH, California's regulations pertaining to cross-connection control were set forth in regulations in CCR Title 17, 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 State CCCPH updates those regulations, which as previously noted are no longer operative following the adoption of the State CCCPH.

The State Water Board may update its standards for backflow protection and cross-connection control through revisions of the State CCCPH. Prior to adopting substantive

revisions to the State 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.

1.5 Acronyms and Abbreviations

As used in this plan, 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
CCCMP	Cross Connection Control Management Plan
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
District	Marin Municipal Water District
Division	Division of Drinking Water
EPA	Environmental Protection Agency
Gov. Code	Government Code
MCL	Maximum Contaminant Level
Muni Code	Municipal Code
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

1.6 Definitions and General Requirements

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, which 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, CCCMP APPENDIX C: BACKFLOW PREVENTION ASSEMBLY DIAGRAMS .

“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, CCCMP APPENDIX C: BACKFLOW PREVENTION ASSEMBLY DIAGRAMS .

“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, CCCMP APPENDIX C: BACKFLOW PREVENTION ASSEMBLY DIAGRAMS.

“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: HIGH-HAZARD CROSS-CONNECTION CONTROL PREMISES 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 .

“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, CCCMP APPENDIX C: BACKFLOW PREVENTION ASSEMBLY DIAGRAMS.

“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, CCCMP APPENDIX C: BACKFLOW PREVENTION ASSEMBLY DIAGRAMS.

“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, CCCMP APPENDIX C: BACKFLOW PREVENTION ASSEMBLY DIAGRAMS.

“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, CCCMP APPENDIX C: BACKFLOW PREVENTION ASSEMBLY DIAGRAMS.

“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, CCCMP APPENDIX C: BACKFLOW PREVENTION ASSEMBLY DIAGRAMS.

“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, CCCMP APPENDIX C: BACKFLOW PREVENTION ASSEMBLY DIAGRAMS.

“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.

Overview of Public Water System

2. Cross-Connection Control Operating Authority

In accordance with the State CCCPH, Section 3.1.3 (a)(1), and Section 3.1.4(b)(1) and Section 3.1.4 (b)(3), the District must have operating rules, ordinances, by-laws, or a resolution to implement the cross-connection program. The District must have legal authority to implement corrective actions in the event a water user fails to comply in a timely manner with the District's provisions regarding the installation, inspection, field testing, or maintenance of BPAs required pursuant to the CCCPH. Such corrective actions must include the District's ability to perform at least one of the following:

- Deny or discontinue water service to a water user,
- Install, inspect, field test, and/or maintain a BPA at a water user's premises, or
- Otherwise address in a timely manner a failure to comply with the District's cross-connection control program.

The District's backflow and cross-connection prevention requirements are contained in the District's Administrative Code, Chapter 11.14.010 through 11.14.090 (<https://ecode360.com/44094552>). A copy is attached as APPENDIX A: ORDINANCE 314/MARIN MUNICIPAL WATER DISTRICT CODE SECTIONS 11.14.010 – 11.14.090.

If it is determined that a backflow prevention assembly is required, the installation of such an assembly shall be a condition of continued water service. The customer shall be notified in writing and given no more than 90 calendar days from the date of the initial notice to comply. If a customer fails to comply, then the District shall proceed with enforcement up to and including termination of water service to the parcel being served.

In the event the District determines a customer's water system poses an immediate health risk to the public water supply, the District reserves the right to immediately terminate water service without prior notification as is required to comply with the CCCPH.

3. Administration of CCC Program

Except as otherwise provided, District staff shall administer, implement and enforce the provisions of the CCC Management Plan. In accordance with the State CCCPH, Section 3.1.3 (a)(2) and Section 3.1.4 (b)(8), the District 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. Further for public water systems with more than 3,000 service connections the Cross-Connection Control Program Coordinator must be a Cross-Connection Control Specialist.

The District's water system includes 60,868 domestic water connections. Therefore, the District must have a Cross-Connection Control Program Coordinator, and the Coordinator must be a certified Cross-Connection Control Specialist with certification from a State Water Board recognized training operation.

Table 1: Water System Statistics

Public water system name:	Marin Municipal Water District
Public water system number:	2110002
Number of single-family residential service connections:	52,149
Number of multifamily residential service connections (duplex, apartments, etc.):	3,831
Number of commercial service connections:	3,687
Number of industrial service connections:	0
Number of agricultural irrigation service connections:	0
Number of landscape irrigation service connections:	1,201
Total Number of service connections	60,868
Water system ownership type (<i>check one</i>): ☒ Public ☐ State or federal government ☐ CPUC regulated ☐ Mutual water co. ☐ HOA ☐ Private – other ☐ Other, describe:	

3.1 Cross-Connection Control Program Contacts

The District's Cross-Connection Control Program Coordinator is:

Nole Studley
Backflow & Reclamation Supervisor
Marin Municipal Water District
220 Nellen Ave
Corte Madera, CA 94925

nstudley@marinwater.org

(415)945-1559

Certification # 3790

California-Nevada AWWA

Expiration: May 31 2027

Additionally, the District's in-house Cross-Connection Control Program Specialist(s) are:

Chris Hoelscher

Backflow & Reclamation Specialist

choelscher@marinwater.org

(415)945-1558

Certification # 2732

California-Nevada AWWA

Expiration: June 30th 2026

Kahlef Powell

Backflow & Reclamation Specialist

kpowell@marinwater.org

(415)945-1571

Certification # 2932

California-Nevada AWWA

Expiration: November 30th 2025

The District's CCCMP was developed in consultation with the Cross-Connection Control Specialists because the District's domestic water system has more than 1,000 service connections.

The District's designated Cross-Connection Control Specialist can be contacted within one hour, per the requirement of the State CCCPH for a PWS with 3,000 or more service connections. In the event the District's Cross Connection Control Specialist is unavailable due to vacation, sickness, or other reason, the duties of the Cross Connection Control Specialist will be carried out by:

- Option 1- A backup District Cross Connection Control Specialist
- Option 2 - Water Distribution Operations Personnel trained in cross connection response procedures.
- Option 3 – contracted Cross Connection Control Specialist.
- Option 4 – other stand-by option.

3.2 Responsibilities of District Backflow Staff

The following cross connection related tasks will be performed by or under the direction of the District's CCCPC:

- Preparation of and recommendations regarding changes to the CCC program;
- Performance of and/or reviews of CCC hazard evaluations;
- Recommendations on the type of backflow preventer to be installed;
- Recommendations on schedules for retrofitting of backflow preventers;
- Inspections of backflow preventers for proper application and installation;
- Reviews of backflow preventer inspection and test reports;
- Recommendations and/or the granting of exceptions to mandatory premises containment;
- Participation in or cooperation with other water utility staff in the investigation of backflow incidents and other water quality problems;
- Completion of Backflow Incident Reports; and
- Completion of CCC Activity and Program Summary Reports.

The District may delegate other CCC program activities to other personnel who are not certified CCCSs, including clerical support staff. These activities include:

- Administration of paperwork;
- Mailing, collecting, and initial screening of hazard evaluation/water use questionnaires;
- Mailing of assembly testing notices;
- Receiving and screening of assembly testing reports;
- CCC program database administration and record keeping;
- Dissemination of public education material;

4. Hazard Assessments

In accordance with the State CCCPH, Section 3.1.3 (a)(3) – Hazard Assessments, Section 3.1.4 (b)(2), and Section 3.2.1 – The District must survey its service area and conduct hazard assessments per Article 2 of the State CCCPH that identifies actual or potential cross-connection hazards, degree of hazard, and any backflow protection needed.

4.1 Hazard Assessments

1. To evaluate the potential for backflow into the District's water distribution system, the District shall conduct initial hazard assessment of all service connections and premises in the District service area, including premises that have existing backflow protection. The hazard assessment must consider:
 - a. The existence of cross-connections;
 - b. the type and use of materials handled and present, or likely to be, on the user premises;
 - c. the degree of piping system complexity and accessibility;
 - d. access to auxiliary water supplies, pumping systems, or pressure systems;
 - e. 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.);
 - f. user premises accessibility;
 - g. any previous backflow incidents on the user premises; and
 - h. the requirements and information provided in the CCCPH.
2. Each hazard assessment must identify the degree of hazard to the District'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: HIGH-HAZARD CROSS-CONNECTION CONTROL PREMISES.
3. The hazard assessment must determine whether an existing BPA, if any, provides adequate protection based on the degree of hazard.
4. Hazard Assessments completed prior to the adoption of the State CCCPH may be considered as an initial hazard assessment provided that such hazard assessments and associated backflow protection provide protection consistent with the State CCCPH and the District describes their review of these assessments in the District's CCC Management Plan.
5. Subsequent to the initial hazard assessment the District must perform a hazard assessment under the following criteria:

- a. if a user premises changes account holder, excluding single-family residences;
 - b. if a user premises is newly or re-connected to the District distribution system;
 - c. if evidence exists of changes in the activities or materials on a user's premises;
 - d. if backflow from a user's premises occurs;
 - e. if the State Water Board requests a hazard assessment of a user's premises; and
 - f. if the District concludes an existing hazard assessment may no longer accurately represent the degree of hazard.
6. 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 District's hazard assessment properly identified all hazards at the time of the assessment, the appropriate degree of hazards, and the corresponding backflow protection.

4.2 Hazard Assessment Process

In order to assess each connection in the District's water distribution system for potential cross connection, the District will undertake assessments in the following phases. As part of the hazard assessment process the District has created a tracking system for the assessments made under the CCCMP. See [APPENDIX B: BACKFLOW DATABASE](#). Data will be gathered and logged into the assessment database in four phases.

- Phase 1 - All commercial connections with existing backflow prevention assemblies at the meter connection
- Phase 2 - All commercial connections without backflow prevention assemblies at the meter connection
- Phase 3 - All residential connections with AMI/AMR (Automated Meter Infrastructure/Automated Meter Read) meters
- Phase 4 – Residential connections without AMI or backflow prevention assemblies at the meter connection

Phase 1 – Commercial Connections with backflow protection

For commercial sites with existing backflow protection, the District has recorded in the assessment tracking system (Tokay) indicating what type of BPA has been installed. A District Cross Connection Control Specialist will review the data when entered into the assessment database to verify that an appropriate BPA has been installed on the meter

connection. The Cross Connection Control Specialist's review date will be noted in the assessment database. If the commercial site is equipped with an AMI/AMR meter, it will be noted in the assessment database with the BPA information.

Within the District's service area, an estimated 1,401 of total 3,687 commercial services have existing backflow protection, as currently recorded in the District's assessment database. It is assumed that a Cross Connection Control Specialist can perform this initial hazard assessment to determine whether an existing BPA provides adequate protection based on the degree of hazard by means of office-based tools and review of the assessment database. Assuming that the total number of annual Cross Connection Control Specialist available hours is 312 hrs./yr (5% of total annual 2,080 hrs per CCCS – District employs 3 CCCS), and each Cross Connection Control Specialist can review ten (10) sites per hour, therefore 3,120 commercial sites can be assessed per year. Based on the 1,401 commercial connections with existing backflow protection, the District has determined that this phase of the assessments can be completed within 6 months from the adoption of the District's CCCMP.

Phase 2 – Commercial Connections without Backflow Protection

For those commercial connections (remaining 2,246 commercial services) without an approved BPA, the District will provide a self-reporting letter to provide information regarding onsite conditions which would necessitate the installation of an approved BPA at the meter connection. The self-reporting letters will be distributed via direct mail.

The self-reporting letters will be reviewed based on the available Cross Connection Control Specialist hours to review and process commercial self-reporting letters and the expected percent of self-reporting letters returned per distribution cycle.

It is assumed that a Cross Connection Control Specialist can process (5) self-reporting letters per available hour, and the total number of annual Cross Connection Control Specialist available hours is 312 hrs./yr (5% of total annual 2,080 hrs per CCCS – District employs 3 CCCS) for a total of 1,560 self-reporting letters per year. It is also assumed that approximately (10%) of the commercial self-reporting letters will be returned per distribution. Therefore, the District will distribute either by direct mail or door-hanger up to 6,200 self-reporting letters per year until all commercial connections without an approved BPA have been assessed.

- If the Cross Connection Control Specialist determines that based on the self-reporting letter that an approved BPA is not required, they will note that in the assessment database and the reason for not requiring an approved BPA.

- If the Cross Connection Control Specialist determines that based on the self-reporting letter that an approved BPA is required, they will note that in the assessment database and notify the commercial customer that an approved BPA must be installed at the meter connection and note that determination in the assessment database.

The District has determined that this phase of the assessments can be completed in 3 years and within 4 years from the adoption of the District's CCCMP.

Phase 3 – Residential Connections with AMI/AMR Meters

The District has ~5,500 residential services currently (as of May 2025) equipped with AMI/AMR meters which monitor flow on a continuous basis and can inform the District of a backflow condition when it occurs. For those residential connections with AMI/AMR meters the addresses for those connections will be entered into the assessment database and noted as equipped with AMI/AMR. The Cross Connection Control Specialist will review the data for accuracy and note their review in the assessment database indicating no BPA is required.

Assuming that the total number of annual Cross Connection Control Specialist available hours is 312 hrs./yr (5% of total annual 2,080 hrs.), and the Cross Connection Control Specialist can review twenty (20) sites per hour, therefore over 6,000 residential sites can be assessed per year. Based on the current 5,000 residential connections with existing backflow protection, the District has determined that this phase of the assessments can be completed in 1 year and within 5 years from the adoption of the District's CCCMP.

Phase 4 – Residential Connections without Backflow Protection

For those residential connections without an AMI/AMR meter at the water connection the District will assess each site by means of office-based tools such as:

- Reviewing sites via Google Maps or other aerial photography software
- Reviewing tract maps to review blocks of residential customer in a common building area or zone.
- Using meter route maps or other billing information databases.

The office-based assessment will review sites for:

- Private water wells
- Other auxiliary water supplies
- Domestic water pump stations
- Fire Department Connections (FDC)
- Graywater systems

The office-based assessments would be conducted based on the available Cross Connection Control Specialist hours to review the office-based databases and/or files.

- If the Cross Connection Control Specialist determines that based on the office-based assessment that an approved BPA is not required, they will note that in the assessment database.
- If the Cross Connection Control Specialist determines that based on the office-based that an approved BPA is required, they will note that in the assessment database, perform a site visit, and notify the residential customer that an approved BPA must be installed at the meter connection and note that the customer has been contacted in the assessment database.

It is assumed that a Cross Connection Control Specialist can perform assessments by means of office-based tools. Assuming that the total number of annual Cross Connection Control Specialist available hours is 312 hrs./yr (5% of total annual 2,080 hrs.), and the Cross Connection Control Specialist can review twenty (20) sites per hour, therefore 6,240 residential sites can be assessed per year. Based on the remaining 47,000 residential connections as of May 2025, the District has determined that this phase of the assessments can be completed in 8 years and within 13 years from the adoption of the District's CCCMP.

Subsequent to the initial hazard assessment the District must perform a hazard assessment 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 District distribution system;
- if evidence exists of changes in the activities or materials on a user's premises;
- if backflow from a user's premises occurs;
- if the State Water Board requests a hazard assessment of a user's premises; and
- if the District concludes an existing hazard assessment may no longer accurately represent the degree of hazard.

If an actual or potential hazard is determined to exist, a BPA shall be installed by the customer in accordance with current District specifications upon notification. All expenses of the installation shall be the customer's responsibility. Existing premises not required to install a BPA as a result of a Hazard Assessment shall be subject to subsequent regular Hazard Assessments every 10 years if otherwise not re-assessed for the purpose of confirming continued compliance pursuant to this Program

5. Backflow Prevention

In accordance with the State CCCPH, Section 3.1.3 (a)(4) and Section 3.2.2 – the District 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 the State CCCPH and the sections to follow.

5.1 Backflow Prevention Requirements

- The District 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 Section 4.2.1 for installation and approved BPA criteria). When a DC is required or referenced in the State CCCPH, a DCDA or DCDA-II type of assembly may be substituted if appropriate. When an RP is required or referenced in the State CCCPH, an RPDA or RPDA-II type of assembly may be substituted if appropriate.
- 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 section and as determined based on the results of the hazard assessment conducted pursuant to CCCMP Section 3.
- Unless specified otherwise in this section, a District must, at all times, protect its distribution system from high hazard cross-connections (see APPENDIX D: HIGH-HAZARD CROSS-CONNECTION CONTROL PREMISES for examples), through premises containment, through the use of AG(s) or RP(s).
 - Following State Water Board review and approval, the District may implement an alternate method of premises containment in lieu of a required AG provided that the proposed alternative would provide at least the same level of protection to public health.
 - Following State Water Board review and approval, the District may accept internal protection in lieu of containment when premises containment is not feasible.
- At this time, the District does not allow use of a swivel-ell instead of an AG for premises containment protection when temporarily substituting tertiary recycled water use areas with potable water.
- Except as noted below, the District 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 State CCCPH.
 - 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.

- For existing fire protection systems that do not meet the State CCCPH, Section 3.2.2 (e)(3) or cannot install DC protection within ten years of adoption of the State CCCPH, the District may propose in the CCCMP submitted for compliance with the State CCCPH Section 3.1.4:
 - an alternative date; or
 - an alternative method of backflow protection that provides at least the same level of protection to public health.
- A BPA is not necessary for a low hazard fire protection system on a residential user premises if the following criteria are satisfied:
 - the user premises has only one service connection to the District;
 - 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;
 - a single, water industry standard, water meter is provided to measure combined domestic flow and fire protection system flow;
 - the fire protection system is constructed of piping materials certified as meeting NSF/ANSI Standard 61; and
 - 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.
- The State Water Board and the District 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:
 - 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 District of changes in piping, and maintain current contact information on file with the District; and
 - The District must include in the CCCMP required in the State 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.

- 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.

Nothing in this Program shall be construed as affecting customer's responsibility for meeting the local fire district's fire system flow requirements. Nothing in a local fire district's fire flow system requirements shall be construed as affecting customer's responsibility for meeting the requirements of this Program.

5.2 Backflow Prevention Assemblies

Standards for Types of Backflow Protection

- Each AG used for the CCCMP must meet 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).
- Each replaced or newly installed PVB, SVB, DC, and RP for protection of the PWS must be approved through both laboratory and field evaluation tests performed in accordance with at least one of the following:
 - 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;
 - 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-11, ASSE 1013-2021 for the RP, and ASSE 1047-2021 for the RPDA & RPDA-II and must have the 1YT mark.
- BPAs must not be modified following approval granted under Section 4.2.1(b). The District requires that BPA testers notify the District if a water user or District-owned BPA has been modified from the CCCMP Section 4.2.1(b) approval.

Installation Criteria for Backflow Prevention

- For AGs, the following is required:
 - 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 District;
 - 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 District;

- the District must ensure that the AG specified in the State CCCPH Section 3.3.1 (a) has been installed; and
- any new air gap installation at a user's service connection must be reviewed and approved by the State Water Board prior to installation.
- 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.
- DCs installed or replaced after the adoption of the State CCCPH must be installed according to the State CCCPH Section 3.3.2 (b). Below ground installation can be considered if approved by the District where it determines no alternative options are available.
- A PVB or SVB must be installed at a minimum of twelve inches above all downstream piping and outlets.
- 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.
- A RP or DC installed after the adoption of the State 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 District may approve alternate clearances providing that there is adequate clearance for field testing and maintenance.
- 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 District. If internal protection is provided in lieu of premises containment, the District 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.
- Each BPA and air gap separation must be accessible for field testing, inspection, and maintenance.

Installation drawings for each type of BPA is contained in **APPENDIX C: BACKFLOW PREVENTION ASSEMBLY DIAGRAMS**.

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 of the CCCPH for installation and approved BPA criteria).

5.3 Internal Protection

Internal protection installed according to the California Plumbing Code is an acceptable form of backflow protection for other features beyond those identified in see APPENDIX D: HIGH-HAZARD CROSS-CONNECTION CONTROL PREMISES including:

- irrigation systems,
- garden hose bibbs,
- onsite water treatment such as small RO units and regenerating water softeners,
- pools,
- boilers,
- mop sink faucets, and
- soda machines.

5.4 Residential Fire Suppression System Connections

A residential fire service is a connection which is used both for fire protection and to provide domestic water (to bathrooms, sinks, or other uses not related to fire protection). Compliance with either State CCCPH Section 3.3.2 (e)(3) or backflow protection at the meter shall be required on premises determined by the District to pose an actual and/or potential health hazard and shall be at a minimum a DC. Existing residential fire suppression systems will be allowed to continue in service until such system is modified, updated, improved, or hazard classification is determined to require installation of backflow prevention at the meter or alternative means of protection. If existing protection is determined inadequate or is modified, improved, or updated as identified under this Program, the Customer shall install the required level of backflow protection at the point of connection to District water system as specified by the District.

Nothing in this Program shall be construed as affecting customer's responsibility for meeting the local fire district's fire system flow requirements. Nothing in a local fire district's fire flow system requirements shall be construed as affecting customer's responsibility for meeting the requirements of this Program.

5.5 Commercial Fire Suppression System Connections

Commercial fire suppression system connections shall be protected with a minimum of a RP, including the following list of circumstances:

- Any fire system supplied by or that has the potential to be supplied by an Unapproved Auxiliary Water Supply
- Any fire system in which a chemical or additive has been introduced that is not approved for a public potable water supply

Nothing in this Program shall be construed as affecting customer's responsibility for meeting the local fire district's fire system flow requirements. Nothing in a local fire district's fire flow system requirements shall be construed as affecting customer's responsibility for meeting the requirements of this Program.

5.6 Temporary Meter Connections

Temporary meter connections to District hydrants, blow-offs, or other District infrastructure shall be protected with a minimum of a RP. Current temporary meter connections utilize a DC and will be replaced with a RP as District budget allows. The District has budgeted replacement of 10 temporary meter connection backflow devices per year and has approximately 100 temporary meters available in stock.

The temporary meter and RP shall be installed by a District Backflow Prevention Assembly General Tester upon customer submittal of appropriate request form and accompanying deposit to the District. The location of the installed temporary meter connection shall be determined by the District in its sole discretion following review of request form. Customer shall access water at approved location through District-installed gate valve located downstream of RP. Under no circumstances shall customer operate hydrant, blow-off, or other District infrastructure. Each RP must be retested by a District Backflow Prevention Assembly General Tester upon relocation, and the customer is responsible for testing every six months until permanent removal of temporary BPA.

5.7 Auxiliary Water Supply

Any parcel served by District water service that is determined to have an Auxiliary Water Supply, whether or not it is interconnected with the District water system, shall be required to have a minimum of RP protection.

5.8 Non-residential Recycled Water Parcels

All non-residential premises receiving recycled water service shall be required to install a minimum of a RP on all potable service connections serving the same premises.

5.9 Residential Recycled Water Parcels

All residential premises receiving recycled water service shall be assessed for on-site hazards per [*Appendix D: High-Hazard Cross-Connection Control Premises*](#) and required to install a minimum of a DC or AG on all potable service connections serving the same premises.

6. Non-testable Devices

There are non-testable backflow preventer devices within the District's service area as shown in Table 2. Hose-bibb vacuum breakers is an example of the most common types of non-testable backflow prevention devices for the District.

Table 2: Location of Non-testable Backflow Prevention Devices

Location	Air Gap	Atmospheric Vacuum Breaker	Hose-bibb Vacuum Breaker	Dual Check Valve	Identification of Potential Hazard On-site
San Quentin Tank	X				Institution
26 Butterfield, San Anselmo	X				Well
150 Pine, Woodacre	X				Well
444 Sycamore, Mill Valley	X				Sewer Agency
226 Woodland, Kentfield	X				Well
Terra Linda Tanks	X				Potable Makeup for Recycled Water Tanks
Roto Rooter Vactor Truck HID-164810	X				Truck Mounted Hydrant Meter
Roto Rooter Vactor Truck HID-4833	X				Truck Mounted Hydrant Meter
Ross Valley Sanitary District Vactor Truck HID-4854	X				Truck Mounted Hydrant Meter
Ross Valley Sanitary District Jetter Truck HID-4834	X				Truck Mounted Hydrant Meter
Ross Valley Sanitary District Jetter Truck HID-4444	X				Truck Mounted Hydrant Meter
Ross Valley Sanitary District Vactor Truck HID-4310	X				Truck Mounted Hydrant Meter
Ross Valley Sanitary District	X				Truck Mounted Hydrant Meter

Jetter Truck HID-4303					
Ross Valley Sanitary District Jetter Truck HID-162845	X				Truck Mounted Hydrant Meter
City of San Rafael Vactor Truck HID-162917	X				Truck Mounted Hydrant Meter
City of San Rafael Street Sweeper HID-4679	X				Truck Mounted Hydrant Meter
City of San Rafael HID-4548	X				Truck Mounted Hydrant Meter
City of San Rafael Vactor Truck HID-215783	X				Truck Mounted Hydrant Meter
Glosage Engineering Vactor Truck HID-4852	X				Truck Mounted Hydrant Meter
Roys Sewer Service Vactor Truck HID-4300	X				Truck Mounted Hydrant Meter

The process and timeframes for ensuring each non-testable Air Gap backflow preventers are inspected each year is the same as the annual backflow testing notification described in Section 8.3.

Sites with non-testable Atmospheric Vacuum Breakers do not require annual testing or inspections. A list of sites will be provided upon request and sites will be prioritized for re-survey.

7. Certified Backflow Testers and Certified Cross-Connection Control Specialists

In accordance with the State CCCPH, Section 3.1.3 (a)(5), Section 3.1.4 (b)(6), and Section 3.4.1 – the District must ensure that each BPA required by the CCCMP to protect the District’s potable water system is field tested by a person with valid certification from a certifying organization recognized by the State Water Board pursuant to the State’s CCCPH.

7.1 Backflow Tester Certification

All backflow testers testing within the service area of the District must provide evidence of current certification from a State Water Board-recognized organization certifying backflow prevention assembly testers. Certifying organizations must be recognized by the State Water Board in accordance with requirements of the State CCCPH and ISO/IEC 17024. Beginning on July 1, 2025, only those testers with a valid certification from a State Water Board recognized certifying organization shall be allowed to test BPA’s in the District’s service area, certifications from any other entity will be considered invalid.

Backflow Tester List

The District maintains a list (<https://www.marinwater.org/testers>) of certified BPATs that are pre-approved by the District to perform the following activities:

- Backflow preventer inspection for proper installation; and
- Backflow assembly testing.
- Backflow assembly repair.

The District will also maintain a list of certified CCCSs that are pre-approved by the District to perform the following activities:

- Cross-Connection hazard evaluations;
- Backflow preventer inspection for proper application; and
- Backflow preventer inspection for proper installation.

The list(s) will be revised bi-annually or more frequently if necessary. The District requires that all Backflow Testers provide current calibration information for all test equipment to be used for testing within the District service area.

7.2 Cross-Connection Control Specialist Certification

All Cross-Connection Control Specialists, used by the District pursuant to the requirements of the State CCCPH, shall have valid certification from a State Water Board recognized certifying organization, which complies with the State CCCPH, will be considered to be a State Water Board-recognized certifying organization.

Beginning on July 1, 2025, only those Cross-Connection Control Specialists with a valid certification from a State Water Board recognized certifying organization shall satisfy the requirements of the State CCCPH. Certifications obtained by organizations that do not meet the requirements of the State CCCPH will be invalid.

The District has three staff who are certified by a State Water Board recognized certifying organization as Cross Connection Control Specialists. The staff is listed in 3.1 Cross-Connection Control Program Contacts.

7.3 Pre-Approval Qualifications

BPATs and CCCSs who wish to be included on the District's pre-approved list and/or provide testing in the District's service area must apply to the District and furnish the following information:

- Evidence of current BPAT and/or CCCS certification, as recognized in the CCCPH, in good standing;
- Make, model and serial number of testing equipment (BPAT listing only);
- Evidence of current test equipment verification of accuracy and/or calibration. (BPAT listing only);
- Evidence showing possession of a California State License Board C-36 plumbing contractor's license by 2027
- Applicant and/or Company must not have been removed from District's or another Agency's list, reprimanded by or subject of an investigation by an agency, or water utility related to backflow prevention assembly testing, installation, and repair or reporting.
- Applicant and/or Company must not have any unresolved customer complaints reported to the District, certifying agency, or the State Contractor's License Board.

The District CCCPC may suspend or revoke approval of an individual BPAT and or company from the list of approved testers if the individual or company fails or refuses to comply with the District CCCMP Policies and Regulations or engages in dishonest business practices within Districts jurisdiction, fails to maintain a valid BPAT Certification or installs, repairs or tests backflow assemblies in a negligent manner. Failure to abide by any of these requirements may be grounds for exclusion from the approved testers list for a period of (1) one year.

- All applicants must sign and agree to the following BPAT/ CCCS Code of Conduct upon admission to the testing list.
- Failure to sign the Code of Conduct will result in immediate removal from the approved list.

8. Backflow Prevention Testing

All backflow preventers that the District relies upon for protection of the water system will be subject to inspection and, if applicable, testing. This includes backflow preventers installed for in-premises protection that the District relies upon for protection of the water systems.

Consumers with a backflow prevention assembly on their premise shall have the assembly inspected and tested on at least an annual basis by a certified BPAT. It shall be unlawful to use any backflow prevention assembly required by CCCPH and the District unless such assembly is in good repair.

8.1 Responsibility for Inspection and/or Testing

The Consumer is responsible for inspection and testing of all consumer-owned backflow preventers and air gaps. The Consumer shall employ, at the Consumer's expense, a certified BPAT pre-approved by the District to conduct the inspection and test within the time period specified in the testing notice sent by the District.

The District will test and maintain at least annually all District-owned backflow preventers and air gaps.

8.2 Frequency of Inspection and/or Testing

Inspection and testing of backflow preventers will be conducted:

- At the time of installation;
- Annually after installation;
- After a backflow incident;
- After repair, reinstallation, permanent relocation, or re-plumbing.
- Any time the assembly is found to not be in good repair.
- All air gap separations shall be inspected annually and after modifications to the installation.

The District may require a backflow preventer to be inspected and/or tested more frequently than once a year when it protects against a high-health hazard or when it repeatedly fails annual tests or inspections. The District must receive passing field tests before providing continuous service to a new water user with a newly installed BPA.

8.3 Notification to Consumers of Inspection and/or Testing

The District will notify in writing all Consumers who own backflow preventers that are installed within the jurisdiction of the water system to have their backflow preventer(s) inspected and/or tested.

Notices will be sent out not less than 45 days before the due date of the inspection and/or test due date. The notice will also specify the date by which the inspection/test report must be received by the District. Assemblies which are found not to be in good repair shall be repaired and re-tested or replaced within 30 days of notification. Backflow prevention assemblies on high hazard sites may have water service terminated upon receipt of failed test report until repairs are made. A backflow assembly test report shall be filed with District within seven (7) days after such a test. If the District has not received a passed test report in the designated time frame, additional notification will occur.

Each water user with a BPA on the service connection must comply with the following schedule in order to be in compliance with the CCCMP and continue to receive water service from the District.

- **First notice** – the first annual notice of BPA testing required is sent to the customer. Letter notices will be mailed out at least 45 days before the due date of the inspection and/or test due date. The notice will also specify the date by which the inspection/test report must be received by the District. If the District has not received a passed test report in the designated time frame, additional notification will occur.
- **Second notice** – When a consumer fails to send in the inspection/test report within 15 days after the due date, a second notice will be sent to the user by mail allowing the customer an additional 30 days to submit the inspection/test report.
- **Third notice** – When a consumer fails to send in the inspection/test report within 30 days after the second notice, a third notice will be sent to the user by mail/email allowing the customer an additional 15 days to submit the inspection/test report.
- **Final notice & Termination of Water Service** – If 14 days after the due date from the third notice was sent to the user, the District will leave a door-hanger at the customer's address notifying of imminent water service shut-off. If the customer fails to provide the required test results 7 days after the final notice, the water service will be terminated.

Example of Notification Schedule

Inspection/Test Report Due Date	June 15 th
---------------------------------	-----------------------

First Notice	Mailed by May 1 st (45 days before due date) notifying due date of June 15 th
Second Notice	Mailed on July 1 st (15 days after due date) extending due date to last day of the month.
Third Notice	Mailed on August 1 (45 days from due date in second notice) extending due date as defined on the letter as the “Termination Date” typically the 3 rd Wednesday of the month,
Final Notice & Water Service Shut-off	Door-hangers issued on the date defined as the “Termination Date” notifying customers of impending water service shutoff within 5 business days.

8.4 Approved Test Procedures

The District will require that all assemblies relied upon to protect the public water system be tested in accordance with approved test procedures as specified in CCCPH Article 4. Any proposal to use alternate test procedures must be approved by the District’s CCCS.

8.5 BPA Test Reports

The test report shall be completed and signed by the BPAT and submitted within (7) days of the initial test to the District. The Consumer may request an extension of the due date through written request and may be granted said extension on a case by case basis.

8.6 Enforcement

Backflow prevention assembly testers must notify the District within one day if a backflow incident or an unprotected cross-connection is observed at the BPA or prior to the user premises during field testing. The District will immediately investigate and discontinue service to the user premises if a backflow incident is confirmed, and water service will not be restored to that user premises until the District receives a confirmation of a passing BPA field test from a backflow prevention assembly tester and the assembly is protecting the District.

To effectively enforce this Cross-Connection Control program, it may become necessary to discontinue water service through connection(s) to the parcel, or parcels under common control. Conditions that warrant discontinuance of service include but are not limited to the following:

- When District identifies a water use that represents a clear and immediate hazard to the potable water supply that cannot be immediately abated.

- Direct or indirect connection between the public water system and a sewer line.

If either of these hazards occurs, the District will make a reasonable effort to advise water user of intent prior to terminating water service. Water supply will be terminated and service valve locked. The water service will remain inactive until correction of violation has been approved by the District.

Under the following conditions the District will notify the Consumer in writing specifying the corrective action needed and the time period in which it must be done. If no action is taken within the allowed time periods, water service may be terminated.

- Unprotected direct or indirect connection between the public water system and an auxiliary water system.
- Refusal to inspect an air gap separation.
- Refusal to install a required backflow prevention assembly.
- Refusal to test a backflow prevention assembly.
- Refusal to repair or replace a faulty backflow prevention assembly.
- Refusal to upgrade a backflow prevention assembly to the necessary level of protection.
- Any refusal to comply with the requirements set forth in the Cross-Connection Control Program Plan.

8.7 Repairs

Any assembly that fails routine testing shall be repaired within thirty (30) days of the initial test date. The Consumer must notify District if repairs cannot be made within the specified period.

Any Backflow Assembly that fails testing and does not meet the correct level of protection shall not be repaired and must be replaced with the correct type of backflow commensurate to the hazard as determined by District CCCS.

Only Original Equipment Manufacturer (OEM) parts shall be used to repair backflow prevention assemblies. If OEM replacement parts are not available, then an approved backflow prevention assembly must be installed to replace the existing assembly.

9. Record Keeping

9.1 Records to be maintained

In accordance with the State CCCPH, Section 3.1.3(a)(7) and Section 3.1.4 (b)(9) the District has developed and implemented a recordkeeping system for:

1. Backflow prevention assemblies (BPA)
2. Cross-connection information.
3. Commercial/Industrial and Residential site assessments.

This recordkeeping system complies with the State CCCPH section 3.5.1, and the District's Written Retention Policy.

The District maintains the following records:

- The hazard assessments for each user premise, conducted pursuant to CCCPH section 3.2.1 (Hazard Assessment).
- For each BPA, the associated hazard or application, location, owner, type, manufacturer and model, size, installation date, and serial number.
- For each AG installation, the associated hazard or application and the location, owner, and as-built plans of the AG.
- Results of all BPA field testing, AG inspections, 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.
- Repairs made to, or replacement or relocation of, BPAs for the previous three calendar years.
- The most current cross-connection tests (e.g., shutdown test, dye test), if recycled water use on the premise.
- 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 State CCCPH section 3.2.2(f).
- Descriptions and follow-up actions related to all backflow incidents.
- If any portion of the cross-connection control program is carried out under contract or agreement, a copy of the current contract or agreement.
- The current Cross-Connection Control Management Plan as required in the State CCCPH Section 3.1.4.
- Any public outreach or education materials issued as required in the State CCCPH section 3.1.3.(a)(7) for the previous three calendar years.

- All records retained by the District will be made available to the State Water Board upon request.
- Records of Commercial/Industrial site assessments.
- Records of Residential site assessments.

9.2 Reports to be Prepared and Submitted to SWRCB

The District will prepare the following reports required by the CCCPH including:

- Cross-connection control program activities report for the calendar year, as requested;
- Cross-connection control program summary information, when required, or when there are significant policy changes;
- Backflow incident reports to SWRCB; and
- Documentation when exceptions to mandatory premises containment are granted

The District's certified CCC Program Coordinator will prepare and sign all CCC-related reports required by CCCPH.

9.3 Recordkeeping Policy and Procedure

The District has a written Records Retention Policy. The procedures are generally described below:

Residential Site Assessments

Residential assessments conducted in accordance with Section 3 generate a:

Hard copy process (Option A)

Hard copy assessment document which has been reviewed and signed by the Cross Connection Control Specialist per Section 3).

- If no action required – to be filed only
 - Hard Copies to be scanned and stored digitally on internal District database “Open Text” and a summary of survey results entered into our Cross-Connection Software called Tokay.
 - CCC Staff and/or Administrative staff will be responsible for scanning and storing of digital copies.
 - Records will be filed at least monthly or based on demand.
 - Records entered into Tokay will not be deleted or removed and will remain for the life of the software program.
 - [How is assessment data stored? Hazard assessments will be organized based on District Service Number.

- If action is required
 - Notification generated by Cross Connection Control Specialist that a backflow is required.
 - Notification mailed to customer on billing account.
 - Specialist follows up in 90 days to verify that backflow has been installed.
 - Additional enforcement action after 90 days will include additional notification letters and finally a shutoff notice.
 - Action noted in residential assessment database.
 - Action noted by Cross-Connection Control Staff.

Pdf submitted via email then printed, reviewed, then scanned (Option B)

Electronic assessment document submitted as a pdf which is reviewed by the Cross Connection Control Specialist then signed and scanned as a final pdf for filing).

- Actions will be the same as the above section.

Commercial site assessments

Hard copy assessment document which has been reviewed and signed by the Cross-Connection Control Specialist per Section 3.

- If no action required – to be filed only
 - Hard Copies to be scanned and stored digitally on internal District database “Open Text” and a summary of survey results entered into our Cross-Connection Software called Tokay.] CCC Staff and/or Administrative staff will be responsible for scanning and storing of digital copies.
 - Records will be filed at least monthly or based on demand.
 - Records entered into Tokay will not be deleted or removed and will remain for the life of the software program.
 - Hazard assessments will be organized based on District Service Number.
- If action is required
 - Notification generated by Cross Connection Control Specialist that a backflow is required.
 - Notification mailed to the billing customer.
 - Specialist follows up in 90 days to verify that backflow has been installed.
 - Additional enforcement action after 90 days will include additional notification letters and finally a shutoff notice.
 - Action noted in non-residential assessment database.
 - Action noted by Cross-Connection Program Staff.

Pdf submitted via email then printed, reviewed, then scanned (Option B)

Electronic assessment document submitted as a pdf which is printed and reviewed by the Cross Connection Control Specialist then signed and scanned as a final pdf for filing).

- If no action is required –
- Action is the same as the section above.

10. Backflow Incident Response, Notification, and Reporting

In accordance with the State CCCPH, Section 3.1.3(a)(8), Section 3.1.4 (b)(7), and Section 3.5.2 the District has developed and implemented procedures for investigating and responding to suspected or actual backflow incidents.

10.1 Backflow Incident Response Procedure

In the event that a suspected backflow incident occurs in the District, the District's response will include, but not limited to, the following:

- Consideration of complaints or reports of changes in water quality as possible incidents of backflow;
- Identification of the source of contamination including water quality sampling and pressure recording;
- Isolation of the source of contamination and the affected area(s);
- Cleaning, flushing, and other measures to mitigate and correct the problem;
- Apply corrective actions to prevent future backflow occurrences; and
- Documentation of the investigation, and any response and follow-up activities.

10.2 Backflow Incident Notification

In the event that a backflow incident occurs the Cross-Connection Control Coordinator will provide the following notification:

- The Cross-Connection Control Program Coordinator will notify the State Water Board and County of Marin – Public Health Department of any known or suspected incident of backflow within 24 hours of the determination. If required by the State Water Board, the District will issue a Tier 1 public notification pursuant to CCR, Title 22, Section 64463.1.
- If required by the State Water Board, the District will 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 District in response to the backflow incident, and the follow up actions to prevent future backflow incidents. The written report shall contain, at a minimum, the information requested in CCCPH APPENDIX E: BACKFLOW INCIDENT REPORT.

11. Public Outreach and Local Entity Coordination

In accordance with State CCCPH, Section 3.1.3 (a)(9) and Section 3.1.4 (b)(12) – the District has developed a cross-connection control public outreach and education program that is intended to educate staff, customers, and the community about backflow protection and cross-connection control.

11.1 Customer Education & Public Outreach

The District will distribute with water bills or some other means, at regular intervals, public education brochures to system customers. For residential customers, such brochures will describe the cross-connection hazards in homes and the recommended assemblies or devices that should be installed by the homeowner to reduce the hazard to the public water system. Public Outreach to educate the District's customers on backflow and cross-connection control also includes information on backflow and cross-connections on the District's website which is <https://www.marinwater.org/waterquality>.

The education program will emphasize the responsibility of the customer in preventing the contamination of the public water supply. In addition, backflow and cross-connection prevention may be distributed by other means, including but not limited to, periodic water bill inserts, information pamphlet distribution, new customer documentation, emails, and additions to the District's Consumer Confidence Report (CCR). The District will distribute information brochures to all customers every two to three years, and to every new customer at the time the new service is initiated.

In cooperation with other water utilities, local building and health departments, the District will participate in an outreach program consisting of:

- Distribution of cross-connection control information to hardware and plumbing stores serving the area;
- Participation in fairs, exhibits, and other events; and
- Special education sessions for irrigation contractors, fire sprinkler contractors, local backflow assembly testers, etc.

The District's staff will produce the public education brochures or the District will obtain brochures from:

- American Water Works Association (AWWA)
- California/Nevada Section of American Water Works Association (CA/NV-AWWA);
- University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USC FCCCHR);

- Other national backflow prevention associations, such as the American Backflow Prevention Association (ABPA); and/or
- Other water utilities.

The information distributed by the District will include, but not be limited to, the following subjects:

- Cross-connection hazards in general;
- Fire sprinkler cross-connection hazards;
- Importance of annual inspection and/or testing of backflow preventers; and
- Thermal expansion in hot water systems when backflow preventers are installed for premises containment.

11.2 Local Entity Coordination

In accordance with the State CCCPH, Section 3.1.3 (a)(10) and Section 3.1.4 (b)(13) The District 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 assist in the investigation of backflow incidents. Local entities within the District's service area includes but is not limited to all cities and towns of Marin (except Novato), County of Marin, local fire agencies, plumbers, etc. As requested, the District will provide a copy of this CCC Management Plan to local entities and will inform of any changes in policy or procedure that may impact local entities.

The District periodically holds informational meetings and distributes relevant information to local entities to assist with the building permitting process, including pamphlets providing high level details of backflow and reclamation requirements for new construction and remodels.

12. Recycled Water/User Supervisor Requirements

In accordance with the State CCCPH, Section 3.2.2 (3)(f), The State Water Board and District 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:

- 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 District of changes in piping, and maintain current contact information on file with the District; and,
- The District must include in the CCCMP required in CCCPH Section 3.1.4 the training and qualification requirements for user supervisors if required by the State Water Board or District, 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.

The District has not required any user supervisors for use sites within the District.

Appendices

13. Appendix A: Ordinance 314/Marin Municipal Water District Code
Sections 11.14.010 – 11.14.090

14. Appendix B: Backflow Database

15. Appendix C: Backflow Prevention Assembly Diagrams

16. 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 where recycled water is used for individually owned residential unit.

(+++ 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).

17. Appendix E: Backflow Incident Report

Backflow Incident Report Form

General Information

Water System Name: Marin Municipal Water District

Water System Number:

Incident Date:

Incident Time (if known):

Incident Location:

How was the incident discovered?

Backflow Origin Details

Premise Location:

Address:

Premise Contact Person:

Title:

Phone:

Email:

Connection Type

☐ Industrial ☐ Commercial ☐ Single-Family Residential ☐ Multi-Family Residential ☐ Irrigation ☐
Recycled Water ☐ Water System Facility ☐ Other: _____

Incident Description

Description and Source of Backflow Substance:

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, describe consumer notification:

Investigation Details

Describe the water system investigation including timeframes:

Area System Pressure During Incident:

Is this pressure within typical range? (Yes/No)

Was a sample collected and stored before flushing? (Yes/No)

Sampling Details:

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

Describe corrective actions taken:

Was chlorine residual increased after discovery? (Yes/No)

Additional Details

Date of last hazard assessment at the premise:

Did the premise have backflow prevention assemblies? (Yes/No)

Date of most recent backflow assembly test(s):

When was the Division of Drinking Water or Local Health Department notified:

Other agencies or organizations contacted:

Certification

Name:

Job Title:

Certification(s):

Signature:

Date:

Attachments (if applicable)

- ☐ Laboratory Test Results
- ☐ Sketch of cross-connection and modifications
- ☐ MSDS or chemical information forms
- ☐ Backflow assembly test reports
- ☐ Other relevant supporting documentation

CHAPTER 11.14 CROSS-CONNECTIONS

Note: Prior ordinance history: Ord. 176.

§ 11.14.010. Purpose.

All water service connections are subject to the installation of backflow prevention assemblies in order to safeguard the public drinking water supply. The requirements of this chapter are in addition to any requirements of federal, state or local law.

(Ord. 236 §1, 1983; Ord. 314 §2, 1990)

§ 11.14.020. California Administrative Code provisions adopted.

California Administrative Code, Title 17, Sections 7583 et seq., are adopted and incorporated by reference herein, insofar as the same are applicable to the protection of the water supply of the district.

(Ord. 236 §1, 1983; Ord. 314 §2, 1990)

§ 11.14.030. Definitions.

Definitions used in this chapter, unless the context requires otherwise, are as follows:

"Air gap separation - approved" means a physical break between the supply pipe and a receiving vessel. The air gap shall be at least double the diameter of the supply pipe, measured vertically above the top rim of the receiving vessel, and in no case less than one inch.

"Auxiliary water supply" means any water supply on, or available to, premises other than the district's supply.

"Backflow" refers to the flow of water or other fluid or substance or combination or mixture thereof into the potable water supply distribution pipes from any source or sources other than the intended source of supply.

"Check valve - approved" means a check valve that is drip-tight in the normal direction of flow when the inlet pressure is at least one psi and the outlet pressure is zero. The check valve shall permit no leakage in a direction reverse to the normal flow. The closure element (e.g. clapper, poppet and other design) shall be internally weighted or otherwise internally loaded to promote rapid and positive closure. An approved check valve is only one component of an approved backflow prevention assembly, i.e., pressure vacuum breaker, double check valve assembly or reduced pressure principle assembly.

"Cross-connection" means any unprotected actual or potential connection or structural arrangement between a public or a consumer's potable water system and any other source or system through which it is possible to introduce into any part of the potable system any used water, industrial fluid, gas, or substance other than the intended potable water with which the system is supplied. Bypass arrangements, jumper connections, removable sections, swivel or change over devices and other temporary or permanent devices through which or because of which backflow can or may occur are cross-connections.

"Double check valve assembly - approved" means an assembly composed of two single, independently acting, approved check valves, including tightly closing shut-off valves located at each end of the assembly and fitted with properly located test cocks.

"Reclaimed water" means wastewater which as a result of tertiary treatment is suitable for uses other than potable use.

"Reduced pressure principle backflow prevent assembly - approved" means a device containing two independently acting approved check valves, together with a hydraulically operating, mechanically independent pressure relief valve located between the check valves and at the same time below the first check valve. The unit shall include properly located test cocks and tightly closing shutoff valves at each end of the assembly.

"Service connection" means the terminal end of a service connection from the public potable water system, i.e., where the water purveyor loses jurisdiction and sanitary control over the water at its point of delivery to the consumer's water system. If a meter is installed at the end of the service connection, then the service connection shall mean the downstream end of the meter.

(Ord. 236 §1, 1983; Ord. 314 §2, 1990)

§ 11.14.040. Inspection.

The consumer's system shall be open for inspection at all reasonable times to authorized representatives of the district to determine whether cross-connections or sanitary hazards, including violations of this chapter exist.

(Ord. 236 §1, 1983; Ord. 314 §2, 1990)

§ 11.14.050. Backflow prevention.

Every water service connection to premises on which any of the following conditions exist or are planned shall be protected against backflow from the premises by suitable backflow prevention assemblies as specified in Section 11.14.060:

- (1) An auxiliary water supply which is not certified by the State Health Department as a domestic water supply; or
- (2) The handling of any substance under pressure in such a manner as to permit possible ultimate entry into the district's system; or
- (3) Internal cross-connections that are not permanently correctable; or
- (4) Intricate plumbing arrangements which make it impractical or impossible to ascertain whether or not cross-connections exist.

(Ord. 236 §1, 1983; Ord. 314 §2, 1990)

§ 11.14.060. Type of backflow prevention assemblies required.

The type of backflow prevention assemblies required shall be as follows, depending upon the degree of hazard which exists:

- (1) At the service connection to any premises where there is an auxiliary water supply handled in a separate piping system with no known cross-connections the district's system shall be

protected by an approved double check valve assembly. If such service is subject to any back siphonage, the district's system shall be protected by an approved reduced pressure principle backflow prevention assembly.

- (2) At the service connection to any premises on which a substance that would be objectionable but not necessarily hazardous to health, if introduced into the district's system, is handled so as to constitute a cross connection, the district's system shall be protected by an approved reduced pressure principle backflow prevention assembly.
- (3) At the service connection to any premises on which an auxiliary water supply with cross-connections, the district's system shall be protected by an approved reduced pressure principle backflow prevention assembly.
- (4) At the service connection to any premises on which any material dangerous to health or toxic substances in toxic concentration is or may be handled under pressure, or in a situation subject to siphoning, the district's system shall be protected by an approved air gap separation. If the approved air gap separation requirement cannot reasonably be met, an approved reduced pressure principle backflow prevention assembly may be substituted if acceptable to both the district and the Marin County health department.
- (5) At the service connection to any sewage treatment plant or sewage pumping station, the district's system shall be protected by an approved air gap separation. If the approved air gap separation requirement cannot reasonably be met, an approved reduced pressure principle backflow prevention assembly may be substituted if acceptable to the district, the Marin County health department, and the State Department of Public Health.
- (6) At the service connection to any property where reclaimed water is provided, the district may also require that its potable system be protected by a backflow prevention assembly.
- (7) At the service connection to any premises to which an irrigation service is supplied, the district's system shall be protected by an approved double check valve assembly:
 - (a) If such service is subject to any back siphonage, or if fertilizers, herbicides, pesticides, or any other hazardous substance will be injected into the consumer's piping system, the district's system shall be protected by an approved reduced pressure principle backflow prevention assembly.
 - (b) The district may also require that its system be protected by a backflow prevention assembly appropriate to the degree of hazard to the public drinking water supply determined by the district to exist at any service connection not covered in subsection (a) of this section.
 - (c) Any protective assembly required in this section shall be a model approved by the district. In general, a double-check valve assembly or a reduced pressure principle backflow prevention assembly to be approved by the district shall be listed on the State Department of Public Health's list of approved backflow prevention assemblies.

(Ord. 236 §1, 1983; Ord. 314 §2, 1990)

§ 11.14.070. Installation of backflow prevention assemblies.

All backflow prevention assemblies shall be installed in a horizontal position a minimum of twelve inches above finished grade and in accordance with all district rules and regulations.

(Ord. 236 §1, 1983; Ord. 314 §2, 1990)

§ 11.14.080. Consumer responsibility.

It shall be the duty of the consumer, at any premises where backflow protection assemblies are required, to furnish, install, maintain and have tested by a certified tester, the assemblies at his own expense. A test shall be made as soon as is practical after installation and at least once a year thereafter; however, the district may require more frequent tests if extreme hazards exist or successive inspections disclose repeated failures in the operation of any assembly. The consumer shall notify the district when the assembly has been installed. Assemblies shall be repaired, overhauled, or replaced at the expense of the consumer whenever they are found to be unapproved or defective. Records of such tests, repairs and overhaul shall be kept by the consumer and shall be promptly forwarded to the district by the consumer.

(Ord. 236 §1, 1983; Ord. 314 §2, 1990)

§ 11.14.090. Discontinuance of service.

Water service to any premises may be discontinued by the district, pursuant to Chapter 11.28 if a backflow prevention assembly, required by this chapter is not installed, tested and/or maintained; or if any deficiency is found in the installation or operation of a backflow prevention assembly; or if it is found that a backflow prevention assembly has been removed, or bypassed. Service shall not be restored until such conditions or defects are corrected. Any cost to the district for the investigation and abatement of a deficiency shall be included in the charges due before service is restored.

(Ord. 236 §1, 1983; Ord. 314 §2, 1990)

CHAPTER 11.28
TERMINATION OF WATER SERVICE

§ 11.28.010. Termination of water service.

Water service, once established pursuant to Chapter 11.08 or 11.36, shall be terminated only for the reasons and in the manner set forth in this chapter. However, anyone using district water other than through such an established water service shall be subject to termination of such use forthwith and without notice. Such illegal water use will result in administrative fees being incurred for the investigation and actual termination of the use, and these fees will be due and payable by the consumer within ten days of billing.

(Ord. 176 §1, 1978; Ord. 314 §2, 1990)

§ 11.28.020. Grounds for termination.

The following shall be grounds for termination of a consumer's water service:

- (1) Nonpayment of any deposit, a water bill and/or water rates fees and charges more than 60 days delinquent, or other sum due the district from the consumer with respect to any water service to the property;
- (2) Failure of the consumer or applicant to provide information for aid in the development of, or execution of the necessary documents for a water budget;
- (3) Failure of the consumer to comply with any district rule or regulation with respect to the service proposed to be terminated; and
- (4) Failure of the consumer to comply with any watershed protection agreement or other contract entered into as a condition of the granting of the service proposed to be terminated.

(Ord. 176 §1, 1978; Ord. 236 §2, 1983; Ord. 251 §3, 1985; Ord. 314 §2, 1990; Ord. 443 §2, 2019)

§ 11.28.030. Procedures for termination of water service.

- (1) Notice of Consumer of Termination Service. At least seven business days before the termination of water service, the District shall send by first class mail to the consumer, at the billing address furnished to the District, a written notice of payment delinquency and impending termination of water service. If the consumer's billing address and service address are different, the District shall also send that notice, by first class mail, to the service address directed to "Occupant." For consumers receiving mail delivery to post office boxes, the District shall deliver the notice directed to "Occupant" at the service location. The notice shall include the following information:

- (a) The consumer's name and address;
- (b) The location of the water service to be terminated;
- (c) The reasons for termination, including the amount of any delinquency;
- (d) The date by which a payment or arrangement for payment is required to avoid

termination of service or compliance must be instituted with a specified District rule or regulation;

- (e) A description of the process to apply for an extension of time to pay the delinquent charges;
- (f) A description of the procedure by which the consumer may request a deferred, reduced or alternative payment schedule, including an amortization of delinquent residential service charges and the telephone number of a representative of the District who can provide additional information and discuss options to avert the termination of water service.
 - (i) A payment plan or alternative payment period shall not exceed 12 months,
 - (ii) Only one payment plan or alternative payment period shall be granted to a consumer in a 12 month period;
- (g) In the case of termination of service to residential tenants/occupants of a multi-unit residential structure, a detached single-family dwelling, mobile home park or farm labor camp, where the owner, manager or operator is listed by the District as the consumer of record, a copy of the written notice required by Health and Safety Code Section 116916 and any successor statute shall be provided to the residential occupants at least ten days before terminating water service for nonpayment advising them of their right to become consumers under that statute.
- (h) A description of the procedure to petition for bill review and appeal:
 - (i) The consumer shall contact the District's Customer Service Department to discuss and/or dispute the bill, request amortization of any unpaid charges, show good cause why water service should not be terminated, present any complaint, or request an investigation regarding his/her service or charges. If the District's Customer Service Department fails to resolve the dispute then the consumer may follow the steps outlined in (ii) and (iii) below,
 - (ii) Regarding termination of water service for nonpayment of a water bill and or water rates, fees and charges, the consumer has the a right to a hearing before the District's Treasurer or designee before termination of water service. At that hearing the consumer may discuss and/or dispute the bill, request amortization of any unpaid charges, show good cause why water service should not be terminated, present any complaint, or request an investigation regarding his/her service or the charges therefor, if a written request for such hearing is delivered to the District's Customer Service Department at least two business days before the termination date contained in any written notice, and
 - (iii) In the case of water service termination for any other reason, the consumer has a right to a hearing before water service is terminated if a written request therefor is delivered to the District at least seven days before the termination date;
- (i) If any notice specified in this Section 11.28.030 is returned to the District and marked undeliverable by the United States Postal Service, the District shall attempt to contact

the consumer by telephone at the consumer provided telephone number for billing purposes. If the consumer cannot be reached by telephone or the District is unable to leave a voice message, the District shall visit the location of the property served and leave a notice of payment delinquency and impending termination and a copy of the District's written policy regarding the termination of water service. A \$30 trip fee will be assessed on the consumer's account.

- (2) Termination of Service for Non-Payment Prohibited, Conditions (Low Income and Serious Health Risk) and Options Offered to Consumers.
- (a) The District shall not terminate water service if a primary care provider, as defined by Welfare and Institutions Code Section 14088(b)(1)(A), including, but not limited to, General Practitioner, Obstetrician/Gynecologist, Pediatrician, Family Practice Physician, Primary Care Clinic, Hospital, or Outpatient Clinic, certifies that the termination of water service will be life threatening to, or pose a serious threat to the health and safety of, a resident of the premises where the water service is provided; and
 - (b) The consumer or a tenant of the consumer demonstrates that he or she is financially unable to pay pursuant to the criteria set forth in Health and Safety Code Section 116910(a)(2); and
 - (c) The consumer agrees to enter into an alternative, deferred, reduced or amortized payment plan for the unpaid balance over a reasonable period of time not to exceed 12 months.

If the consumer fails to enter into an alternative, deferred, reduced or amortized payment plan or fails to make timely payments on those plans or current charges, his or her service can be terminated if the account is delinquent for 60 days or more.

(Ord. 176 §1, 1978; Ord. 221 §6, 1981; Ord. 258 §1, 1986; Ord. 314 §2, 1990; Ord. 341 §2, 1992; Ord. 360 §2, 1994; Ord. 372 §1, 1996; Ord. 443 §3, 2019)

§ 11.28.040. Pre-termination appeal hearing procedures.

If the District receives a timely written request for a pre-termination appeal hearing in accordance with Section 11.28.030(1)(h)(ii) or (1)(h)(iii), the District shall set a hearing date. Upon the setting of the hearing, the District shall forthwith give written notice of the time and place thereof to the consumer by first class mail, email or personal delivery. Pending a decision by the hearing officer, water service shall not be terminated.

(Ord. 176 §1, 1978; Ord. 221 §7, 1981; Ord. 236 §3, 1983; Ord. 314 §2, 1990; Ord. 372 §2, 1996; Ord. 443 §4, 2019)

§ 11.28.050. Conduct of pre-termination appeal hearing.

The pre-termination appeal hearing shall be held before a hearing officer who shall be the Treasurer or designee, or in the case of pre-termination appeal hearings for violation of Chapter 11.14 entitled "Cross Connections" a hearing board selected by the Treasurer. The consumer or his/her representative may make a complaint or request an investigation concerning service or charges, and may present witnesses, documents or other evidence at such hearing to show good

cause why the water service should not be terminated. The hearing shall include consideration of whether the consumer would be permitted to amortize any unpaid account balance over a reasonable time period not to exceed 12 months. The hearing officer may also examine District records, documents, witnesses or other evidence tending to show that the water service should be terminated for one or more of the grounds stated in Section 11.28.020.

(Ord. 176 §1, 1978; Ord. 236 §4, 1983; Ord. 258 §2, 1986; Ord. 314 §2, 1990; Ord. 443 §5, 2019)

§ 11.28.060. Decision of hearing officer.

The hearing officer shall render a written decision whether service will be terminated and specifying the reasons for his/her decision. The hearing officer may attach any reasonable conditions to his/her decision. The hearing officer's decision shall be forthwith transmitted to the consumer by first class mail, email or personal delivery. If the decision is to terminate service, the decision shall state the date on or after which the service will be terminated, which date shall be not earlier than seven business days after mailing or delivery of the decision, nor earlier than the termination date specified in the original notice of termination. If the decision is to permit continued service on the condition that the consumer pays the unpaid account balance pursuant to an alternative, deferred, reduced or amortized payment plan, then such consumer's service may not be terminated if he or she is in compliance with the agreement and is not delinquent in payment of any subsequent bill for water service. If the consumer fails to comply with an alternative, deferred, reduced or amortized payment plan, his or her service may be terminated without the right to further hearing upon posting a final notice of intent to disconnect service in a prominent and conspicuous location at the location of the property served by the District at least five business days prior to termination.

(Ord. 176 §1, 1978; Ord. 314 §2, 1990; Ord. 372 §3 1996; Ord. 443 §6, 2019)

§ 11.28.065. Appeal of adverse determination by hearing officer.

An adverse decision by the hearing officer may be appealed to the District's General Manager by providing written notice of the appeal to the General Manager at 220 Nellen Avenue, Corte Madera, CA 94925 within seven business days after the date of the hearing officer's written decision. The General Manager's decision shall be final as to the District but subject to judicial review under Code of Civil Procedure Section 1094.5. In making the decision, the General Manager may take into account a consumer's extenuating personal circumstances, including, but not limited to, existing emergency medical concerns.

(Ord. 372 §5, 1996; Ord. 443 §7, 2019)

§ 11.28.070. Date of water service termination.

Termination of water service may be made, after the notice specified in Section 11.28.030 is given and the required time has elapsed, at any time when the District's business office is open to the public, but shall not be made on a Saturday, Sunday or legal holiday.

(Ord. 176 §1, 1978; Ord. 314 §2, 1990; Ord. 372 §4, 1996; Ord. 443 §8, 2019)

§ 11.28.080. Emergency termination.

Notwithstanding the foregoing, emergency termination of any water service may be made at any

time with or without notice if, in the opinion of the District, continued service would create or continue a condition hazardous to the health or safety of the consumer or the public. Water service shall be restored after an emergency termination as soon as such hazardous condition or threat thereof is eliminated.

(Ord. 176 §1, 1978; Ord. 314 §2, 1990)

Company*		Company		LocationID	
Address		Address		Surveys	Info
City/st/zip	TIBURON CA 94920	City	TIBURON CA 94920	Last Survey	10/29/2015 Pass
user2	C1	Phone	707-953-1400	Last Letter	
E-mail - X		Ext		Last Update	5/8/2025 DS
Cell 2	P2-X	Cell		Link On	☒ Link Code L
Site Type	SINGLE FAMILY	Email		Last Link	5/8/2025
Site Use	1-SINGLE FAMILY	Bus Phone		Parcel # *	
Notes	4/17/2025 8:48:40 AM				

Hazard 1 of	3
Category	Residential/Multi H
Priority	
Service	Domestic
Fire	
Sprinklers	
2nd SV No.	
HID - 2	
Manager	
Special	
Location	At Meter Right Side
Meter Loc	5' R OF DW. IN IVY
Recommendation	
Notes	10/26/15 0

Test	235754
Test Date	4/18/2025
Tester	05779
Initial Test	Valve 1 8.0 Close
	Valve 2 Close
	Relief 2.2 Open

Survey Date: 10/29/2015

Survey: 1003049

Survey Details

Surveys List

Files

Scheduled				
Survey Date	10/29/2015			
Survey Type	1			
Survey Result	P ☒ F ☐ ND ☐	P ☐ F ☐ ND ☐	P ☐ F ☐ ND ☐	P ☐ F ☐ ND ☐
Surveyed by	Tom Tracy			
Contact	Jamba Construction			
Time spent	hours	hours	hours	hours
Violations	3	0		
INST LOC	Tiburon, CA 94920			
Cont. Phone#	415-435-4481			
UDS9	mark@jambaconstructio			
Comp. Date		Comp. Sent		Shut off Due
Notes:	11/04/15 10:40:09 AM - TOM Met with Barney (contractor.) Boiler and Radiant heat are protected with RP. There is a water			
New Violation	New Violation to existing Hazard	View/Edit		
ViolationID	SurveyID	HazID	SiteID	HazNum
AccountNu	Testable	HazardTyp	HazardCat	Priority

Company			LocationID		
Address			Surveys Info Extra		
Map			Last Survey 10/2/2020 Fail		
LARKSPUR	CA	94939	Last Letter		
C1			Last Update 5/8/2025 DS		
P2-X			Link On ☒ Link Code L		
SINGLE FAMILY			Last Link 5/8/2025		
Bus.Phone			Parcel # *		
HID			Specialist		

1	190874	+	-	Replace
Irrigation	11	Se		
High	Meter			
Domestic	Line Size	0.75		
	Status	ACTIVE		
	Protection	Internal-Is		
	Site Phone			
	SV-Type	Residential		
At the irrigation connection point.				
MTR ON "LOMA VISTA AV", 75 FT RT OF L				
mendment				
Notes				

Survey Date: 10/2/2020

Survey 1004348 Survey Details Surveys List Files

	Initial Survey	Second Survey	Third Survey	Final Survey					
Scheduled									
Survey Date	10/2/2020								
Survey Type	First Survey								
Survey Result	P ☐ F ☒ ND ☐	P ☐ F ☐ ND ☐	P ☐ F ☐ ND ☐	P ☐ F ☐ ND ☐					
Surveyed by	Chris Turnham								
Contact									
Time spent	hours	hours	hours	hours					
Violations									
INST LOC	At Hazard								
Cont. Phone#									
UDS9									
Comp. Date	Comp. Sent	Shut off Due	Shut off Sent						
Notes:	10/7/2020 12:27:30 PM - Chris Turnham Met with contractor Frank Feroni and discussed the requirements for his project. Irrigation is the only hazard. Found existing irrigation system with hosebibbs. I told Frank he has two options, install an RP at the connection point or total								
New Violation New Violation to existing Hazard View/Edit									
ViolationID	SurveyID	HazID	SiteID	HazNum	AccountNu	Testable	HazardTyp	HazardCat	Priority

Company
Address
City
Phone
Ext
Email
Bus. Phone
HID

LARKSPUR CA 94939
C1
P2-X
SINGLE FAMILY

City
Phone
Ext
Email
Bus. Phone
HID

LARKSPUR CA 94939
Country
Cell
HID

LocationID
Surveys Info Extra
Last Survey
Last Letter
Last Update
Link On
Last Link
Parcel #
Specialist

10/2/2020 Fail
5/8/2025 DS
☒ Link Code L
5/8/2025
Parcel #
Specialist

1 190874 + - Replace
Irrigation 11
High Meter
Domestic Line Size 0.75
Status ACTIVE
Protection Internal-Is
Site Phone
SV-Type Residential
At the irrigation connection point.
MTR ON "LOMA VISTA AV", 75 FT RT OF L

Survey 100

10/7/2020 12:27:30 PM - Chris Turnham
Met with contractor Frank Feroni and discussed the requirements for his project. Irrigation is the only hazard. Found existing irrigation system with hosebibbs. I told Frank he has two options, install an RP at the connection point or total removal of the existing irrigation system. Either option includes the removal of the hosebibbs on the irrigation system. I sen an email to him on this day and sending a letter of install to the property owner.

Stamp OK Cancel

Comp. Date Comp. Sent Shut off Due Shut off Sent

Notes: 10/7/2020 12:27:30 PM - Chris Turnham
Met with contractor Frank Feroni and discussed the requirements for his project. Irrigation is the only hazard. Found existing irrigation system with hosebibbs. I told Frank he has two options, install an RP at the connection point or total

New Violation New Violation to existing Hazard View/Edit

ViolationID	SurveyID	HazID	SiteID	HazNum	AccountNu	Testable	HazardTyp	HazardCat	Priority
-------------	----------	-------	--------	--------	-----------	----------	-----------	-----------	----------

Third Survey
Final Survey

P F ND P F ND

hours hours

Account #	
LocationID	
Contact	
Company	

MILL VALLEY

SINGLE FAMILY

8/18/2023 12:05:16

1

Multiple - See Su

High

Domestic

Right side of gar

L OF DW L OF 2

endation

es

12/20/2

5/31/2024

Fr

8.0

Close

Leak

3.0

Open

Not

5.0

Buffer

Survey Date: 2/17/2021

Survey 1004416

Survey Details

Surveys List

Files

	Initial Survey	Second Survey	Third Survey	Final Survey					
Scheduled									
Survey Date	2/17/2021	1/25/2023							
Survey Type	First Survey	Follow-up							
Survey Result	P ☐ F ☒ ND ☐	P ☐ F ☒ ND ☐	P ☐ F ☐ ND ☐	P ☐ F ☐ ND ☐					
Surveyed by	Chris Turnham	Christopher Hoelsch							
Contact									
Time spent	hours	hours	hours	hours					
Violations									
INST LOC	Install at Meter								
Cont. Phone#									
UDS9									
Comp. Date	Comp. Sent	Shut off Due	Shut off Sent						
Notes:	3/11/2021 12:33:44 PM - Chris Turnham Performed site survey, found multiple hazards marked on PIF for the main building on the property. Spa, pool, boiler, radiant heat, holding tank, and irrigation. Along with those hazards, an additional service is being installed								
New Violation New Violation to existing Hazard View/Edit									
ViolationID	SurveyID	HazID	SiteID	HazNum	AccountNu	Testable	HazardTyp	HazardCat	Priority

Notes

TR 1

TR 2

Notes

TR 3

Notices Due	Sent	Halt
1st 5/1/2025	5/1/2025	
2nd 6/30/2025		
3rd		
4th		

Contact		Account #	
Company		LocationID	

Survey Data

Survey 100

Scheduled

Survey Date

Survey Type

Survey Re

Surveyed

Contact

Time spent

Violations

INST LOC

Cont. Photo

UDS9

Comp. Date

Comp. Sent

Shut off Due

Shut off Sent

Notes

New Violation

New Violation to existing Hazard

View/Edit

ViolationID

SurveyID

HazID

SiteID

HazNum

AccountNu

Testable

HazardTyp

HazardCat

Priority

MILL VALLEY

SINGLE FAMILY

8/18/2023 12:05:16

1 216063

Multiple - See Su

High

Domestic

Right side of gar

L OF DW L OF 2

220

5/31/2024

1 8.0 Close Leak

2 Close Leak Buffer

3.0 Open Not 5.0

3/11/2021 12:33:44 PM - Chris Turnham

Performed site survey, found multiple hazards marked on PIF for the main building on the property. Spa, pool, boiler, radiant heat, holding tank, and irrigation. Along with those hazards, an additional service is being installed for (ADU). The risk for inter connections with the two services and the bove mentioned hazards are too high, so a RP at both meters will be required.

Chris Hoelscher 1/25/2023 There are two meters serving this parcel. Each meter needs the installation of an RP at the meter. I am sending out a letter today.

Stamp

OK

Cancel

Third Survey

Final Survey

F ND P F ND

hours

hours

Notices Due

Sent

Halt

1st 5/1/2025 5/1/2025

2nd 6/30/2025

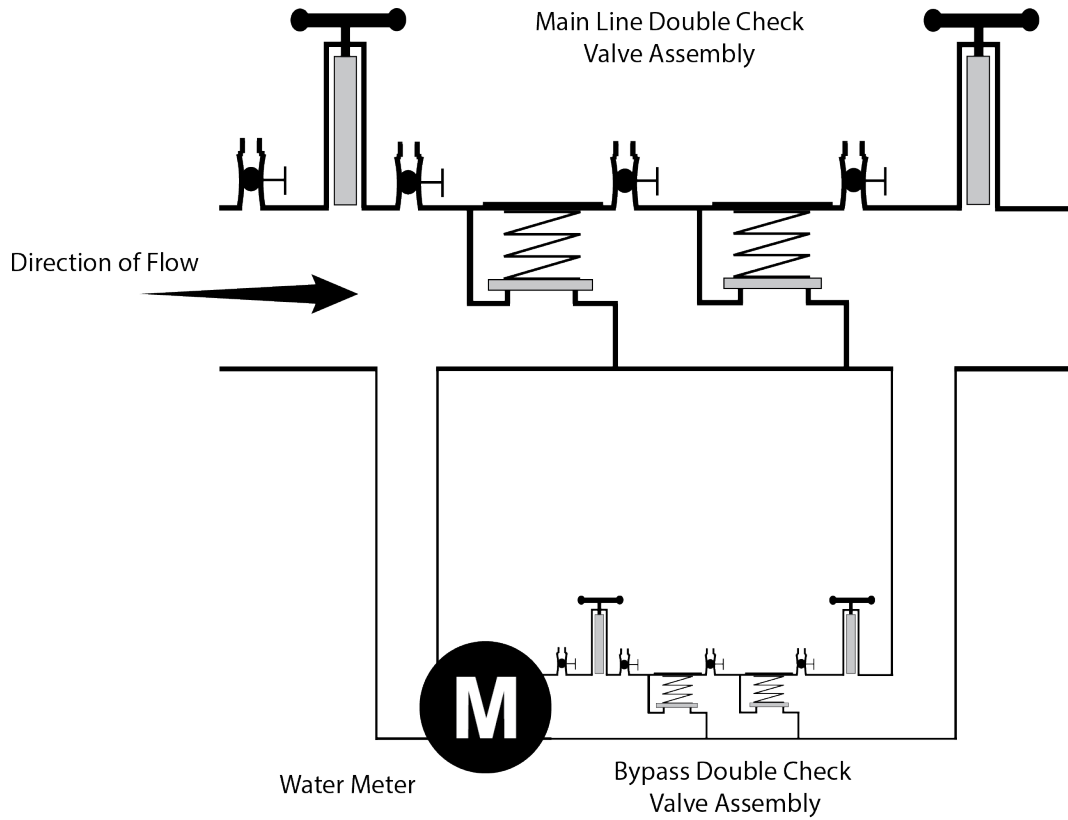
3rd

4th

Appendix C

Diagram 1

Double check detector backflow prevention assembly¹

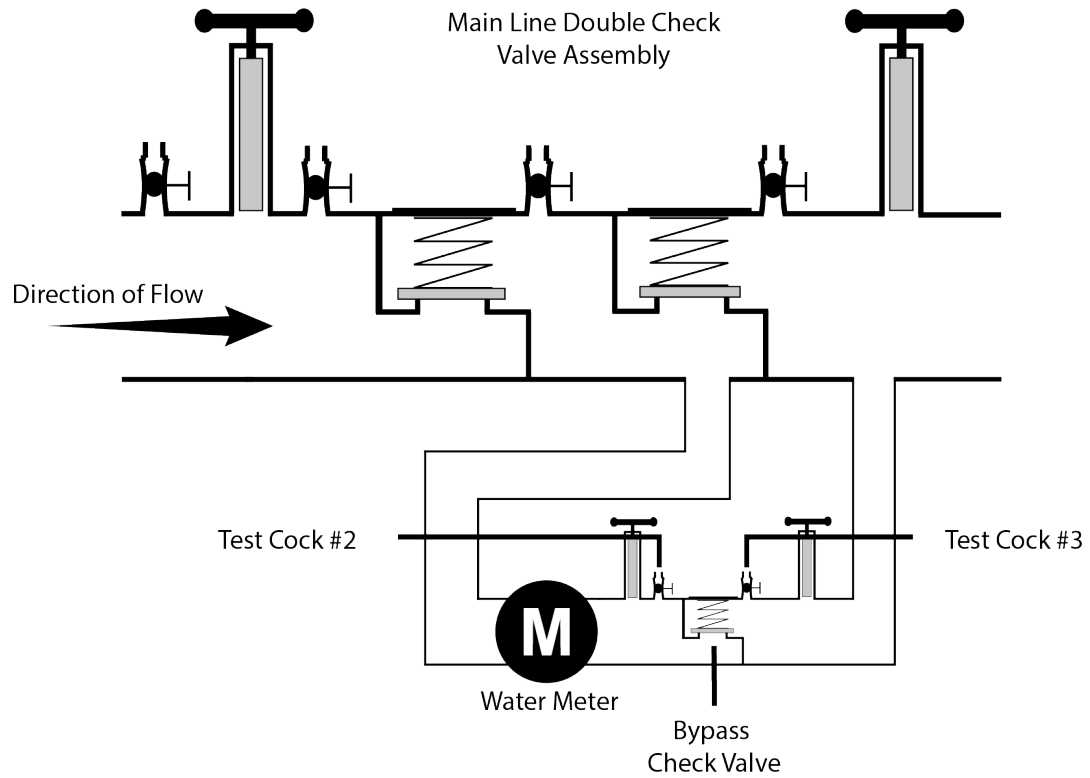


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Appendix C

Diagram 2

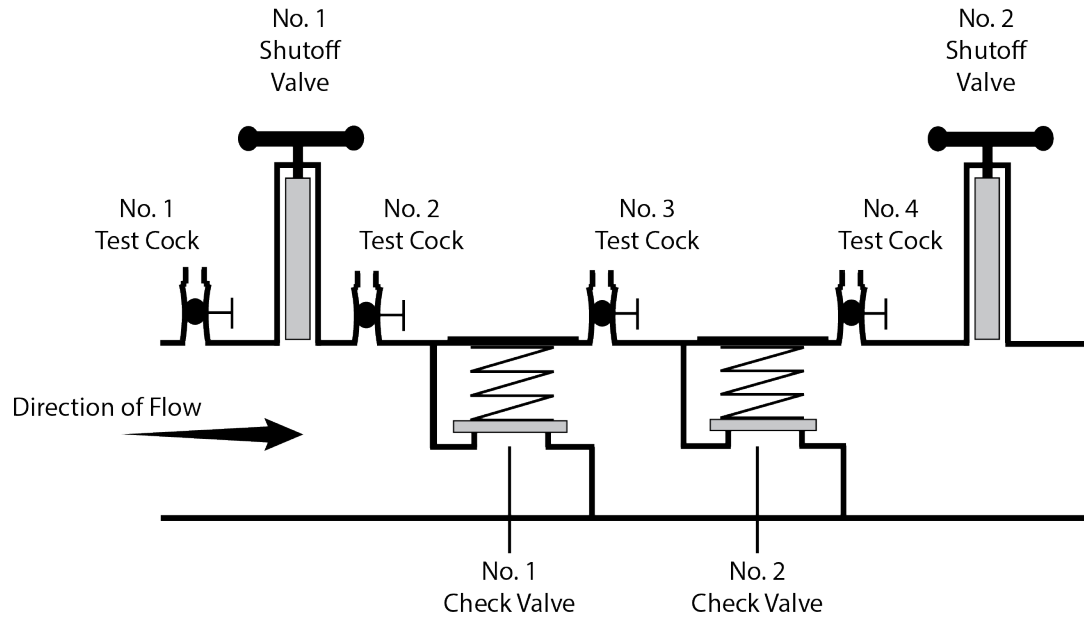
Double check detector backflow prevention assembly – type II ²



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

Appendix C

Diagram 3
Double check valve backflow prevention assembly³

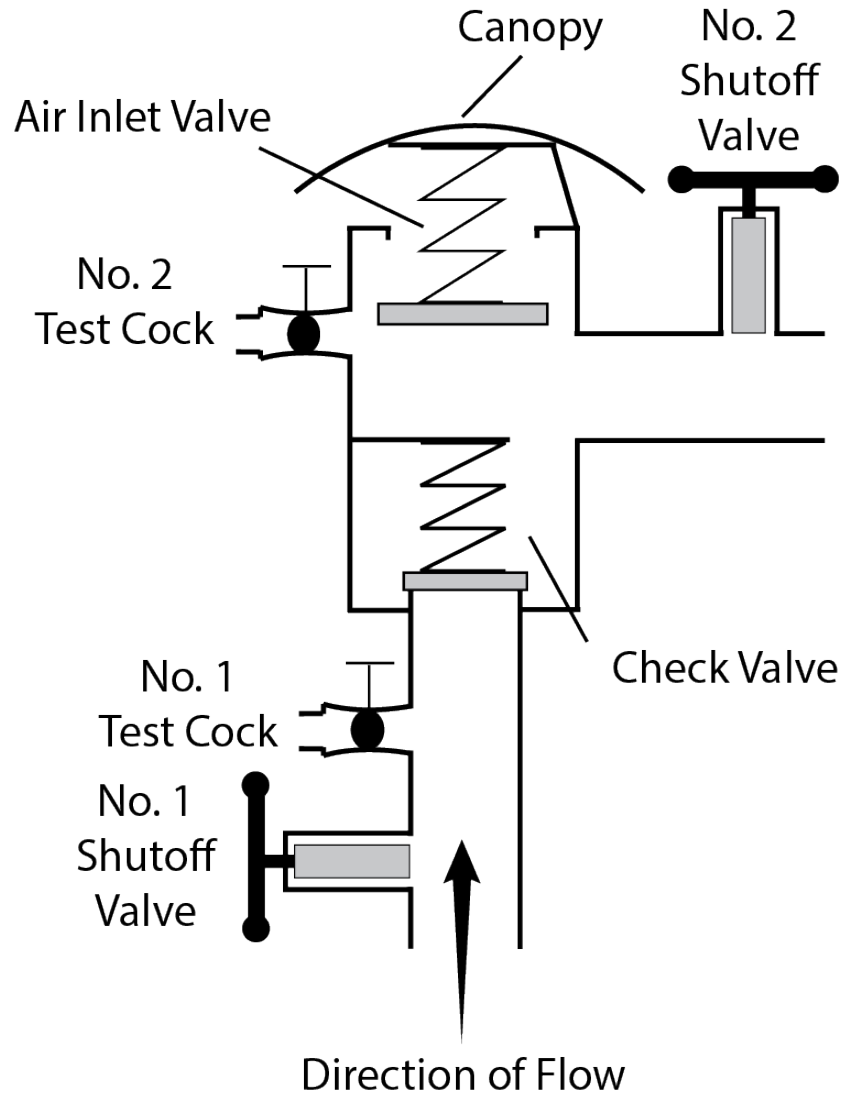


³ © 2023 University of Southern California. Used with permission

Appendix C

Diagram 4

Pressure vacuum breaker backsiphonage prevention assembly⁴

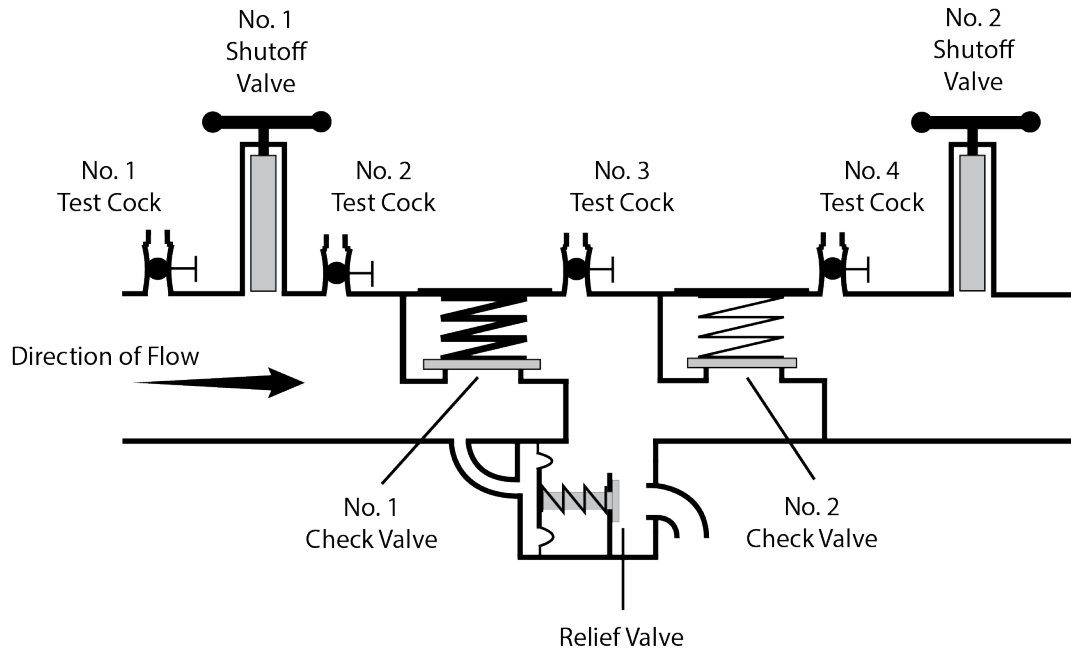


⁴ © 2023 University of Southern California. Used with permission

Appendix C

Diagram 5

Reduced pressure principle backflow prevention assembly⁵

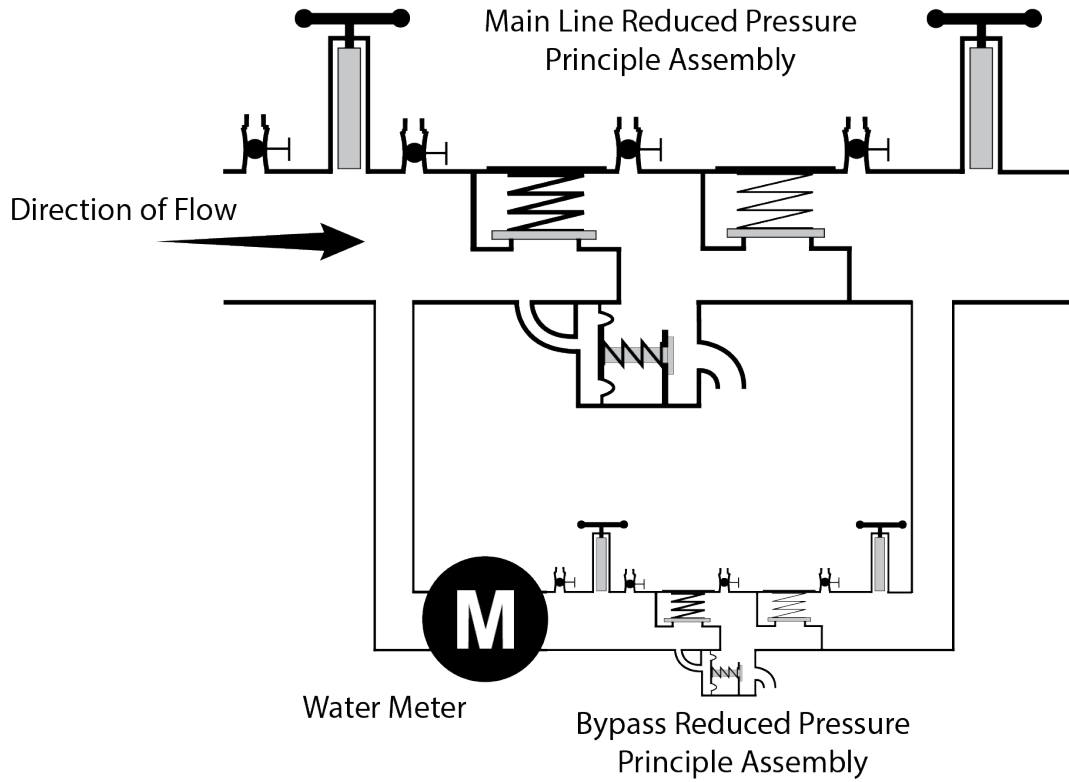


⁵ © 2023 University of Southern California. Used with permission

Appendix C

Diagram 6

Reduced pressure principle detector backflow prevention assembly⁶

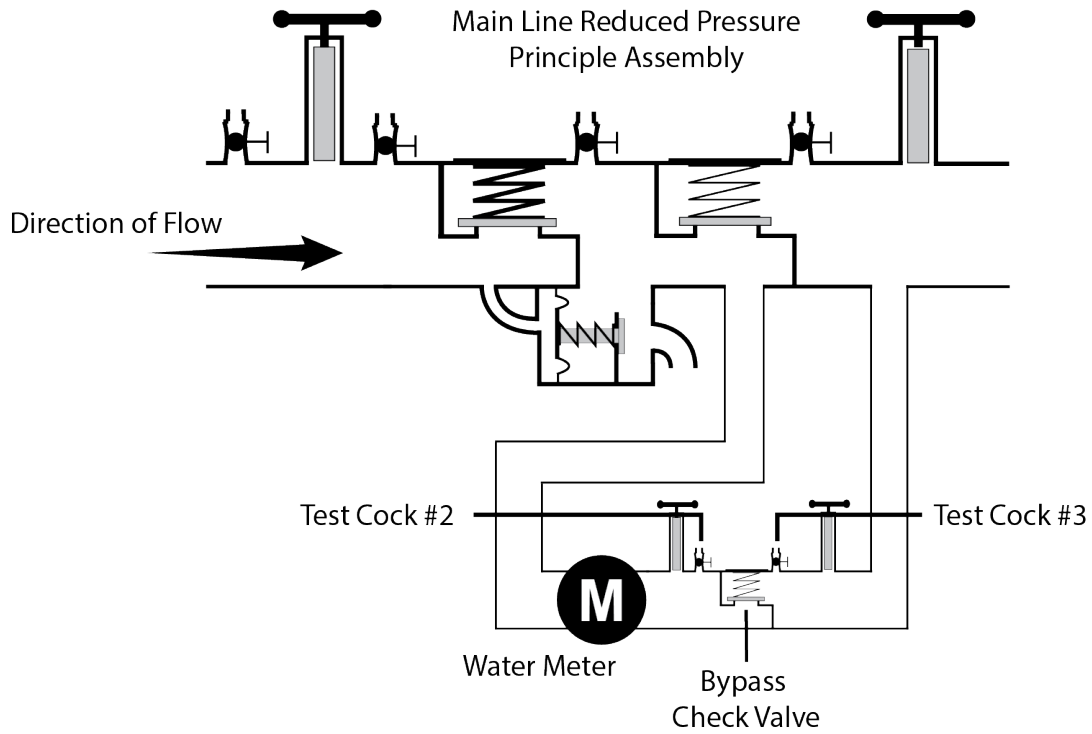


⁶ © 2023 University of Southern California. Used with permission

Appendix C

Diagram 7

Reduced pressure principle detector backflow prevention assembly – type II⁷

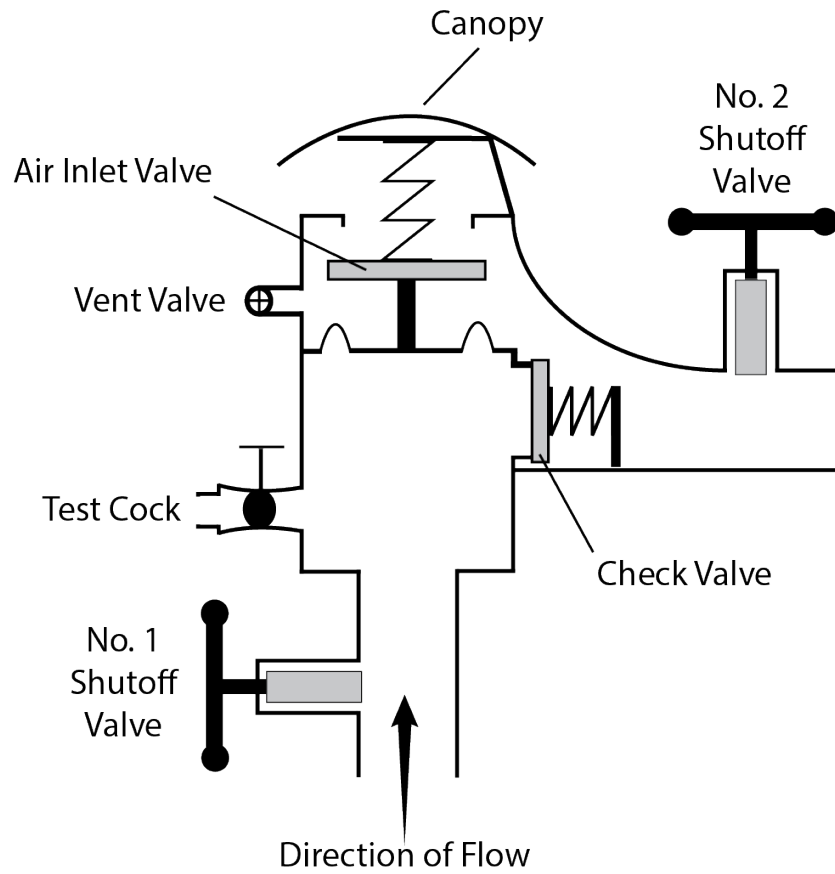


⁷ © 2023 University of Southern California. Used with permission

Appendix C

Diagram 8

Spill-resistant pressure vacuum breaker backsiphonage prevention assembly⁸



⁸ © 2023 University of Southern California. Used with permission