



# CALAVERAS COUNTY WATER DISTRICT ENGINEERING COMMITTEE MEETING

## OUR MISSION

Protect, enhance, and develop Calaveras County's water resources and watersheds to provide safe, reliable, and cost-effective services to our communities.

2021-2026 Strategic Plan, Adopted April 28, 2021, can be viewed at this [link](#)

Engineering Committee  
Tuesday, May 6, 2025  
2:00 p.m.

Calaveras County Water District  
120 Toma Court  
San Andreas, California 95249

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### **COMMITTEE MEMBERS**

Director Davidson, Chair

Russ Thomas, Director

## **ORDER OF BUSINESS**

### **CALL TO ORDER / PLEDGE OF ALLEGIANCE**

1. **ROLL CALL**
2. **PUBLIC COMMENT**
3. **APPROVAL OF MINUTES:** For the meeting of March 11, 2025
4. **NEW BUSINESS**
  - 4a. Cross-Connection Control Policy  
(Operations Department)
  - 4b. SSMP Update  
(Operations Department)
  - 4c. Arnold Clarifier Project CIP 15095  
(Kevin Williams, District Engineer)
  - 4d. Proposed Development Projects  
(Sam Singh, Senior Engineering Technician)
  - 4e. Capital Improvement updates  
(Kevin Williams, District Engineer)
5. **OLD BUSINESS**
  - 5a. Developer Projects  
(Sam Singh, Senior Engineering Technician)
  - 5b. Other Updates  
(Juan Maya, Associate Civil Engineer)
- 6.\* **GENERAL MANAGER COMMENTS**
- 7.\* **DIRECTOR COMMENTS OR FUTURE AGENDA ITEMS**
8. **NEXT COMMITTEE MEETING:** July 1, 2025

\*No information included in packet

May 6, 2025, Committee Meeting.

9. **ADJOURNMENT**

\*No information included in packet

May 6, 2025, Committee Meeting.



# CALAVERAS COUNTY WATER DISTRICT SPECIAL ENGINEERING COMMITTEE

**MINUTES**  
**March 11, 2025**

Directors/Committee Members present:

Russ Thomas  
Jeff Davidson

Staff present:

Michael Minkler	General Manager
Kevin Williams	District Engineer
Juan Maya	Civil Engineer
Haley Airola	Engineering Coordinator
Sam Singh	Senior Engineer Technician
Pat Burkhardt	Construction and Maintenance Manager
Damon Wyckoff	Director of Operations
Jared Gravette	Senior Supervisor Construction Inspector*
Jeff Myers	Director of Administration Services*
Rebecca Hitchcock	Executive Assistance/Clerk to the board*
Kylie Muetterties	Accountant I*
Bana Rousan-Gedese	Water Resource Specialist*
Tiffany Burke	Senior Administrative Technician*
Kelly Gerkenmeyer	External Affairs Manager*

Others present:

Mike Rodgers	Member of the Public*
Jonathan Lesperanc PE	Member of the Public*
Francisco de la Cruz	Member of the Public*
Victoria Fernandez	Member of the Public*
Unknown	Member of the Public*

**CALL TO ORDER / PLEDGE OF ALLEGIANCE.**

**1. ROLL CALL**

Director Thomas called the Engineering Committee to order at 2:03 p.m. and led the Pledge of Allegiance.

**2. PUBLIC COMMENT**

No public comment was given.

**3. APPROVAL OF MINUTES**

The February 11, 2025, minutes were approved by a motion from Director Thomas and seconded by Director Davidson.

**4. NEW BUSINESS**

**4a Copper Cove C Transmission Line CIP 111222  
(Kevin Williams, District Engineer)**

**DISCUSSION:** This item was pulled from the agenda.

**PUBLIC COMMENT:**

**4b Ebbetts Pass Water System Master Plan and Hydraulic Model  
(Kevin Williams, District Engineer)**

**DISCUSSION:** Kevin Williams provided information regarding the RFP status for the Ebbetts Pass Waste System. All questions were answered directly by Kevin Williams.

**PUBLIC COMMENT:** Public comment given by Francisco de la Cruz.

**4c Capital Improvement Update  
(Kevin Williams, District Engineer)**

**DISCUSSION:** Kevin Williams provided on update on the Capital Improvement Program. Any questions from the Committee were answered by Kevin Williams.

**PUBLIC COMMENT:** Public comment was given by Franisco de la Cruz.

**5. OLD BUSINESS**

**5a Developer Projects  
(Juan Maya, Associate Civil Engineer)**

**DISCUSSION:** Sam Singh provided updates on the developer projects. Any questions from the Committee were answered by Engineering Staff.

**PUBLIC COMMENT:** No public comment was given.

**5b Other Updates  
(Juan Maya, Associate Civil Engineer)**

**DISCUSSION:** Juan Maya provided updates on all other engineering projects. Any questions from the Committee were answered by Engineering staff.

**PUBLIC COMMENT:** No public comment was given.

6. **GENERAL MANAGER COMMENTS**

None.

7. **DIRECTOR COMMENTS OR FUTURE AGENDA ITEMS**

Director Davidson requested a CIP 10-year construction report.

8. **NEXT COMMITTEE MEETING**

July 1, 2025

9. **ADJOURNMENT**

There being no further business, the meeting adjourned at approximately 3:27 p.m.

Respectfully submitted,

*Haley Airola*

Haley Airola  
Engineering Coordinator

# Agenda Item

DATE: May 6, 2025

TO: Engineering Committee, Calaveras County Water District  
Michael Minkler, General Manager

FROM: Operations Department

RE: Cross-Connection Control Policy

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## DISCUSSION

The California Cross-Connection Control Policy Handbook (CCCPH), adopted on December 19, 2023, by the State Water Resources Control Board, took effect on July 1, 2024. It supersedes the previous Title 17 regulations and introduces more detailed standards to safeguard public drinking water systems from contamination due to backflow incidents.

- **Cross-Connection Control Plans (CCCPs):** All public water systems (PWS) are required to submit a CCCP by July 1, 2025. These plans must outline strategies for maintaining compliance, conducting hazard assessments, and implementing backflow prevention measures.
- **Hazard Assessments:** PWS must complete comprehensive hazard assessments to identify potential cross-connections within their infrastructure by July 1, 2026.
- **Certification Requirements:** From July 1, 2025, to June 30, 2027, backflow assembly testers and cross-connection control specialists must be certified by organizations recognized by the State Water Resources Control Board. Starting July 1, 2027, only certifying organizations accredited by ANSI to comply with ISO/IEC 17024 will be accepted.
- **Training and Guidance:** The State Water Board is developing training materials and additional guidance, including specific instructions for fire sprinkler systems, to assist PWS in complying with the new requirements.

## ATTACHMENTS

1. Cross-connection Control Policy Handbook
2. CCWD Ordinance 95-01

## FINANCIAL CONSIDERATIONS

None at this time

State Water Resources Control Board

# **Cross-Connection Control Policy Handbook**

Standards and Principles for California's  
Public Water Systems

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

California Environmental Protection Agency

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## **Appendix**

Appendix A: Assembly Bills 1671 (2017, Chapter 533) and 1180 (2019, Chapter 455)

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

Appendix C: Backflow Prevention Assembly Diagrams

Appendix D: High Hazard Premises

Appendix E: General Range of Knowledge for Cross-Connection Control Specialists

Appendix F: Example Backflow Incident Reporting Form

Appendix G: Related Statutes and Regulations

# Acronyms and Abbreviations

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

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

# Chapter 1 – Policy Overview

## 1.1 Objective

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

## 1.2 Applicability

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

## 1.3 Policy Development Background and Legal Authorities

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

### 1.3.1 California Safe Drinking Water Act

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

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

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<sup>1</sup> CHSC, div. 104, pt. 12, ch. 4, section 116270 et seq.

AB 1671 and 1180 established the following:

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

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

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

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

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

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<sup>2</sup> Gov. Code, tit. 2, div. 3, pt. 1, ch. 3.5, section 11340 et seq.

<sup>3</sup> Cal. Code Regs., tit. 17, div. 1, ch. 5, subch. 1, grp. 4, arts. 1 & 2, section 7583 et seq.

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

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

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

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<sup>4</sup> Cal. Code Regs., tit. 17, div. 1, ch. 5, subch. 1, grp. 4, arts. 1 & 2, section 7583 et seq.

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

## 2.1 What is a Cross-Connection?

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

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

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

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

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

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

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

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

## **2.2 Purpose of a Cross-Connection Control Program**

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

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

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

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

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

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

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

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

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

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

## Article 1 – Definitions and General Requirements

### 3.1.1 Definitions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**“Hazard Assessment”** means an evaluation of a user premises designed to evaluate the types and degrees of hazard at a user’s premises.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

### **3.1.2 Applicability**

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

### **3.1.3 Program for Public Water System Cross-Connection Control**

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

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

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

(2) **Cross-Connection Control Program Coordinator** – The PWS must designate at least one individual involved in the development of and be responsible for the reporting, tracking, and other administration duties of its cross-connection control program. For PWS with more than 3,000 service connections the Cross-Connection Control Program Coordinator must be a cross-connection control specialist.

(3) **Hazard Assessments** – The PWS must survey its service area and conduct hazard assessments per Article 2 of this Chapter that identifies actual or potential cross-connection hazards, degree of hazard, and any backflow protection needed.

(4) **Backflow Prevention** – The PWS must ensure that actual and potential cross-connections are eliminated when possible or controlled by the installation of approved BPAs or AG's consistent with the requirements of the Article 3 of this Chapter.

(5) **Certified Backflow Prevention Assembly Testers and Certified Cross-Connection Control Specialists** – The PWS must ensure all BPA testers and cross-connection control specialists used are certified per Article 4 of this Chapter.

(6) **Backflow Prevention Assembly Testing** – The PWS must develop and implement a procedure for ensuring all BPAs are field tested, inspected, and maintained and AG's are inspected and maintained in accordance with CCCPH section 3.3.3.

(7) **Recordkeeping** – The PWS must develop and implement a recordkeeping system in accordance with CCCPH section 3.5.1.

(8) **Backflow Incident Response, Reporting and Notification** – The PWS must develop and implement procedures for investigating and responding to suspected or actual backflow incidents in accordance with Article 5 of this chapter.

(9) **Public Outreach and Education** – The PWS must implement a cross-connection control public outreach and education program element that includes educating staff, customers, and the community about backflow protection and cross-connection control. The PWS may implement this requirement through a variety of methods which may include providing information on cross-connection control and backflow protection in periodic water bill inserts, pamphlet distribution, new customer documentation, email, and consumer confidence reports.

(10) **Local Entity Coordination** – The PWS must coordinate with applicable local entities that are involved in either cross-connection control or public health protection to ensure hazard assessments can be performed, appropriate backflow protection is provided, and provide assistance in the investigation of backflow incidents. Local entities may include but are not limited to plumbing, permitting, or health officials, law enforcement, fire departments, maintenance, and public and private entities.

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

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

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

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

### 3.1.4 Plan for Public Water System Cross-Connection Control

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

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

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

- (1) a description of how the community water system will achieve and maintain compliance with each requirement in this Chapter;
- (2) a description of the process, personnel, and timeframes for completing initial and ongoing hazard assessments pursuant to CCCPH section 3.2.1;
- (3) a description of the legal authority pursuant to CCCPH section 3.1.3 to implement corrective actions in the event a water user fails to comply in a timely manner with the provisions of the PWS's cross-connection control program;
- (4) a description of the process and timeframes for ensuring each BPA is inspected and field tested, and AG is inspected, at a frequency no less than required by this Chapter;
- (5) a description of the process and timeframe for ensuring each non-testable backflow preventer that is under the PWS ownership or administration is installed and maintained according to the California Plumbing Code;
- (6) a description of the process for ensuring individuals field testing and inspecting BPAs are no less qualified than required by this Chapter, including but not limited to confirmation of the individual's:
  - (A) certification as a backflow prevention assembly tester,
  - (B) field test kit or gage equipment accuracy verification, and
  - (C) BPA field test result reports;
- (7) a description of the procedures and timeframes of activities for responding to backflow incidents, including notification of customers, and reporting of backflow incidents pursuant to CCCPH section 3.5.2;
- (8) contact information for cross-connection control personnel including any cross-connection control program coordinator and specialist;
- (9) a description of the tracking system that maintains current and relevant information, including:

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

(10) for user supervisors, if used, the required information pursuant to CCCPH section 3.2.2 (f);

(11) the corrective actions, including timeframes for the corrective actions, that a community water system will implement when:

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

(12) a description of the public outreach and education program to comply with CCCPH section 3.1.3(a)(9); and

(13) the procedures for coordination with local entities

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

(1) a description of how the noncommunity water system will achieve and maintain compliance with each requirement in this Chapter that is applicable to the noncommunity water system;

(2) a description of the process, personnel, and timeframes for completing initial and ongoing hazard assessments pursuant to CCCPH section 3.2.1;

(3) a description of the legal authority pursuant to CCCPH section 3.1.3 to implement corrective actions in the event a water user fails to comply in a timely manner with the provisions of the PWS's cross-connection control program;

(4) a description of the process and timeframes for ensuring each BPA is inspected and field tested and AG is inspected, at a frequency no less than required by this Chapter;

(5) a description of the process and timeframe for ensuring each non-testable backflow preventer for internal protection that is under the PWS ownership or administration is installed and maintained according to the California Plumbing Code;

(6) a description of the process for ensuring individuals field testing and inspecting BPAs are no less qualified than required by this Chapter, including but not limited to confirmation of the individual's:

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

(7) a description of the procedures and timeframes of activities for responding to backflow incidents, including notification of customers, and reporting of backflow incidents pursuant to CCCPH section 3.5.2;

(8) contact information for cross-connection control personnel including the cross-connection control program coordinator;

(9) maintaining a tracking system with current and relevant information, including:

(A) recordkeeping information required pursuant to CCCPH section 3.5.1,

(B) location and type of each BPA,

(C) location and type of each non-testable backflow preventer used for internal protection in accordance with the California Plumbing Code, if applicable, and

(D) potential hazard from which a BPA is protecting the public water system distribution system;

(10) for user supervisors, if used, the required information pursuant to CCCPH section 3.2.2(f);

(11) the corrective actions, including timeframes for the corrective actions, that a noncommunity water system will implement when:

(A) a cross-connection exists and the BPA installed is not commensurate with the user premises' hazard or no BPA has been installed, or

(B) a BPA or non-testable backflow preventer needs to be replaced or maintained;

(12) a description of the public outreach and education program to comply with CCCPH section 3.1.3(a)(9); and,

(13) the procedures for coordination with local entities (e.g., local health departments with internal cross-connection control programs, building officials, plumbing officials, etc.).

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

## **Article 2 – Hazard Assessments and Required Protection**

### **3.2.1 Hazard Assessments**

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

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

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

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

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

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

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

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

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

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

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

### **3.2.2 Backflow Protection Required**

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

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

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

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

(2) Following State Water Board review and approval, a PWS may accept internal protection in lieu of containment when premises containment is not feasible.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## Article 3 – Backflow Prevention Assemblies

### 3.3.1 Standards for Types of Backflow Protection

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

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

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

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

### 3.3.2 Installation Criteria for Backflow Protection

(a) For AGs, the following is required:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## 3.4.1 Backflow Prevention Assembly Tester Certification

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

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

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

(A) Written exam proctors must:

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

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

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

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<sup>6</sup> The requirement for a written exam does not preclude using computerized exams.

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

(A) Performance exam proctors must:

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

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

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

(3) recertification requirements of no less frequently than every three years which includes both a written and performance exam;

(4) provisions for revocation of a backflow prevention assembly tester's certification, including but not limited to, revocation for falsifying field test results or field test reports;

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

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

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

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

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

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

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

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

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<sup>7</sup> But not limited only to training provided by the certifying organization or its affiliates.

<sup>8</sup> International Organization for Standardization

<sup>9</sup> International Electrotechnical Commission

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

(2) adequately address each State Water Board comment and/or question concerning the application, and

(3) receive written acknowledgment from the State Water Board that the application is complete.

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

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

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

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

### 3.4.2 Cross-Connection Control Specialist Certification

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

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

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

(A) Written exam proctors must:

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

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

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

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

(3) provisions for revocation of a specialist's certification, including but not limited to, falsifying information or providing negligent recommendations inconsistent with industry-standard cross-connection control guidelines;

(4) a website providing public access to the most recent list of cross-connection control specialists:

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

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<sup>10</sup> The requirement for a written exam does not preclude using computerized exams.

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

(5) initial certification requirements:

(A) a valid backflow prevention assembly tester certification from a certification organization recognized by the State Water Board pursuant to section 3.4.1; and

(B) completion of an instructional training course (acceptable to the certifying organization<sup>11</sup>) that covers the subjects in Appendix E and is no less than 30 hours in length over no fewer than five days (inclusive of an exam, if provided). This paragraph does not preclude a certification organization from providing the instructional training course to the public, including certified specialists.

(C) As an alternative to (A) the certifying organization may accept additional instruction in the subject areas of testing, maintaining and repairing BPAs equivalent in length and scope to the requirements in 3.4.1(b)(6).

(D) As an alternative to (A) the certifying organization may accept a minimum of five (5) years documented experience performing cross-connection control specialist duties, as outlined in Appendix E.

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

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

(A) Written documentation of a certification program that includes a process that is no less stringent than the criteria in subsection (b);

(B) evidence that the organization's certification program and exam process has been reviewed, with concerns adequately addressed, by a credentialed psychometrician proficient in the design of objective exams, experienced in the assessment of certification or licensing organizations, and familiar with the application of the requirements of *ISO<sup>12</sup>/IEC<sup>13</sup> 17024: Conformity Assessment- General Requirements for Bodies Operating Certification of Persons*; and

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<sup>11</sup> But not limited only to training provided by the certifying organization or its affiliates.

<sup>12</sup> International Organization for Standardization

<sup>13</sup> International Electrotechnical Commission

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

(2) adequately address each State Water Board comment and question concerning the application, and

(3) receive a written acknowledgment from the State Water Board that the application is complete:

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

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

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

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

## **Article 5 – Recordkeeping, Backflow Incident Response, and Notification**

### **3.5.1 Recordkeeping**

(a) Each PWS must maintain the following records:

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

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

### **3.5.2 Backflow Incident Response Procedure**

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

- (a) Consideration of complaints or reports of changes in water quality as possible incidents of backflow;
- (b) Water quality sampling and pressure recording; and
- (c) Documentation of the investigation, and any response and follow-up activities.

### **3.5.3 Backflow Incident Notification**

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

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

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# Appendix

**Appendix A:** Assembly Bill 1671 (2017, Chapter 533) and Assembly Bill 1180 (2019, Chapter 455).

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

**Appendix C:** Backflow Prevention Assembly Diagrams

**Appendix D:** High Hazard Premises

**Appendix E:** General Range of Knowledge for Cross-Connection Control Specialists

**Appendix F:** Example Backflow Incident Reporting Form

**Appendix G:** Related Statutes and Regulations

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# Appendix A

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

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## Assembly Bill No. 1671

### CHAPTER 533

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

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

#### LEGISLATIVE COUNSEL'S DIGEST

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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## Assembly Bill No. 1180

### CHAPTER 455

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

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

#### LEGISLATIVE COUNSEL'S DIGEST

AB 1180, Friedman. Water: recycled water.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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# Appendix B

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

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**Appendix B**  
**ASME A112.1.2-2012(R2017) Table 1, Minimum Air Gaps for Generally used Plumbing Fixtures,<sup>1</sup> page 4**

**TABLE 1**  
**Minimum Air Gaps for Generally used Plumbing Fixtures<sup>4</sup>**

FIXTURES	WHERE NOT AFFECTED BY SIDEWALLS <sup>1</sup> (inches)	WHERE AFFECTED BY SIDEWALLS <sup>2</sup> (inches)
Effective opening <sup>3</sup> not greater than ½ of an inch in diameter	1	1½
Effective openings <sup>3</sup> not greater than ¾ of an inch in diameter	1½	2¼
Effective openings <sup>3</sup> not greater than 1 inch in diameter	2	3
Effective openings <sup>3</sup> greater than 1 inch in diameter	Two times the diameter of effective opening	Three times the diameter of effective opening

For SI units: 1 inch = 25.4 mm

**Notes:**

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

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

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

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

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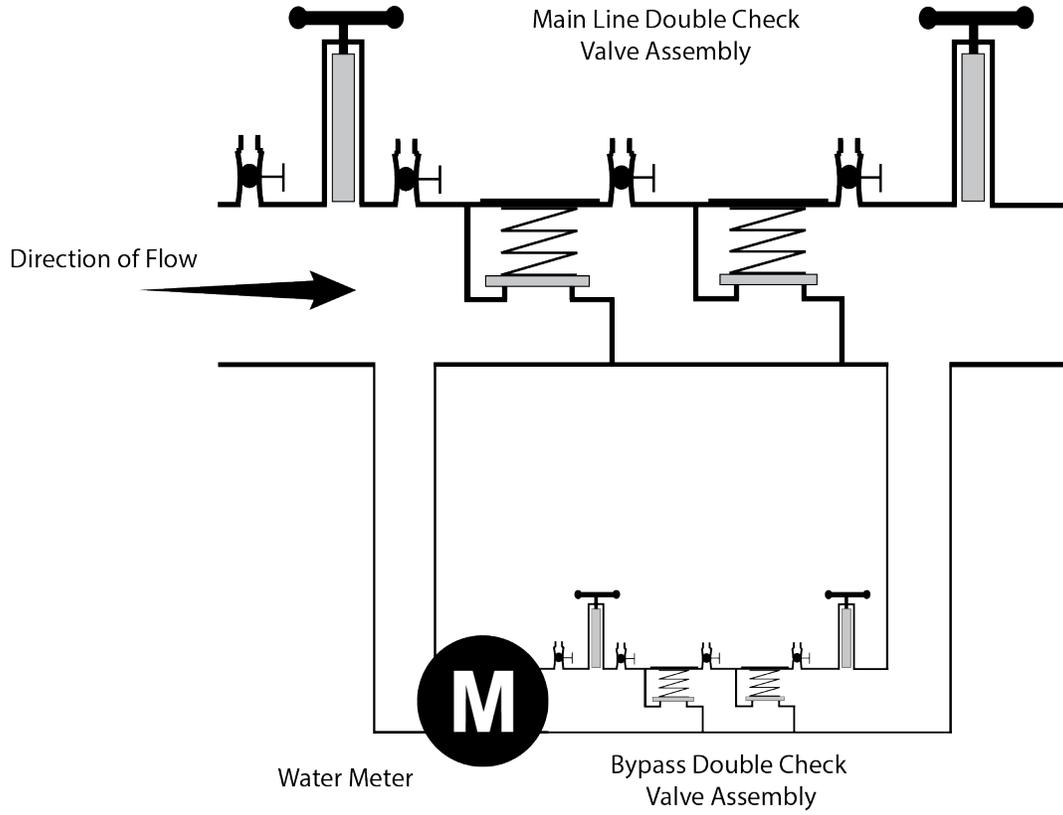
# Appendix C

## Backflow Prevention Assembly Diagrams

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Appendix C

Diagram 1  
*Double check detector backflow prevention assembly<sup>1</sup>*



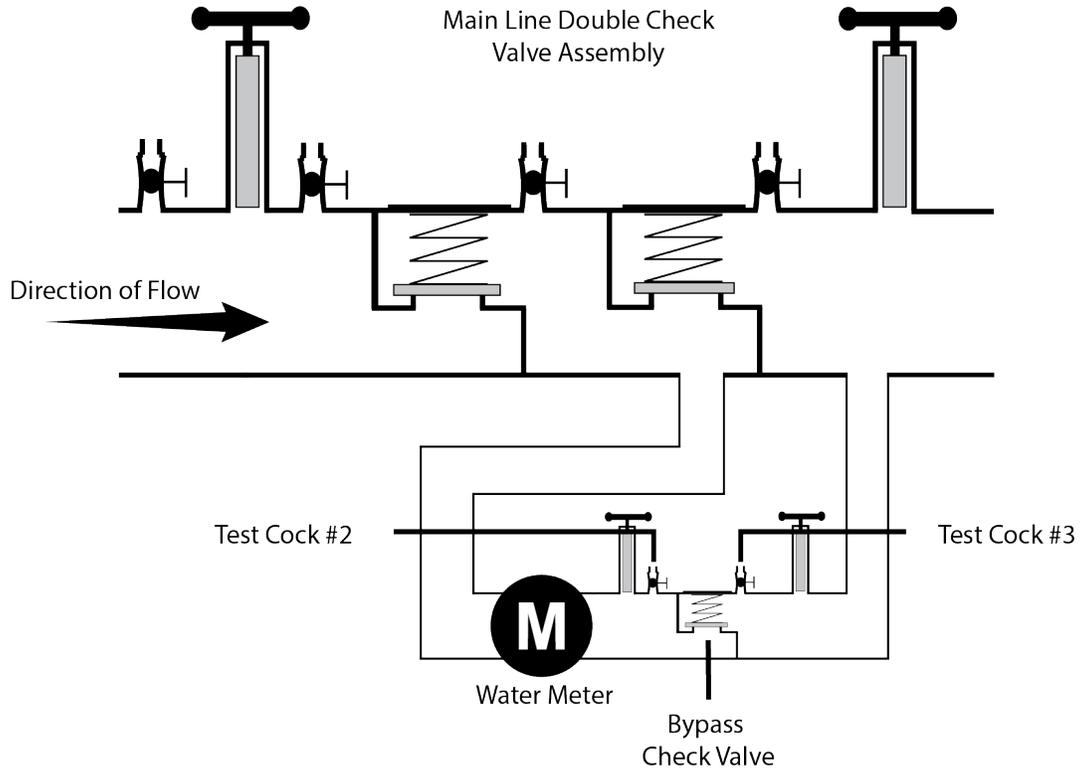
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Appendix C

Diagram 2

*Double check detector backflow prevention assembly – type II*<sup>2</sup>

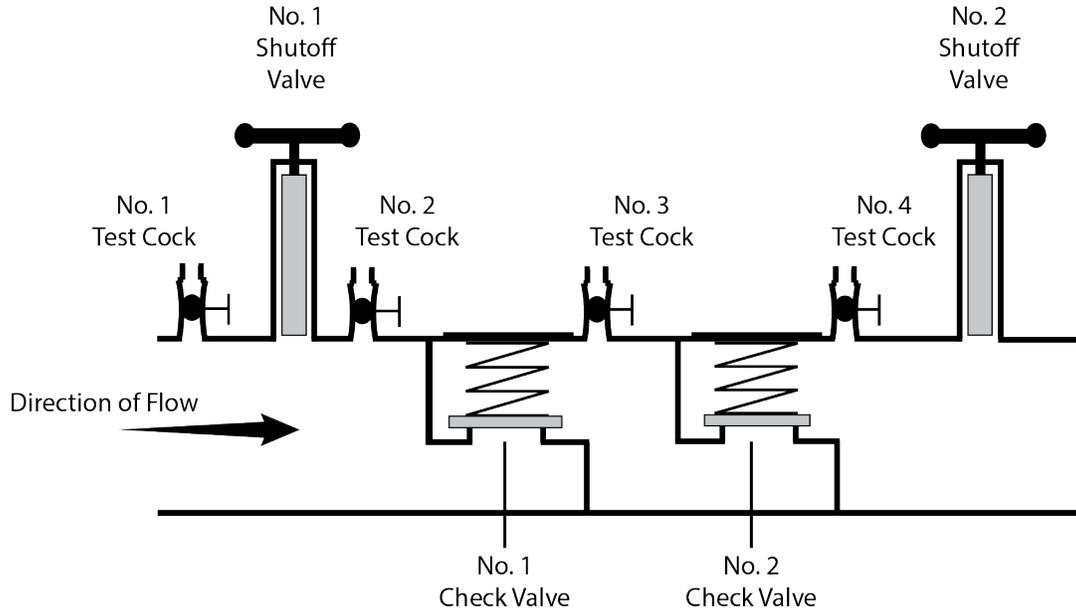


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Appendix C

Diagram 3  
*Double check valve backflow prevention assembly*<sup>3</sup>



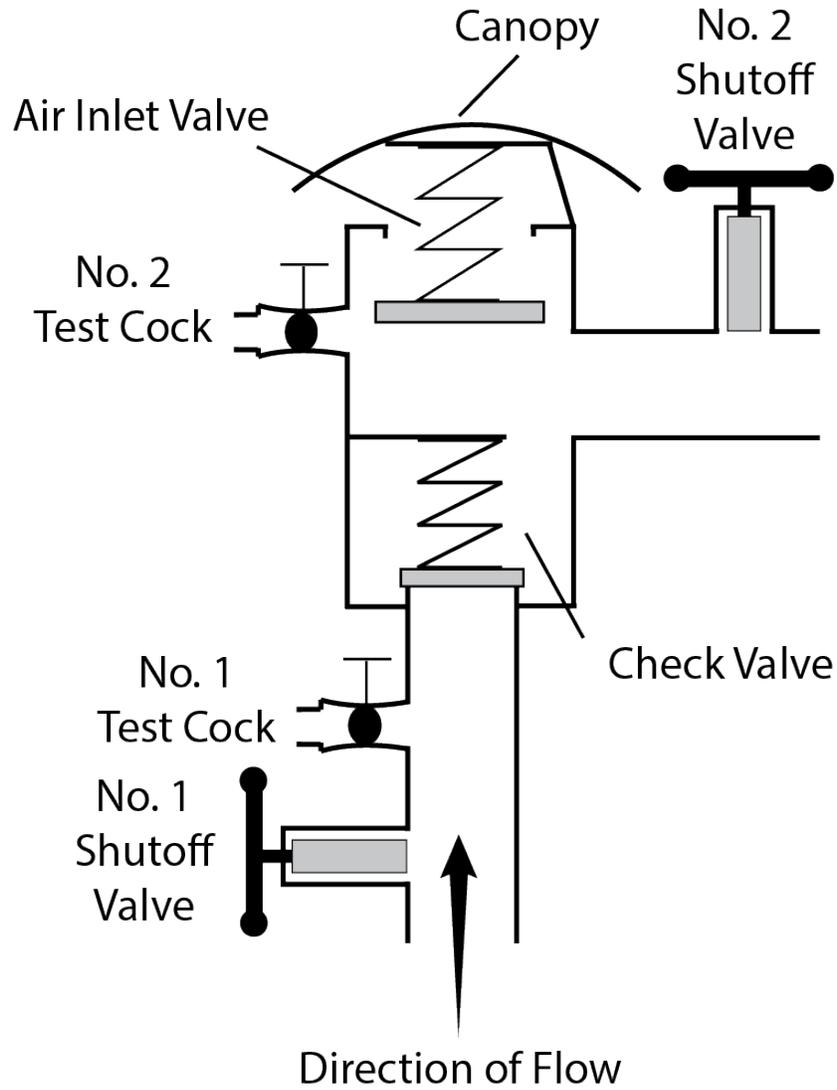
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Appendix C

Diagram 4

*Pressure vacuum breaker backsiphonage prevention assembly*<sup>4</sup>

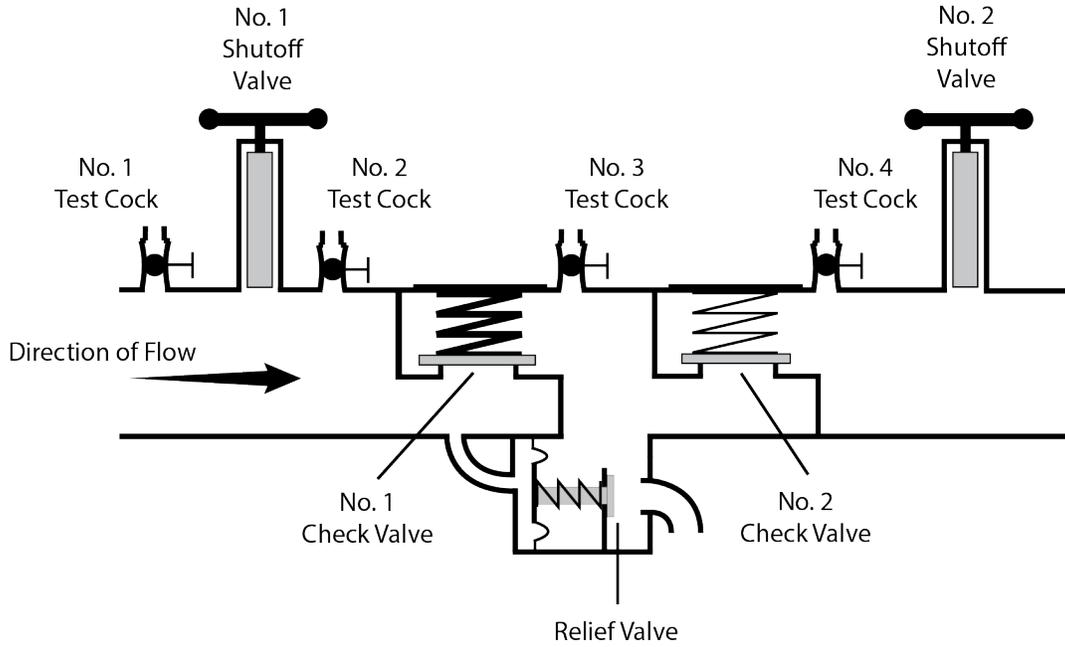


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Appendix C

Diagram 5  
*Reduced pressure principle backflow prevention assembly*<sup>5</sup>



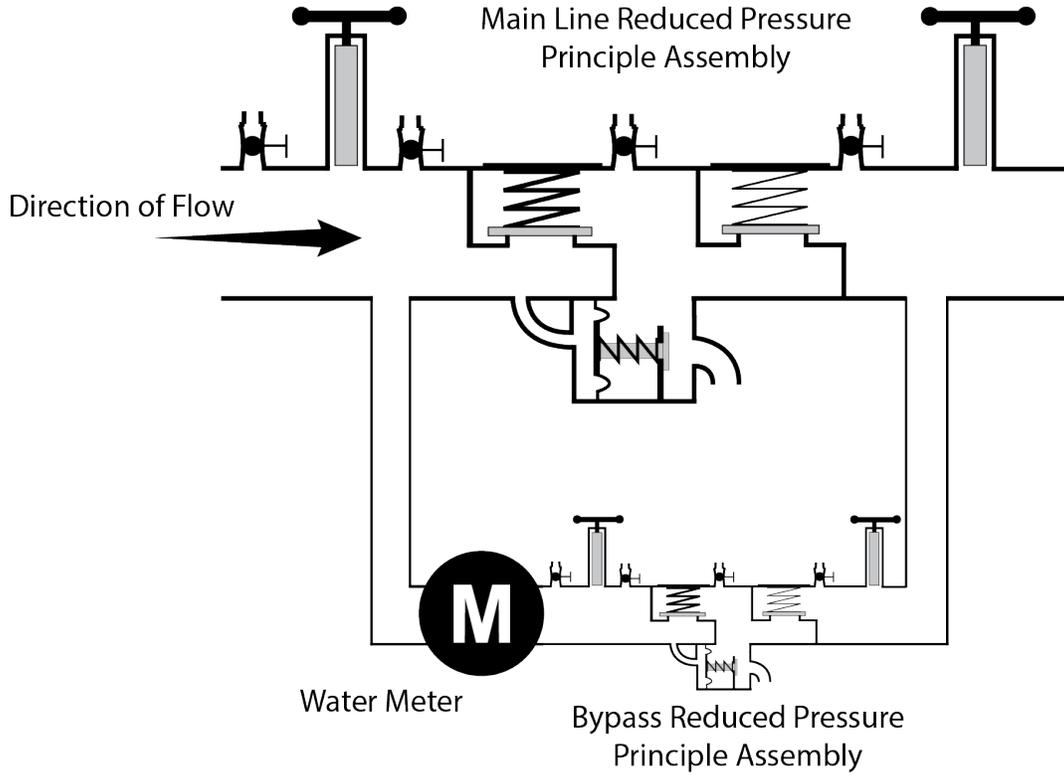
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Appendix C

Diagram 6

*Reduced pressure principle detector backflow prevention assembly*<sup>6</sup>



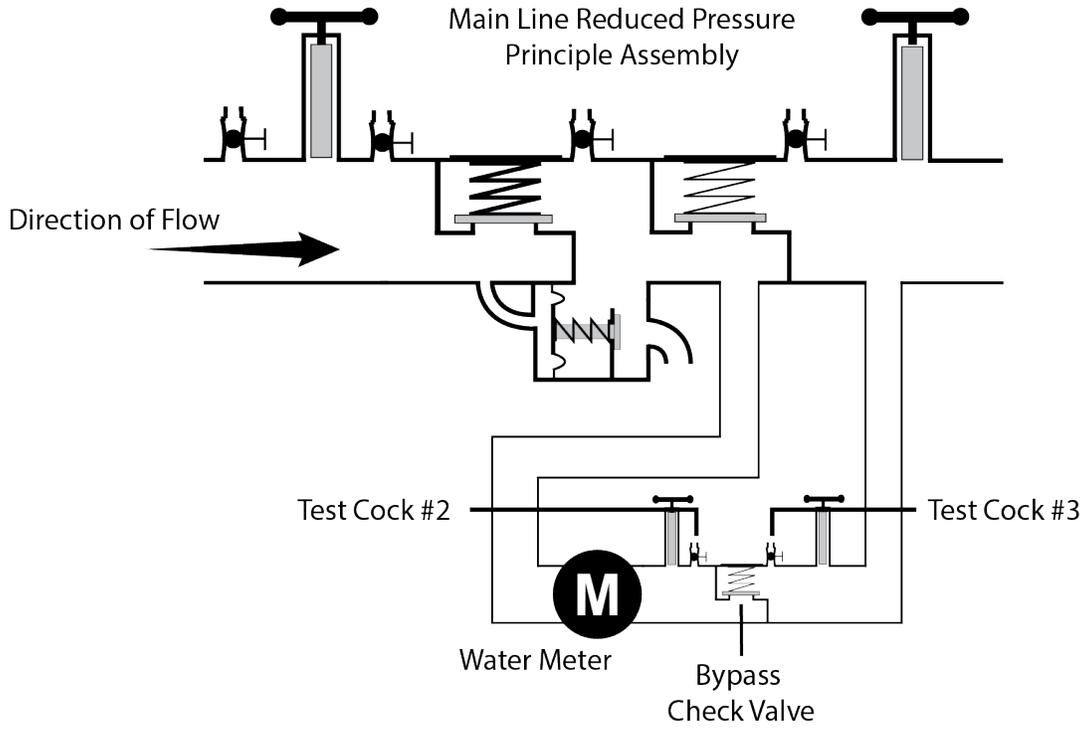
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Appendix C

Diagram 7

*Reduced pressure principle detector backflow prevention assembly – type II<sup>7</sup>*



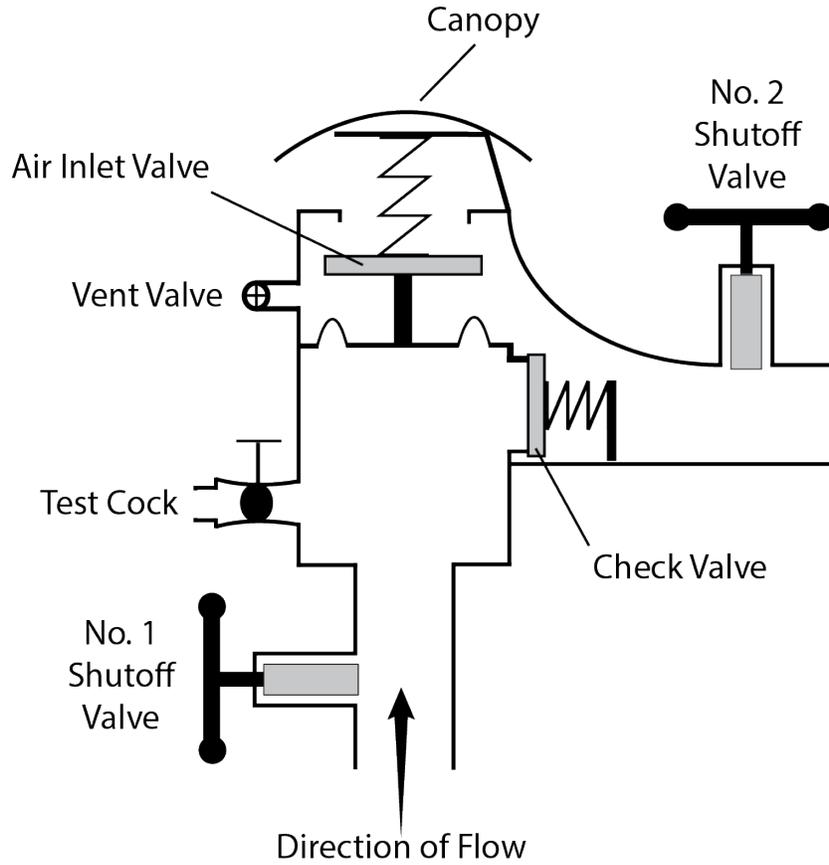
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<sup>7</sup> © 2023 University of Southern California. Used with permission

Appendix C

Diagram 8

*Spill-resistant pressure vacuum breaker backsiphonage prevention assembly*<sup>8</sup>



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<sup>8</sup> © 2023 University of Southern California. Used with permission

## Appendix C

### Swivel-ElI Design and Construction Criteria

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

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

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

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

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

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

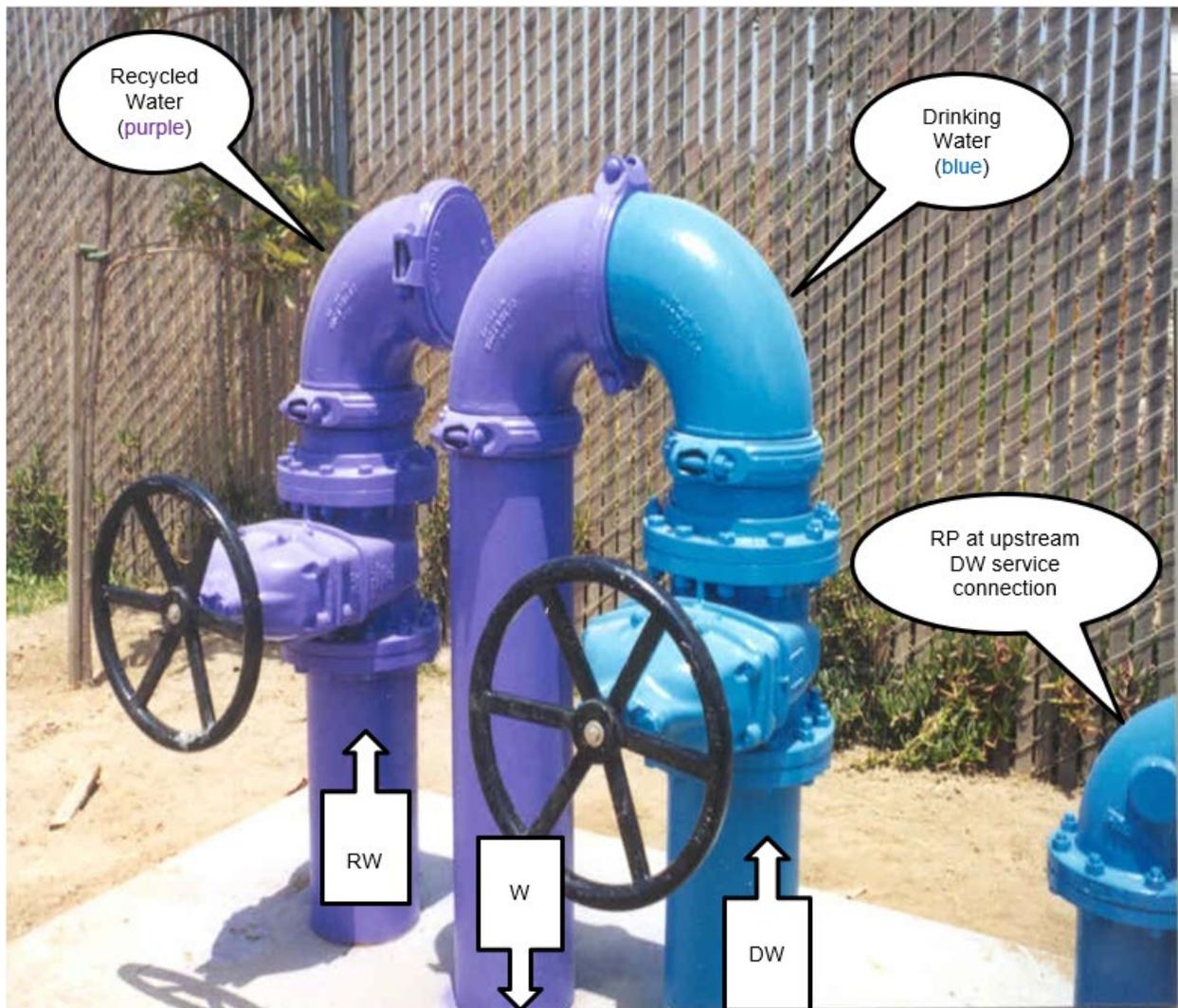
F. The swivel-ell must:

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

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

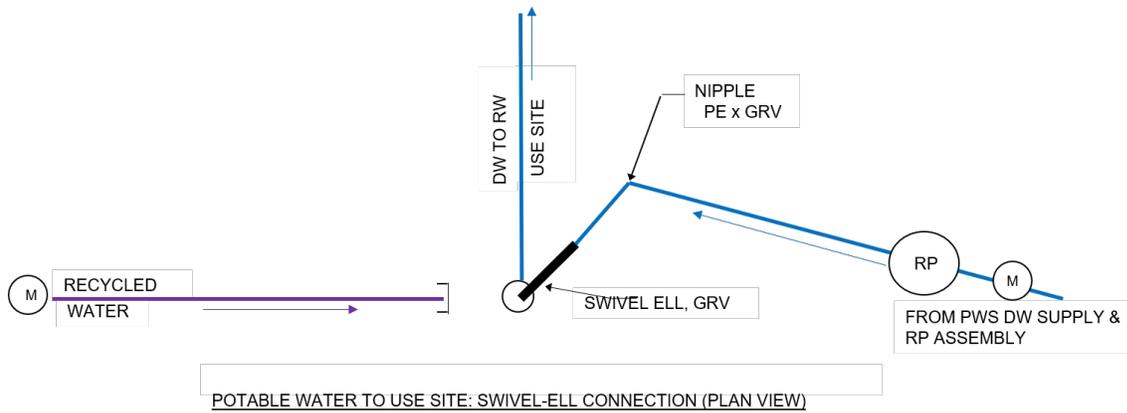
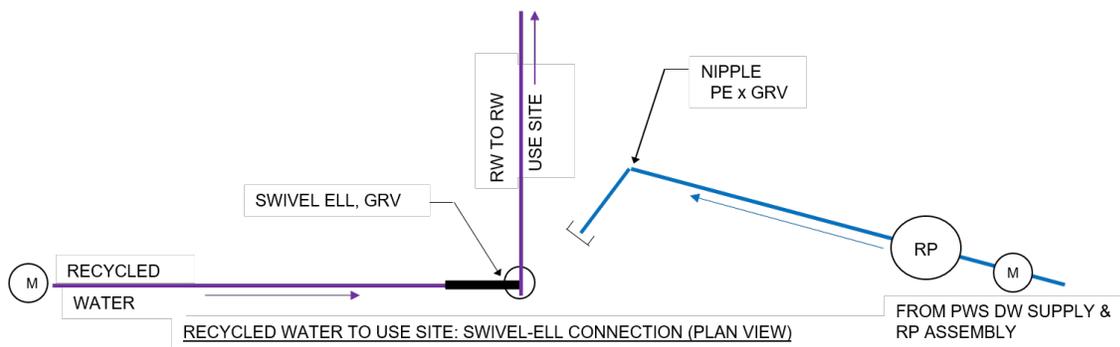
- RP = Reduced pressure principle backflow prevention assembly
- RW = Tertiary-treated recycled water originating from wastewater treatment facility
- DW = Drinking water originating from a public water system
- W = Water (tertiary recycled water or drinking water) to use site. As pictured, configured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

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



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

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



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# Appendix D

High Hazard Premises

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## APPENDIX D

### HIGH HAZARD CROSS-CONNECTION CONTROL PREMISES

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

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

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

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

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

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

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

# **Appendix E**

General Range of Knowledge for Cross-  
Connection Control Specialists

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## APPENDIX E

### General Range of Knowledge for Cross-Connection Control Specialists

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

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

#### (a) GENERAL

- (1) Cross-connection control terminology.
- (2) The history leading to the need for cross-connection control, including causes, impacts, including but not limited to:
  - (A) potable water distribution systems;
  - (B) examples of backflow incidents and actual or potential public health impacts; and
  - (C) evolution of methods of cross-connection control and backflow prevention assemblies.
- (3) Hydraulics (general) – An understanding of hydraulic gradients, pressure variations, flow rates, temperature, the properties of water, backsiphonage, backpressure, and other elements necessary to understand the causes for backflow.
- (4) Public outreach – How to appropriately convey the value of cross-connection control to PWS personnel and the public.

#### (b) LAWS, REGULATIONS, AND GUIDANCE

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

### **(c) HAZARD ASSESSMENTS AND METHODS TO PREVENT BACKFLOW**

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

#### **(1) Surveys:**

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

#### **(2) Assessing Hazards:**

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

#### **(3) Assemblies and Methods for Backflow Prevention:**

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

#### **(d) CROSS-CONNECTION CONTROL PROGRAMS**

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

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

#### **(e) CROSS-CONNECTION TESTS**

A comprehensive understanding of:

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

#### **(f) RECORDKEEPING AND INCIDENT RESPONSE**

A comprehensive understanding of:

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

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# Appendix F

Example Backflow Incident Reporting Form

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# BACKFLOW INCIDENT REPORT FORM

Water System: \_\_\_\_\_

Water System Number: \_\_\_\_\_

Incident Date: \_\_\_\_\_

Incident Time (if known): \_\_\_\_\_

Incident Location: \_\_\_\_\_

How was the incident discovered?

\_\_\_\_\_

Backflow Originated from:

Premise Location: \_\_\_\_\_

Address: \_\_\_\_\_

Premise Contact Person: \_\_\_\_\_ Title: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Connection Type: (please check one)

Industrial  Commercial  Single-Family Residential  Multi-Family Residential

Irrigation  Recycled Water  Water System Facility

Other: \_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

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

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

Estimated Number of Affected Persons: \_\_\_\_\_

Number and description of consumer complaints received:

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Did any consumers report illness? Please describe.

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If applicable, please describe the consumer notification:

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### INVESTIGATION

Please describe the water system investigation including time frames:

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What was the area system pressure? \_\_\_\_\_

Is this within typical range: YES  NO  - typical pressure: \_\_\_\_\_

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

Please describe all sampling:

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

## CORRECTIVE ACTIONS

Please describe the corrective actions taken by the water system:

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

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

Did the premise have backflow prevention assemblies? YES  NO

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

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

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Contact Person: \_\_\_\_\_

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

Other agencies or organizations contacted?

## CERTIFICATION

Name: \_\_\_\_\_ Job Title: \_\_\_\_\_

Certification(s): \_\_\_\_\_

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

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

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Attach the following applicable documentation

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

# **Appendix G**

Related Statutes and Regulations

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

## California Laws and Regulations

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

- Urban and community water systems must have a written policy on discontinuation of residential service for nonpayment and must not discontinue residential service for nonpayment if certain conditions are met. (CHSC sections 116900 – 116926)
- Senate Bill 1263 (2017) requires that before a person submits an application for a permit for a proposed new public water system, the person shall first submit a preliminary technical report which must include a cost comparison of a new public water system and consolidations with an existing system. (CHSC section 116527)
- Effective June 24, 2015, Senate Bill 88 (SB 88) (Statutes 2015, Chapter 27) added sections 116680-116684 to the CHSC, allowing the State Water Board to require certain water systems that consistently fail to provide safe drinking water to consolidate with, or receive an extension of service from, another public water system. The consolidation can be physical or managerial.
- Local health officers may maintain programs for the control of cross-connections by water users, within water users' premises, where public exposure to backflow may occur. Such programs may include water user premises inspections, collection of fees, certification of backflow prevention assembly<sup>1</sup> (BPA) testers, and other discretionary elements. Local health officer BPA tester certification standards must be consistent with the standards prescribed in the CCCPH. Water users are required to comply with all orders, instructions, regulations, and notices from the local health officer regarding installation, testing, and maintenance of a BPA. (CHSC sections 116800 - 116820).
- Pursuant to the California Building Standards Law (CHSC sections 18901 - 18949.31), the California Building Standards Commission (CBSC) must administer the processes related to the adoption, approval, and publication of regulations referred to as the California Building Standards Code (Title 24, California Code of Regulation). Title 24 serves as the basis for the minimum design and construction

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

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

- A BPA intended to convey or dispense water for human consumption via drinking or cooking must meet California’s “lead free” requirements. (CHSC section 116875)
- Limits are established for the installation of backflow protection equipment where automatic fire sprinkler systems are utilized. (CHSC section 13114.7)<sup>2</sup>
- Cross-connection control must be addressed in engineering reports that are required (CCR Title 22, section 60323) for recycled water projects. (Wat. Code section 13552.8)
- If a public agency requires the use of recycled water for toilet and urinal flushing in a structure (except certain mental health facilities), the public health agency must prepare an engineering report that addresses cross-connection control. (Wat. Code section 13554)
- Prior to indoor use of recycled water in a condominium project, the entity delivering the recycled water must submit a report, for State Water Board<sup>3</sup> approval, and include the following related to cross-connection control (Wat. Code section 13553(d)(1)):
  - The condominium project must be provided with a backflow prevention assembly approved by the State Water Board.
  - The backflow prevention assembly must be inspected and tested annually by a certified tester.
  - The condominium project must be tested by the recycled water agency or local agency at least once every four years for indications of possible cross-connections between the condominium’s potable and non-potable systems.
- California’s Department of Water Resources was required to convene a task force, known as the 2002 Recycled Water Task Force, to identify constraints, impediments, and opportunities for the increased use of recycled water and report

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

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

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

- Prepare guidance on dual plumbed regulations (22 CCR sections 60313-60316) consistent with Appendix J of plumbing code (Chapter 15 of 2019 California Plumbing Code, formerly Chapter 16A).
- Support thorough assessment of risk associated with cross-connections between disinfection tertiary recycled water and potable water.
- Ensure uniform interpretation of cross-connection control requirement of Title 22 regulations (recycled water) and Title 17 (cross-connection control regulations)
- Recommend stakeholders to review draft Title 17 regulations.
- A person engaged in the salvage, purchase, or sale of scrap metal who knowingly possesses a backflow prevention assembly (or connections to the assembly or any part of the assembly), or who failed to report the possession of such items, which was previously owned by a utility or public agency, is guilty of a crime. (Pen. Code section 496e)
- Junk dealers or recyclers who possess a backflow prevention assembly (or connections to that assembly or any part of the assembly) without a written certification from the agency or utility owning or previously owning the assembly will be liable to the agency or utility for the wrongful possession. (Civ. Code section 3336.5 and, similarly, Bus. & Prof. Code section 21609.1)

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

## **Federal Laws and Regulations**

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<sup>4</sup> California Department of Water Resources. (2003). *Water Recycling 2030: Recommendations of California's Recycled Water Task Force*

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

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

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

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

ORDINANCE NO. 95-01

CONTROL OF BACKFLOW AND CROSS-CONNECTION

Section 1. CROSS-CONNECTION CONTROL, GENERAL POLICY

1.1 Purpose. The purpose of this Ordinance is:

1.1.1. To protect the public potable water supply of Calaveras County Water District (CCWD) from the possibility of contamination or pollution by isolating within the consumer's internal distribution system(s) or the consumer's private water system(s) such contaminants or pollutants which could backflow into the public water systems.

1.1.2. To promote the elimination or control of existing cross-connections, actual or potential, between the consumer's internal potable water system(s) and non-potable water system(s), plumbing fixtures and industrial piping systems.

1.1.3. To provide for the maintenance of a continuing Program of Cross-Connection Control which will systematically and effectively prevent the contamination or pollution of all potable water systems.

1.2 Responsibility. As required by Title 17, Public Health Regulations of the California Code of Regulations, CCWD shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow of contaminants or pollutants through the water service connection. If, in the judgment of said CCWD, an approved backflow prevention assembly is required (at the consumer's water service connection or within the consumer's private water system) for the safety of the water system, CCWD shall give notice in writing to said consumer to install such an approved backflow prevention assembly(s) at a specific location(s) on his premises. The consumer shall immediately pay CCWD to install such an approved backflow prevention assembly(s) per the approved fee schedule. Failure, refusal or inability on the part of the consumer to install, have tested and maintained said assembly(s) shall constitute grounds for discontinuing water service to the premises until such requirements have been satisfactorily met.

Section 2. DEFINITIONS

2.1 Approved.

a. The term "approved" as herein used in reference to a water supply shall mean a water supply that has been approved by a State or local health agency.

b. The term "approved" as herein used in reference to an air gap, a double check valve assembly, a reduced pressure principle backflow prevention assembly or other backflow prevention assemblies or methods shall mean an approval by CCWD.

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

2.3 Backflow. The term "backflow" shall mean the undesirable reversal of flow of water or mixtures of water and other liquids, gases or other substances into the distribution pipes of the potable supply of water from any source(s). See terms Backpressure (2.4) and Backsiphonage (2.5).

2.4 Backpressure. The term "backpressure" shall mean any elevation of pressure in the downstream piping system (by pump, elevation of piping, or steam and/or air pressure) above the supply pressure at the point of consideration which would cause, or tend to cause a reversal of the normal direction of flow.

2.5 Backsiphonage. The term "backsiphonage" shall mean a form of backflow due to a reduction in system pressure which causes a subatmospheric pressure to exist at a site in the water system.

2.6 Backflow Preventer. An assembly or means designed to prevent backflow.

2.6.1 Air Gap. The term "air gap" shall mean a physical separation between the free flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. An "approved air gap" shall be at least double the diameter of the supply pipe measured vertically above the overflow rim of the vessel -- in no case less than one inch (2.54 cm). This is the "best" protection device.

2.6.2 Reduced Pressure Principle Backflow Prevention Assembly. The term "reduced pressure principle backflow prevention assembly" shall mean an assembly containing two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and at the same time below the first check valve. The unit shall include properly located resilient seated test cocks and tightly closing resilient seated shutoff valves at each end of the assembly. This assembly is designed to protect against a non-health (i.e., pollutant) or a health hazard (i.e., contaminant). This assembly may be used for backflow protection of sewage or reclaimed water, if approved by the health agency and CCWD.

2.6.3 Double Check Valve Backflow Prevention Assembly. The term "double check valve backflow prevention assembly" shall mean an assembly composed of two independently acting, approved check valves, including tightly closing resilient seated shutoff valves attached at each end of the assembly and fitted with properly located resilient seated test cocks. This assembly shall only be used to protect against a non-health hazard (i.e., pollutant).

2.7 Contamination. The term "contamination" shall mean an impairment of the quality of the water which creates an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids, waste etc.

2.8 Cross-Connection. The term "cross-connection" shall mean 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 considered to be cross-connections.

a. The term "direct cross-connection" shall mean a cross-connection which is subject to both backsiphonage and backpressure.

b. The term "indirect cross-connection" shall mean a cross-connection which is subject to backsiphonage only.

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

2.10 Cross-Connection Control by Containment - Service Protection. The term "service protection" shall mean the installation of an approved backflow prevention assembly on the service line leading to and supplying a portion of a consumer's water system where there are actual or potential cross-connections which cannot be effectively eliminated or controlled at the point of cross-connection. This includes situations where it is physically and/or economically infeasible to find and permanently eliminate or control all actual or potential cross-connections.

2.11 Hazard, Degree of. The term "degree of hazard" shall mean either a pollutional (non-health) or contamination (health) hazard and is derived from the evaluation of conditions within the system.

2.11.1 Hazard - Health. The term "health hazard" shall mean an actual or potential threat of contamination of a physical or toxic nature to the public potable water system or the consumer's potable water system that would be a danger to health.

2.11.2 Hazard - Plumbing. The term "plumbing hazard" shall mean an internal or plumbing type cross-connection in a consumer's potable water system that may be either a polluttional or a contamination type hazard. This includes but is not limited to cross-connections to toilets, sinks, lavatories, wash trays and lawn sprinkling systems. Plumbing type cross-connection can be located in many types of structures including homes, apartment houses, hotels and commercial or industrial establishments. Such a connection, if permitted to exist, must be properly protected by an appropriate type of backflow prevention assembly.

2.11.3 Hazard - Polluttional. The term "polluttional hazard" shall mean an actual or potential threat to the physical properties of the water system or the potability of the public or the consumer's potable water system but which would not constitute a health or system hazard, as defined. The maximum degree or intensity of pollution to which the potable water system could be degraded under this definition would cause a nuisance or be aesthetically objectionable or could cause minor damage to the system or its appurtenances.

2.11.4 Hazard - System. The term "system hazard" shall mean an actual or potential threat of severe danger to the physical properties of the public or the consumer's potable water system or of a pollution or contamination which would have a protracted effect on the quality of the potable water in the system.

2.12 Health Agency. The State of California Department of Health Services (DHS) is the health agency who regulates CCWD.

2.13 Industrial Fluids. The term "industrial fluids" shall mean any fluid or solution which may be chemically, biologically or otherwise contaminated or polluted in a form or concentration which would constitute a health, system, polluttional or plumbing hazard if introduced into an approved water supply. This may include, but not be limited to: polluted or contaminated used waters; all types of process waters and "used waters" originating from the public potable water system which may deteriorate in sanitary quality; chemicals in fluid form; plating acids and alkalies; circulated cooling waters connected to an open cooling tower and/or cooling waters that are chemically or biologically treated or stabilized with toxic substances; contaminated natural waters such as from wells, springs, streams, rivers, bays, harbors, seas, irrigation canals or systems, etc.; oils, gases, glycerine, paraffins, caustic and acid solutions and other liquid and gaseous fluids used industrially, for other processes, or for firefighting purposes.

2.14 Pollution. The term "pollution" shall mean an impairment of the quality of the water to a degree which does not create a hazard to the public health but which does adversely and unreasonably affect the aesthetic qualities of such waters for domestic use.

2.15 Water - Potable. The term "potable water" shall mean any public potable water supply which has been investigated and approved by the health agency. The system must be operating under a valid health permit. In determining what constitutes an approved water supply, the health agency has final judgment as to its safety and potability.

2.16 Water - Non-Potable. The term "non-potable water" shall mean a water supply which has not been approved for human consumption by the health agency.

2.17 Water - Service Connection. The term "service connection" shall mean the terminal end of a service connection from the public potable water system (i.e., where the water purveyor may lose jurisdiction and sanitary control of the water at its point of delivery to the consumer's water system). If a water meter is installed at the end of the service connection, then the service connection shall mean the downstream end of the water meter.

2.18 Water - Used. The term "used water" shall mean any water supplied by a water purveyor from a public potable water system to a consumer's water system after it has passed through the service connection and is no longer under the control of the water purveyor.

### Section 3. REQUIREMENTS

#### 3.1 Water System

3.1.1 The water system shall be considered as made up of two parts: CCWD's System and the Consumer's System.

3.1.2 CCWD's system shall consist of the source facilities and the distribution system; and shall include all those facilities of the water system under the complete control of CCWD (up to and including the meter), to the point where the consumer's system begins (just past the meter).

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

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

3.1.5 The consumer's system shall include those parts of the facilities beyond the termination of CCWD's distribution system which are utilized in conveying potable water to points of use.

#### 3.2 Policy

3.2.1 No water service connection to any premise shall be installed or maintained by CCWD unless the water supply is protected as required by Federal, State or local laws and regulations and this Ordinance. Service of water to any premise shall be discontinued by CCWD if a backflow prevention assembly required by this Ordinance is not installed, tested and maintained, or if it is found that a backflow prevention assembly has been removed, bypassed, or

if an unprotected cross-connection exists on the premises. Service will not be restored until such conditions or defects are corrected.

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

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

a. In the case of premises having an auxiliary water supply which is not or may not be of safe bacteriological or chemical quality and which is not acceptable as an additional source by CCWD, the public water system shall be protected against backflow from the premises by installing an approved backflow prevention assembly in the service line commensurate with the degree of hazard.

b. In the case of premises on which any industrial fluids or any other objectionable substance is handled in such a fashion as to create an actual or potential hazard to the public water system, the public system shall be protected against backflow from the premises by installing an approved backflow prevention assembly in the service line commensurate with the degree of hazard. This shall include the handling of process waters and waters originating from the water purveyor's system which have been subject to deterioration in quality.

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

d. See the Appendix for approved application of the policies of this section of the ordinance to specific circumstances.

3.2.4 The type of protective assembly required to be installed at the service connection under subsections 3.2.3a, b, and c shall depend upon the degree of hazard which exists as follows:

a. In the case of any premise where there is an auxiliary water supply as stated in subsection 3.2.3.a of this section, the public water system shall be protected by an approved air gap or an approved reduced pressure principle backflow prevention assembly.

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

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

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

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

3.2.5 Any backflow prevention assembly required herein shall be a make, model and size approved by CCWD. The term "Approved Backflow Prevention Assembly" shall mean an assembly that has been manufactured in full conformance with the standards established by the American Water Works Association entitled:

AWWA/ANSI C510-92 Standard for Double Check Valve Backflow Prevention Assemblies;

AWWA/ANSI C511-92 Standard for Reduced Pressure Principle Backflow Prevention Assemblies; and, have met completely the laboratory and field performance specifications of the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California (USCFCCCHR) established in:

Specifications of Backflow Prevention Assemblies -- Section 10 of the most current edition of the Manual of Cross-Connection Control.

Said AWWA and USC FCCCHR standards and specifications have been adopted by CCWD. Final approval shall be evidenced by a "Certificate of Compliance" for the said AWWA standards;

or "Certificate of Approval" for the said USC FCCCHR Specifications; issued by an approved testing laboratory.

The following testing laboratory has been qualified by CCWD to test and approve backflow prevention assemblies:

Foundation for Cross-Connection Control and Hydraulic Research  
University of Southern California  
KAP-200 University Park MC-2531  
Los Angeles, California 90089-2531

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

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

3.2.6 A field test must be performed by a certified backflow prevention assembly tester upon installation of the backflow prevention assembly and at least once per year. In those instances where CCWD deems the hazard to be great enough, field tests may be required at more frequent intervals. These tests shall be at the expense of the water user and shall be performed by CCWD personnel or by a certified tester approved by CCWD. It shall be the duty of CCWD to see that these tests are made in a timely manner. These assemblies shall be repaired, overhauled or replaced at the expense of the consumer whenever said assemblies are found to be defective. Records of such tests, repairs and overhaul shall be kept by CCWD; a copy is available to the consumer.

3.2.7 All presently installed backflow prevention assemblies which do not meet the requirements of this section but were approved devices for the purposed described herein at the time of installation and which have been properly maintained, shall, except for the testing and maintenance requirements under subsection 3.2.6, be excluded from the requirements of these rules so long as CCWD is assured that they will satisfactorily protect CCWD's system. Whenever the existing device is moved from the present location or requires more than minimum maintenance or when CCWD finds that testing and repairing becomes hazardous to perform, the unit shall be replaced by an approved backflow prevention assembly meeting the requirements of this section. Replacement and testing will be done by CCWD or their agent at the expense of the consumer.

3.2.8 CCWD is authorized to make all necessary and reasonable rules and policies with respect to the enforcement of this Ordinance. All such rules and polices shall be consistent with the provisions of this ordinance.

FURTHER ORDAINED that this Ordinance shall take effect on Sept. 13, 1995 shall be published in the Calaveras Prospect within ten days from the date of passage.

PASSED AND ADOPTED this 13th day of Sept., 1995 by the following vote:

AYES: Directors Dooley, Geiszler, Weinkle, Dunn and Hodgson  
NOES: None  
ABSENT: None

CALAVERAS COUNTY WATER DISTRICT

*ABeneville*

\_\_\_\_\_  
President

ATTEST:

*Steve Felte*  
\_\_\_\_\_  
Secretary

## APPENDIX

### PRIVATE WELLS ON PROPERTY SERVED BY CCWD

#### Abandonment:

A well will be considered abandoned and no backflow device needed when the following work has been completed. An inspection will be done to verify abandonment.

- \* Removal of all pump equipment and power source.
- \* Fill in the well shaft to the existing ground.  
Gravel can be used to within 20 ft of the top of the shaft and the rest of the shaft to ground level should be filled in with concrete.

#### Active or inactive wells, but not abandoned as defined above;

Well system which is or can easily be connected to CCWD's system and is LESS than 200 feet from CCWD's system:  
A Reduced Pressure Principle device (RP) is required.

Well system not connected to CCWD's system and MORE than 200 feet from CCWD's system:  
No device is needed.

### IRRIGATION SYSTEMS

Residential - CCWD exempts most residential lawn/garden irrigation systems from service backflow protection. The Uniform Plumbing Code (UPC) already mandates internal protection through the use of Atmospheric and or Pressure Vacuum Breaker devices (AVB or PVB). CCWD reserves the right to inspect these residential irrigation systems to see that these devices are installed properly.

Parks - CCWD will inspect all parks. AVB's and/or PVB's will be allowed unless there is:

- \* fertilizer or pesticide injection,
- \* an auxilliary water supply, or
- \* the AVB/PVB cannot be installed properly.

If any of these exist, a Reduced Pressure Principle (RP) backflow assembly will be required at the service connection.

### ANIMAL WATERING TROUGHS AND PONDS

CCWD will be inspecting all consumers who have animal watering troughs and/or ponds (decorative, fish etc.) on their property. Hoses are quite often used to replenish the water supply to these containers. The best and cheapest protection is to "hard pipe" the supply line creating an air gap between the end of the line and the water surface; the required air gap is a minimum of one inch or double the diameter of the supply line, whichever is greater.

If this cannot be done or CCWD notices habitual violations of hose ends being left below the water surface, a Reduced Pressure Principle (RP) backflow assembly will be required at the consumer's service.

### FIRE SYSTEMS

Commercial fire protection systems consist of sprinklers, hose connections and hydrants. Sprinkler systems may be dry or wet, open or closed. Systems of fixed-spray nozzles may be used indoors or outdoors for protection of flammable-liquid and other hazardous processes. Fire suppression chemicals and/or auxilliary water supplies may also be introduced into the spray nozzle system. Many times, automatic sprinkler systems are equipped with fire department pumper connections.

For cross-connection control, fire protection systems may be classified on the basis of water source and arrangement of supplies as follows:

#### Class 1

\* direct connection from public water mains only; no pumps, tanks or reservoirs; no physical connection from other water supplies; no antifreeze or other additives of any kind; all sprinkler drains discharging to atmosphere, dry wells or other safe outlets.

Device required:

Ordinarily, no device is needed. The exceptions are:

- \* multiple services
- \* water quality deterioration in unflushed lines

If either of these conditions exist, a Double Check with a Detector Check is required.

Class 2

\* Same as Class 1, except booster pumps may be installed in the connections from the street mains.

Device required:

See Class 1 requirements.

Class 3

\* Direct connection from the water supply main PLUS one or more of the following; elevated tanks; fire pumps taking suction from above-ground reservoirs or tanks; and pressure tanks. (The tanks/reservoirs are filled with potable water.)

Device required:

Double Check with a Detector Check.

Class 4

\* Direct connection from the water supply main AND an auxilliary water supply on or available to the premises; or an auxilliary supply located within 1,700 feet of the pumper connection.

Device required:

Reduced Pressure Principle or Double Check either with a Detector Check depending on the quality of the auxilliary supply.

Class 5

\* Direct connection from the water supply main and interconnected with auxilliary supplies, such as: pumps taking suction from reservoirs exposed to contamination, or rivers and ponds; driven wells; industrial water systems; or where anti-freeze or other additives are used.

Device required:

Reduced Pressure Principle with a Detector Check.

Class 6

\* Direct connection from the water supply mains AND combined with an industrial fire protection system.

Device required:

Reduced Pressure Principle or Double check either with a Detector Check depending on the type of industrial system.

backflow/ordinance

# Agenda Item

DATE: May 6th, 2025

TO: Engineering Committee, Calaveras County Water District  
Michael Minkler, General Manager & Kevin Williams, District Engineer

FROM: Damon Wyckoff, Director of Operations

RE: Update to the District Sanitary Sewer Management Plan

---

## Background:

A Sanitary Sewer Management Program (SSMP) exists to ensure the proper operation, maintenance, and management of a sanitary sewer system. It describes the activities the Calaveras County Water District uses to manage our thirteen wastewater collections systems effectively. Regulation requires the SSMP to be updated routinely.

Wastewater Collections Systems were the last major component of a wastewater system to be regulated. The California State Water Resources Control Board (SWRCB) originally promulgated a waste discharge requirement (WDR) permit to regulate sanitary sewer systems in 2006, entitled SWRCB Order No. 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. This order set the stage to require SSMPs to be developed thereafter. One key component is the fact that SSMPs undergo a periodic audit followed by a complete overhaul of the document. Prior to June 5<sup>th</sup>, 2023, audits of the SSMP were required every two years, and updates required every five years. June 5, 2023, the SWRCB adopted a new General Order, WDRs for Sanitary Sewer Systems No. 2022-0103-DWQ. The new General Order now includes Regulatory Compliance and Reporting Requirements for spills from private sewer laterals, known as Category 4 spills. Another change to SSMP requirements as a result of the new General Order is related to when audits and overhauls must now be completed. Updates must now take place every six years and Audits must occur every three years as opposed to five and two respectively, from the previous regulation.

The key reasons for having an SSMP include:

1. **Preventing Sewer Overflows:** Sanitary sewer overflows (SSOs) can release untreated sewage into the environment, posing serious health and environmental risks. An SSMP helps minimize these events.
2. **Regulatory Compliance:** Many local, state, and federal agencies (such as the U.S. EPA) require SSMPs to comply with environmental laws like the Clean Water Act.

3. **Protecting Public Health and the Environment:** Proper sewer management prevents the contamination of waterways, drinking water sources, and public spaces.
4. **Maintaining Infrastructure:** It ensures the sewer system is regularly inspected, repaired, and upgraded, which helps extend its lifespan and reduce costly emergency repairs.
5. **Improving System Reliability:** Through better planning, training, and data collection, an SSMP improves system performance and service reliability.
6. **Community Accountability and Transparency:** An SSMP provides documentation of how the system is managed, which builds trust with the public and demonstrates responsible stewardship.

CCWD Staff worked to ensure that this most recent update addresses the requirements of the regulation and provides the most current and accurate relevant information. Throughout the work effort, Staff's focus was clarity, efficiency, and effectiveness.

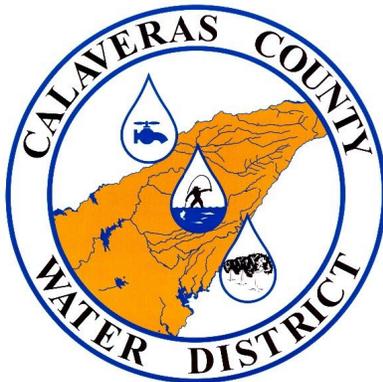
#### **FINANCIAL CONSIDERATIONS**

None at this time

# CALAVERAS COUNTY WATER DISTRICT

## SEWER SYSTEM MANAGEMENT PLAN JUNE 2, 2021 UPDATE

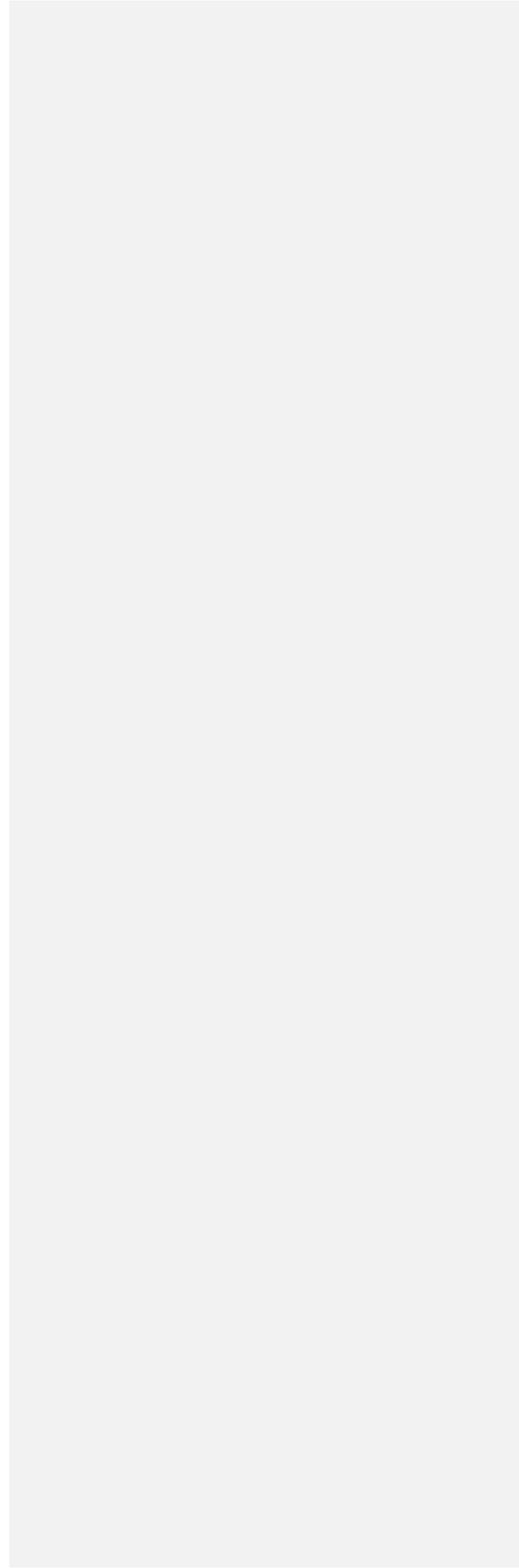
In accordance with  
California State Water Resources Control Board  
Order No. ~~2023-106-0003-DWQ~~ and No. ~~WQ-2013-0058-EXEC~~  
General Waste Discharge Requirements ~~General Order~~ for Sanitary Sewer Systems



120 Toma Court  
San Andreas, California 95249  
(209) 754-3543  
(209) 754-9620 Fax

Adopted on June 9, 2021 by Board Action

DRAFT



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- Appendix E: Calaveras County Water District Rules and Regulations
- Appendix F: Calaveras County Water District 2019 SSMP Program Audit

### REFERENCE DOCUMENTS

1. California Irrigation District Law (Water Code § 20500 et seq.)
2. Clean Water Act (33 U.S.C. § 1251 et seq.)
3. Porter Cologne Water Quality Act (Water Code § 13000 et seq.)
4. California Health & Safety Code § 25100 et seq.
5. Resource Conservation and Recovery Act of 1976 (42 U.S.C. § 6901 et seq.)
6. California Government Code §§ 54739, 54740
7. Calaveras County Water District: Ordinance No. 84-1, Rules and Regulations
8. California Occupational Safety and Health Administration: Pocked Guide for the Construction Industry
9. Calaveras County Water District: Design and Construction Standards (January 20~~25~~<sup>09</sup>)
10. Calaveras County Water District: Overflow Emergency Response Plan (~~June~~<sup>April</sup> 20~~21~~<sup>19</sup>)
11. Association of California Water Agencies: Professional Development Program for Water Utility Employees, Traffic Control and Flagger
12. California Water Environment Association: SSO-WDR Simple Solution on Writing Detailed Reports
13. [CWEA North Central Training Group: Proper Trenching and Shoring](#)

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## LIST OF ABBREVIATIONS AND ACRONYMS

ASCE	American Society of Civil Engineers
ACWA	Association of California Water Agencies
BMP	Best Management Practice
CARB	California Air Quality Resources Board
ARB	California Air Resources Board
CASA	California Association of Sanitation Agencies
CAL OES	California Office of Emergency Services
CEHA	Calaveras County Environmental Health Agency
<u>CWEA</u>	<u>California Water Environment Association</u>
LAFCO	Calaveras County Local Agency Formation Commission
CCWD / District	Calaveras County Water District
WWS-RR	Calaveras County Water District Rules and Regulations Governing the Furnishing of Water and/or Wastewater Services
CVCWA	Central Valley Clean Water Association
CCTV	Closed Circuit Television
CIP	Capital Improvement Program
CMMS	Computerized Maintenance Management System
CMOM	Capacity, Management, Operations and Maintenance
RWQCB	Central Valley Regional Water Quality Control Board
CWEA	California Water Environment Association
ECS	Environmental Compliance Services
ERP	Emergency Response Plan
FOG	Fats, Oils, and Grease
FSE / FSEs	Food Service Establishments
General Order	General Waste Discharge Requirements for Sanitary Sewer Systems
GIS	Geographical Information System
GRD	Grease Removal Device
I/I	Inflow / Infiltration
IPP	Industrial Pretreatment and Pollution Prevention Program
JPIA	Joint Powers Insurance Authority
NPDES	National Pollution Discharge Elimination System

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## LIST OF ABBREVIATIONS AND ACRONYMS

O&M	Operations and Maintenance
ORD84-1	Calaveras County Water District Ordinance No. 84-1
OES	State Office of Emergency Services
OERP	Overflow Emergency Response Plan
PM	Preventative Maintenance
PLSD	Private Lateral Sewer Discharge
R&R	Rehabilitation and Replacement
STEP	Septic Tank Effluent Pumping
SSMP	Sewer System Management Plan
SSO / SSOs	Sanitary Sewer Overflow or Overflows
<b>SSS WDR</b>	Combined General Waste Discharge Requirements for Sanitary Sewer Systems and Amended Monitoring and Reporting Program
SWRCB	State Water Resources Control Board
SCADA	Supervisory Control and Data Acquisition
WEF	Water Environment Federation
WDR / WDRs	Waste Discharge Requirements

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## 1. INTRODUCTION

This introductory section provides background information on the purpose and organization of this Sewer System Management Plan (SSMP) and provides a brief overview of the Calaveras County Water District (CCWD or District) service area and sewer system. This document has been prepared in compliance with the California State Water Resources Control Board (SWRCB) Statewide General Waste Discharge Requirement for Sanitary Sewer Systems ~~and General Order 2022-0103-DWQ, Order No. 2006-0003-DWQ, and the Amended Monitoring and Reporting Program, Order No. WQ-2013-0058-EXEC.~~ ~~The two combined Orders are~~ referenced in this document as the **SSS WDR**.

Collection systems are the last major component of the wastewater management system to be regulated. The **SSS WDR** applies to entities in California (also referred to as enrollees) that own or operate a sanitary sewer system greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility. As a qualifying entity, the District is required to submit a complete and updated Sewer System Management Plan every ~~six~~<sup>five</sup> years.

### 1.1. Document Organization

This SSMP is intended to meet the requirements of the **SSS WDR** and is organized into the following thirteen sections.

1. Introduction
2. Goals
3. Organization
4. Legal Authority
5. Operations and Maintenance Program
6. Design and Performance Provisions
7. Overflow Emergency Response Plan
8. Fats, Oils and Grease Control Program
9. System Evaluation and Capacity Assurance Plan
10. Monitoring, Measurements and Program Monitoring Measurements and Program Modifications
11. SSMP Program Audits
12. Communications Program
13. SSMP Completion and Certification

---

## 1. INTRODUCTION

### 1.2. Calaveras County Water District Utility Services and Service Area

CCWD was formed in 1946 under the laws of the State as a public agency to provide water and sewer service to the residents of Calaveras County. The District is a non-profit governmental agency, also known as a “special district,” governed by an elected five-member Board of Directors, administratively and fiscally independent from the Calaveras County government. The District’s Certificate of Incorporation is provided as **Appendix A**.

The District is empowered to provide water and sewer services for any beneficial purpose within Calaveras County, and assumes responsibility for all of Calaveras County, except where the County is served by other agencies. While the District accepts responsibility for all of Calaveras County, the District does not provide water and/or sewer services to all communities within the County. Large sections of rural area are served by private wells and/or septic tanks, or other small community water and/or wastewater systems. The District’s service area encompasses approximately 663,000 acres within Calaveras County.

As a special district, CCWD provides sanitary sewer collection and treatment services to approximately 5,000 municipal customers throughout the County. The District operates ~~thirteen twelve~~ (13~~2~~) wastewater treatment and disposal facilities and ~~tenfourteen~~ (10~~4~~) sanitary sewer collection systems. Collection systems are divided into conventional gravity collection and Septic Tank Effluent Pumping (STEP) systems. The later system utilizes septic tanks located on the customer’s property for pretreatment, and a network of small diameter pipelines to convey pumped septic tank gray water. A breakdown of the District’s collection method in each geographical area is shown in Table 1.

The District’s wastewater collection system contains approximately 100 miles of gravity pipelines, 230 miles of force mains, 1,700 manholes, 50 lift stations, 4,600 private sewer service laterals and ~~746650~~ septic tanks. The majority of these septic treatment systems, approximately 600 septic systems, are maintained by the District work force.

Each District collection system is operated independently and includes a dedicated wastewater treatment facility. Therefore, the District is required to operate with ~~tenhirteen~~ (10~~3~~) collection system permits and ~~thirteen (13)~~~~a similar number of~~ treatment permits. Annual permit cost to the District are calculated by SWRCB on the basis of a total of twenty-seven (27) permits<sup>1</sup>.

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<sup>1</sup> Wastewater originating from the Six Mile Road system is treatment at the Angels Camp WWTF, and the Copper Cove, La Contenta, and Forest Meadows WWTF each have one additional permit.

## 1. INTRODUCTION

Table 1-1: Collection Method by Service Area

Community / District Service Area	Type of Sanitary Sewer Collection <sup>1</sup>
Arnold	Gravity Collection
Copper Cove	Gravity Collection
Country Houses <sup>3</sup>	Gravity Collection
Douglas Flat and Vallecito	Gravity Collection and STEP
Forest Meadows	Gravity Collection
Indian Rock Vineyards	STEP
La Contenta/Rancho Calaveras	Gravity Collection
Sequoia Woods/Mountain Retreat	Gravity Collection
Six Mile Road <sup>4</sup>	STEP
Southworth	STEP
Wallace <sup>2</sup>	STEP
West Point	STEP
Wiseyville <sup>3</sup>	Gravity Collection

Note:

1. Septic Tank Effluent Pumping (STEP)
2. Septic tank and pump systems maintained by the customer.
3. Collections System is less than 1 mile in length. Un-permitted.
- 2-4. Septage delivered to the City of Angels Camp

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## 2. GOALS

SSS WDR Requirement: *The goal of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system. This will help reduce and prevent SSOs, as well as mitigate any SSOs that occur.*

This component of the SSMP identifies goals that the District has established for the management, operation and maintenance of the sewer system and discusses the role of the SSMP in supporting those goals. The goals provide focus for District staff to continue high-quality work and implement improvements in the management of the District's wastewater collection system.

### 2.1. Mission and Vision Statements

Calaveras County Water District Mission Statement:

*“Protect, enhance, and develop Calaveras County’s water resources and watersheds to provide safe, reliable, and cost-effective services to our communities.”*

~~“Our team is dedicated to protecting, enhancing, and developing our rich water resources to the highest beneficial use for Calaveras County, while maintaining cost-conscious, reliable service, and our quality of life, through responsible management.”~~

Calaveras County Water District Vision Statement:

*“To be a trusted leader, to collaborate with our valued partners, and provide healthy, innovative, and resilient water resource solutions.”*

### 2.2. Goals

In support of the District's mission and vision statements, for the operation and maintenance of its sewer system, the District has developed the following goals.

- 1) Protect the health and safety of people and the environment;
- 2) Minimize number and impact of SSOs that occur;
- 3) Meet all applicable regulatory notification and reporting requirements;
- 4) Cost effectively minimize infiltration/inflow (I/I); through smoke testing as well as manhole and barrel inspections during rain events.
- 5) Implement regular, proactive maintenance of the system to remove roots, debris and fats oils and grease (FOG) in areas prone to blockages that may cause sewer backups and overflows.

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## 2. GOALS

- 6) Where feasible, provide overflow capacity at District lift stations, at a minimum, where impact of overflow is judged to be significant.
- 7) Involve Operations staff in the strategic planning process to develop improvement plans for~~for~~ the collection system.

These goals are also adopted by the District's Operations Department in the annual sewer system Operations and Maintenance Program.

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3. ORGANIZATION

SSS WDR Requirements: *The SSMP must identify each of the following items.*

- A. *The name of the agency's responsible or authorized representative.*
- B. *The names and telephone numbers of management, administrative, and maintenance positions with responsibility for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation.*
- C. *The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable such as, County Health Officer, County Environmental Health Agency, Regional Water Board, and/or State Office of Emergency Services (OES).*

This section of the SSMP identifies District staff responsible for implementing the SSMP, responding to an SSO event, and meeting the SSO reporting requirements. This section also includes the designation of the Authorized Representative to meet RWQCB requirements for completing and certifying spill reports.

**3.1. District's Authorized Representative**

The District is responsible for implementing and maintaining all components of this SSMP and is authorized to submit SSO reports to the appropriate government agencies. The Collections System Supervisor is the authorized representative for all wastewater collection system matters and is authorized to certify electronic spill reports submitted to the SWRCB. In the absence of the Collections System Supervisor, a responsible charge assignment is made by the Director of Operations, the Plant Operations Manager, or the Construction and Maintenance Manager.

**3.2. Responsible Staff and Lines of Authority**

Implementation, management, and updating of the SSMP involves staff from four District departments: Administration, Engineering, Operations and Public Information, as well as the District Board of Directors. The District organization for all departments is shown on **Figure 3-1**. The names and phone numbers of the parties involved in this chain of communication are shown in **Appendix B**, the Overflow Emergency Response Plan. Contact information concerning elected District Board Members is available at the District's website, <http://ccwd.org>. Positions within each department having SSMP responsibilities are highlighted

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### 3. ORGANIZATION

below. Descriptions of District positions and responsibilities related to the collection system are as follows:

- [Board of Directors](#). Establishes District Policy.
- [General Manager](#). Under administrative direction of the Board of Directors, oversees the operations and administrative affairs of the District, and represents the Board's policies and programs with employees, community organizations and the general public.
- [District Engineer](#). Plans, organizes, directs and reviews the activities and operations of the Engineering Department for projects related to water and wastewater, coordinates assigned activities with other departments and outside agencies, and provides administrative support to the General Manager.
- [Director of Operations](#). Plans, organizes, directs and reviews the activities and operations of the Operations Department for water and wastewater treatment, collection and distribution, and coordination of all environmental programs with the appropriate regulatory agency. Authorized to certify electronic spill reports submitted to the SWRCB.
- [Plant Operations Manager](#). Organizes, directs and coordinates the activities of the Water and Wastewater Departments within the Operations Department for the operation and maintenance of treatment facilities, recycled water distribution facilities, and the operation of the District's laboratory. Coordinates regulatory activities with other departments and provides support to the Director of Operations. Authorized to certify electronic spill reports submitted to the SWRCB.
- ~~[Construction and Maintenance Manager](#). Plans, organizes, directs, and coordinates the activities of the water distribution crews, wastewater collections, construction crew, and the Utility Crew, and meter readers within the Operations Department. Coordinates regulatory activities with other departments and provides support to the Director of Operations. Authorized to certify electronic spill reports submitted to the SWRB.~~
- [Collection System Supervisor](#). Schedules, assigns and reviews the work of field crews in a variety of skilled and semi-skilled activities in general construction, repair, and maintenance of wastewater collection system facilities, and has primary responsibility for the operation of equipment. Responds to customer problems and complaints, SCADA and auto dialer alarms, and is authorized to certify electronic spill reports submitted to the SWRCB.
- [Collection System Worker](#). Routinely monitors, maintains, adjusts, and cleans pumps, regulators, and lift stations to prevent spills, and ensure the smooth operation of the wastewater collection and

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### 3. ORGANIZATION

storage systems, and recycled water distribution. Responds to customer problems and complaints, SCADA and auto dialer alarms, and is authorized to certify electronic spill reports submitted to the SWRCB.

- [Control, Communications, and Electrician Supervisor](#). Directs staff to ensure the maintenance, repair, inspection, modification, design, installation, and calibration of electrical systems, equipment, instrumentation and control systems. These electrical systems include all computerized controls, SCADA, and programmable logic controllers for District facilities. Plans system improvements, prepares budgets, and monitors expenditures for activities of electrical and communication/controls. Oversees, directs, and evaluates the work of the Electricians.
- [Electrician](#). Maintains, repairs, inspects, installs, and calibrates instrumentation and control systems, including computerized controls, SCADA, variable frequency drives, solid-state starters, programmable logic controllers, process control systems, and other microprocessor-based electronic and electrical equipment for water and wastewater treatment. Maintains and repairs laboratory and chlorination equipment. Assists other employees in the operation and maintenance of instrumentation and control systems.
- [Mechanic](#). Mechanics are skilled journey-level class workers who perform preventive and corrective maintenance and repair for medium to heavy equipment in a variety of craft areas, including water and wastewater treatment plant equipment, and water and wastewater pump and lift stations. In addition, mechanics perform a wide variety of work to ensure District facilities and premises are maintained in a safe and effective working condition. This class is distinguished from other maintenance classes by the necessary specialized knowledge of and skill in installing, maintaining and repairing a variety of stationary equipment, rolling stock, and water system control devices. The Mechanic Supervisor manages the Mechanics, assigns work, and provides technical assistance to the Mechanics.

#### 3.3. SSO Reporting Chain of Communication

A flowchart depicting the process of responding to an SSO from the receipt of a complaint to reporting an SSO to the SWRCB is shown on **Figure 3-2**. The SSO reporting process is described in detail in the Overflow Emergency Response Plan, **Appendix B**, and summarized in Section 7.

#### 3.4 2021 Audit Results

As part of the 2021 Audit, it was discovered that with the implementation of Mobile

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### 3. ORGANIZATION

MMS, the District has improved ~~the~~ procedure to guide customer service staff through receiving and responding to customer complaints . Customer Service staff now have the ability to open service requests within Mobile MMS and field crews receive ~~instant~~ notification of the request. Mobile MMS ~~ensures~~ adequate information is being recorded and used for the greatest District benefit. ~~With the upcoming~~ introduction of Tyler Customer Service Software, customer service representatives ~~can will be able~~ obtain up-to-date customer contact information. .

3. ORGANIZATION

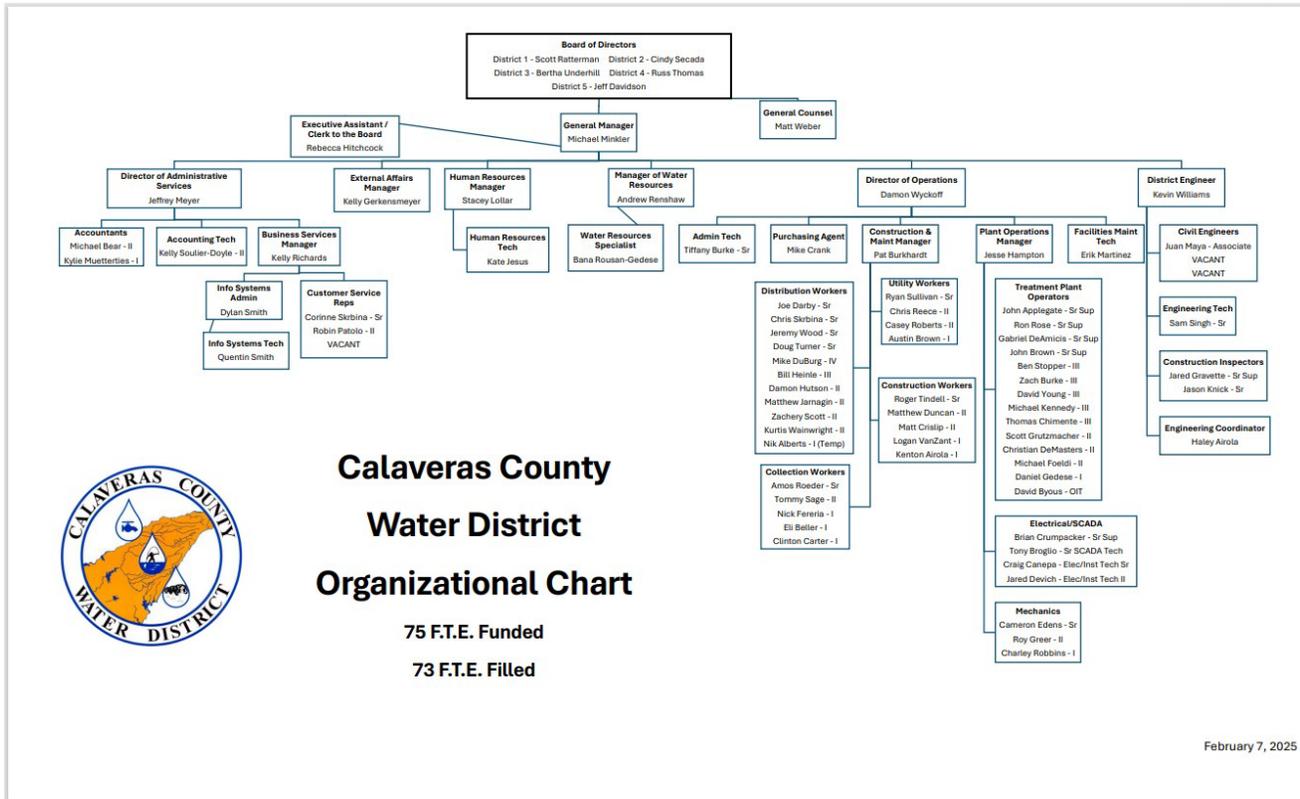


Figure 3-1: Calaveras County Water District Organization Chart

### 3. ORGANIZATION

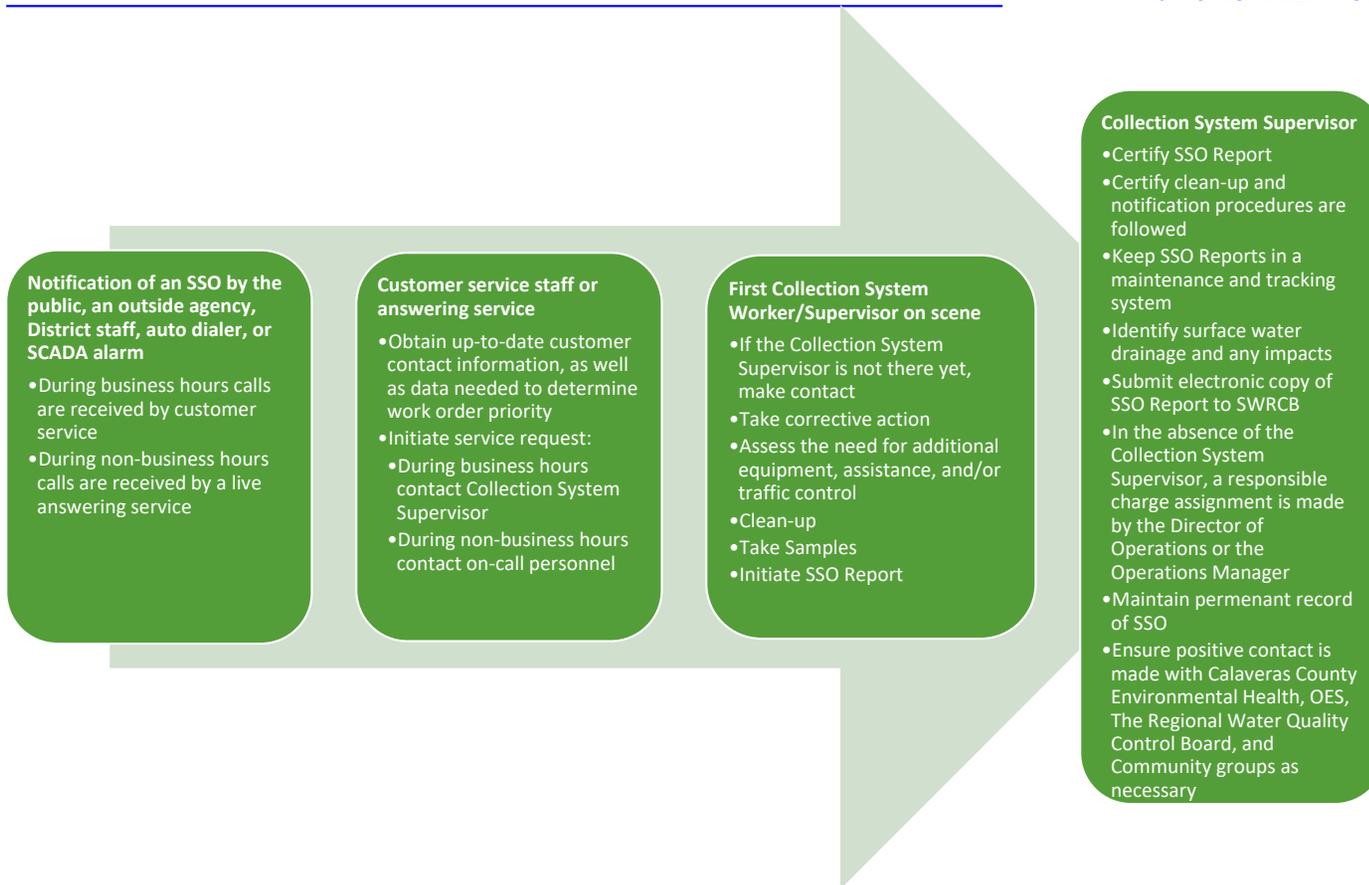


Figure 3-2. SSO Reporting Chain of Communication

4. LEGAL AUTHORITY

SSS WDR Requirement: *Each enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:*

- A. *Prevent illicit discharges into its sanitary sewer system, including Inflow/Infiltration from satellite wastewater collection systems and laterals, storm water, unauthorized debris, etc.*
- B. *Require proper design and construction of sewers and connections.*
- C. *Ensure access for maintenance, inspection and repairs to publicly owned portions of laterals.*
- D. *Limit the discharge of fats, oils, and grease (FOG) and other debris that may cause blockages.*
- E. *Enforce any violation of its sewer ordinances.*

This component of the SSMP discusses the District's legal authority, including federal and state law as well as District Ordinances and District Rules and Regulations. The District derives its legal authority from, and is regulated by, federal and state law and their administrative agencies. In exercising the authority granted there under, the District has adopted Ordinances and Rules and Regulations setting forth the terms and conditions of service.

4.1. Federal and State Law

Federal and State Laws include but are not limited to:

- California Irrigation District Law (Water Code § 20500 et seq.) (Grant of authority to perform "all acts necessary" in its operation and control of its sewer disposal system).
- Federal Water Pollution Control Act, commonly known as the Clean Water Act (33U.S.C. § 1251 et seq.).
- California Porter Cologne Water Quality Act (California Water Code § 13000 et seq.).
- California Health & Safety Code § 25100 et seq.
- Resource Conservation and Recovery Act of 1976 (42 U.S.C. § 6901 et seq.).
- California Government Code §§ 54739, 54740 (grant of authority to regulate and/or prohibit the discharge of industrial waste into the District's collection system and treatment works).

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## 4. LEGAL AUTHORITY

- [Statewide General Order WQ 2022-0103 DWQ For Sanitary Sewer Systems](#)

### 4.2. Calaveras County Water District Ordinances and Rules and Regulations

Calaveras County Water District (District) was formed on August 30, 1946 as an independent special district (*Certificate of Incorporation of the Calaveras County Water District, September 6, 1946*). The District was formed to acquire water rights, construct water works and distribute and sell water. The first District board was elected on November 5, 1946.

The District's first sewer improvement district, Improvement District No. 8S, was created in 1970 (*Resolution No. 1269, October 7, 1970 and Resolution No 1278, November 4, 1970*) and the District further expanded its responsibilities to include the planning, collection, and treatment of wastewater for the entire County for communities not served by another agency (*Resolution No. 1392, March 1, 1972*). The geographical area served by the District for all current sewer services is approved by the Calaveras County Local Agency Formation Commission (LAFCO, **Appendix C**).

Sanitary sewer services are administered by the following Ordinances and Rules and Regulations.

- Ordinance No. 84-1: Calaveras County Water District Wastewater District Regulation Ordinance Regulating the Use, Installation and Maintenance, and Regulating Sewering of Wastewater Districts as Established by Calaveras County Water District (ORD84-1), provided as **Appendix D**.
- Calaveras County Water District Rules and Regulations Governing the Furnishing of Water and/or Wastewater Services (WWS-RR), provided as **Appendix E**.

The District possesses the necessary legal authority to meet its obligations under Section D, 13 (iii) (Legal Authority) of **SSS WDR**.

#### 4.2.1. Prevention of Illicit Discharges

Illicit discharges into the District's sanitary sewer system are strictly prohibited under *ORD84-1 Article VII. – Use of Public Sewers* in compliance with 40 CFR 35.2130.

#### 4.2.2. Proper Design and Construction of Sewers and Connections

Sewers and connections must be properly designed and constructed in accordance with the current version of *Calaveras County Water District Sewer and Recycled Water Design & Construction Standards, ORD84-1*

## 4. LEGAL AUTHORITY

*Article V – Building Sewers, Lateral Sewers, and Connections, ORD84-1 Article VI - Public Sewer Connection, and WWS-RR Section 17 - Maintenance and Testing of Sanitary Sewer Facilities.*

### 4.2.3. Lateral Maintenance Access

Access to sewer laterals owned or maintained by the District is ensured with land deed easements, public right-of-way, *ORD84-1 Article II, Section 14 District Right of Ingress and Egress, ORD84-1 Article II, Section 17.1 - Maintenance and Testing of Private Sanitary Sewer Facilities, ORD84-1 Article II, Section 17.3 - Testing Procedures for Existing Sanitary Sewer Facilities.*

### 4.2.4. Limit Discharge of FOG and Other Debris

The discharge of fats, oils, grease and other debris into the system that may cause blockages is limited under *ORD84-1 Article VII - Use of Public Sewers, ORD84-1 Article VII. – Section 7.3 Interceptors Required, and ORD84-1 Article VII – Section 7.4 Maintenance of Interceptors (Traps).*

Beginning 2025, CCWD will work to update its wastewater code. In anticipation of that effort, the District intends to add a comprehensive Fats, Oils, and Grease (FOG) Program and associated Ordinance to this document.

### 4.2.5. Enforcement Measures

The District is empowered to enforce any violation of its sewer requirements and seek legal redress under *ORD84-1 Article IX - Enforcement, ORD84-1 Article IX, Section 9.1 – Investigation Powers, ORD84-1 Article IX, Section 9.2 – Violation, ORD84-1 Article IX, Section 9.8 – Liability and Penalties for Violations, WWS-RR Article VII - Penalties, and WWS-RR Article VII, Section 61 Offenses Subject to Court Action.*

## 4.3 2021 Audit Results

~~The District continues to review and update its Ordinances and Rules and Regulations to be consistent with WDRs and State requirements.~~

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### 4.3.1 2025 Update Results

~~The District reviewed the SSMP in detail analyzing its Collections Systems work efforts from all facets of the Utility. Rules, regulations, and contact information has been updated. Operation and Maintenance procedures were updated to reflect changes in the~~

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#### 4. LEGAL AUTHORITY

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work effort over time as well as to incorporate the use of new procedures, techniques, tools, and equipment. Finally, the District developed a F.O.G. program based on an ordinance.

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## 5. OPERATIONS AND MAINTENANCE PROGRAM

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### 5. OPERATIONS AND MAINTENANCE PROGRAM

**SSS WDR Requirements:** *The SSMP must include those elements listed below that are appropriate and applicable to the Enrollee's system:*

- A. *Each wastewater collection system agency shall maintain up-to-date maps of its wastewater collection system facilities, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves.*
- B. *Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventive Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders.*
- C. *Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and system for ranking the conditions of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short-term and long-term plans plus a schedule for developing the funds needed for the capital improvement plan.*
- D. *Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained.*
- E. *Provide equipment and replacement part inventories, including identification of critical replacement parts.*

This section of the SSMP discusses the District's sewer system operation and maintenance.

#### 5.1. District Collection System Maps

District collection system maps are divided into four geographic areas: Ebbetts Pass, La Contenta, West Point and Copper Cove. Each area is then subdivided by an alphanumeric indexing system. Ebbetts Pass extends from Six Mile Village, east of Angels Camp, to the eastern edge of Arnold and White Pines, along California State Highway 4. La Contenta is the area of Valley Springs extending

## 5. OPERATIONS AND MAINTENANCE PROGRAM

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south along State Highway 26 from the intersection of Highway 12 and Highway 26. West Point is generally along Highway 26, in and about the town of West Point. Copper Cove is to the East, North and West of Lake Tulloch, several miles south of Highway 4 and the town of Copperopolis.

All maps are available to field staff- in Mobile MMS, paper format, as well as searchable Adobe Acrobat® public document format (PDF) documents. The PDF maps, introduced in 2008, are used extensively by field staff and can be accessed in the field through the District's tablet computer books. They reflect either or both water and wastewater systems, in color, ~~and are a decided improvement from the previous single-system paper maps.~~ Collection system maps show gravity and pressure pipes, clean outs, manholes, tanks (pressure and septic), pumping facilities, valves, lots, APNs, addresses, and road names. Ancillary systems owned by the District including recycled water and electrical systems are also shown. An example of a collection system map from the Arnold Service Area, east of Highway 4, is shown in **Figure 5-1**.

District Engineering Department staff maintain AutoCAD® map drawings comprising the whole of each of the four areas. These maps are geo-positioned according to NAD83, California State Planes, Zone III. Each area has an index map and PDF maps have numerous short-cut buttons to facilitate staff use. Information about the District's sewer facilities is shown directly on these maps with pages devoted to detailed insets of various locations such as lift stations and treatment plants. Additional information may be found by cross referencing APN's with District as-built drawings.

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Map pages affected by new construction, facility upgrades, or replacement projects are updated using field corrected maps and/or as-built project drawings. Corrections identified by field staff are transmitted to Engineering and corrected promptly. Because of the electronic nature of CCWD mapping, updates both major and minor, are relatively simple to accomplish, and field staff have shown a preference for computerized mapping.

## 5. OPERATIONS AND MAINTENANCE PROGRAM

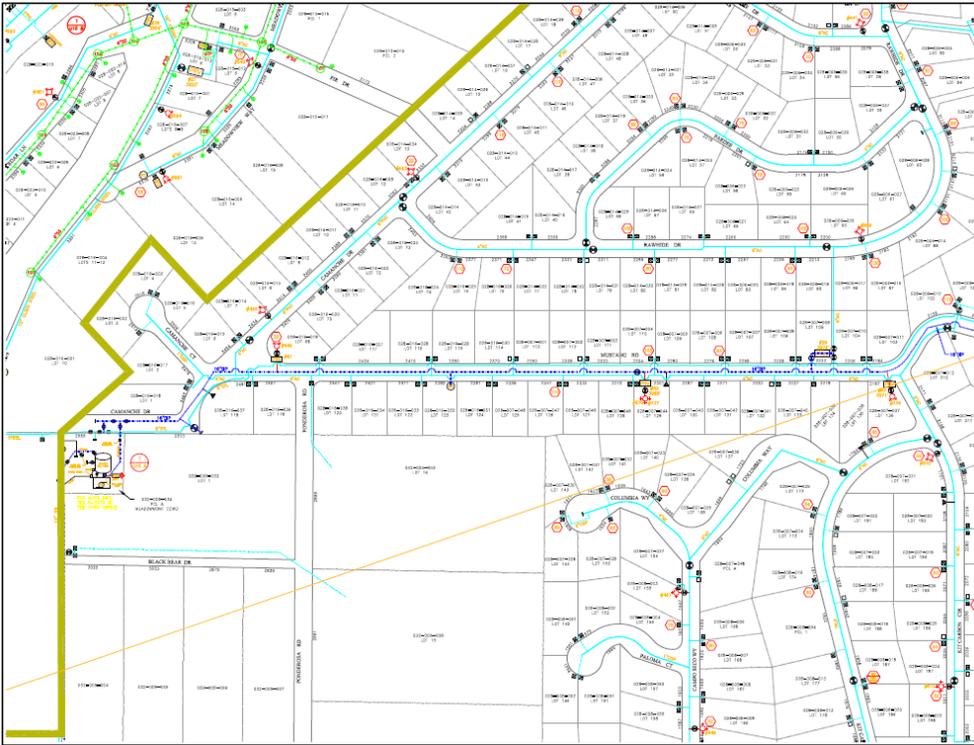


Figure 5-1: Example of District Maintained Collection System Maps

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## 5. OPERATIONS AND MAINTENANCE PROGRAM

### 5.2. Preventive Maintenance Program

The District's preventative maintenance (PM) program includes cyclical as well as focused maintenance, and cleaning and inspection of the sanitary sewer system. The process of scheduling, documenting and recording these activities is facilitated using a computerized Work Order system as described below.

- Issue scheduled PM work order as specified by maintenance personnel.
- Issue work order for service requests or repair orders including SSO received from customer service.
- Issue Work Orders as items crop up to other departments (mechanical, electrical etc.)
- Differentiate work order priority for specified areas of the system.

Work orders are "closed" by maintenance staff as work is completed. Typically, the following information is added to the database each time an order is closed.

- Description of work
- Parts used
- Observations on the equipment
- Adjustments to the maintenance schedule
- Equipment identification number(s)
- Initiating party
- Employee or Field Crew assignment
- Any additional information the maintenance staff believes would be advantageous for future reference
- Maintenance and repair history of any asset
- Closed Circuit Television (CCTV) areas for history or troubleshooting
- Smoke Testing
- Root Control
- Cyclical or Focused cleaning areas and maps
- Spill reports
- Blockages

### 5.3. Preventative Maintenance Schedule

During routine preventative maintenance, staff conduct inspections to gather information, evaluate potential immediate and/or future impacts and adjust Work Order priority and scheduling. PM work schedule may be adjusted as follows:

- Remain on current PM schedule.
- Treat for roots or FOG.
- Place on prioritized PM.
- Removed from prioritized PM.
- Repair.

#### 5.3.1. Lift Station Cleaning and Inspection

Collection system staff perform routine inspections using a station checklist. Checklists are designed to confirm that the station is in normal operating condition and include such items as housekeeping, fluid levels, pump totalizer readings, wet well levels, and instrumentation and generator operations. Maintenance performed, station statistics and observations are recorded in log books kept at the station. Station PM occurs as follows:

- Lift station inspection one to four times per month.
- Wet well cleaning one to four times per year.
- Electrical inspection as necessary but no less than one time per year.
- Mechanical inspection including pumps as necessary but no less than one time per year.
- Priority alarms simulated one to four times per year.
- Generators operated under load one to four times per month.
- Adjust lift station generator exercise clocks to ensure the generator exercises during normal business hours to ensure effective inspection during exercise.

Lift stations are inspected and cleaned based on the needs of the individual lift station. High usage lift stations, older lift stations, and lift stations with heavy FOG accumulation are inspected and cleaned more frequently.

#### 5.3.2. Sewer Cleaning and Inspection

Sewer cleaning and inspection occurs as part of PM. The District performs

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## 5. OPERATIONS AND MAINTENANCE PROGRAM

cyclic cleaning and inspection based on the branching structure of the collections system. Starting from the ends of the sub-areas and working toward the wastewater treatment plant, each sub area of the system is cleaned and inspected on a rotating basis. The District takes a proactive approach on non-problem areas through establishing a goal to clean and inspect all gravity lines on a rotating eight (8) year schedule.

As cleaning is completed and condition assessments made, potential trouble areas are documented and prioritized for increased cleaning or remedial action as required. Focused cleaning may include root control or hydro-jetting of the line.

### 5.3.3. Fats, Oils, and Grease Control

The District has a proactive approach to PM that minimizes FOG trouble spots. Mitigation of FOG impacts to the sewer system are discussed in Section 8, FOG Control Program.

### 5.3.4. Quality Control Inspections

The District uses standard operating procedures for proper cleaning, root control, flushing methods and equipment usage. CCTVs are done regularly as part of the preventative maintenance schedule.

### 5.3.5. Service Requests and ~~Work~~Repair Orders

Service requests are initiated by customer service staff. Once the collections system staff receives the service request, they investigate the request and generate a prioritized task order. Service requests are prioritized by the nature of the request and initiate any of the following actions: placement on priority schedule, CCTV of the line, referral for further evaluation, or referral directly to the District engineering department for rehabilitation or replacement.

Work Orders are created from within the operations department for Collections System related work. This can be for routine or emergency work. Work Orders can be created from within the collections department for support crew (electrical, Mechanical), or can be created to document unanticipated work completed by the Collections Crew.

### 5.3.6. Flow Monitoring

Lift stations are designed and constructed with effluent flow meters. However, older stations, built prior to 1990, and stations acquired from other owners generally do not have flow meters. Flow is also measured at all wastewater treatment plants. When flow is available, it is used to evaluate I/I and collection system capacity. District Staff refer to its Collections

## 5. OPERATIONS AND MAINTENANCE PROGRAM

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System Lift Station Reference Manual as necessary to determine flow characteristics for Lift Stations.–

### 5.3.7. Computer Monitoring

Lift stations are monitored by a Supervisory Control and Data Acquisition (SCADA) system protocol using Aveva Wonderware® and Ignition at the majority of District sites. However, at some locations, high speed data communication is not available. At locations where no SCADA supervision is possible, an auto dialer system is used to indicate alarm conditions.

The District ~~expanded itsis in the process of updating and expanding the SCADA system~~ sowith the intent that staff ~~canwill be able to~~ monitor and respond to issues remotely through ~~a~~ portable devices and protected networks, i.e. VPN, smartphone, tablet.

### 5.4. Rehabilitation and Replacement Program

The District has a Capital Improvement Program, and Capital Improvement Plan (CIP) which is updated annually, ~~as well as a Rehabilitation and Replacement (R&R) Program.~~ The CIP ~~and R&R Program~~ is ~~are~~ used to identify and prioritize system deficiencies and implement appropriate short- and long-term actions to address each deficiency. Timing of construction of new ~~and R&R~~ facilities is based on priority, deficiency, and input from ~~the~~ operations staff. Risk assessment, financing, and staffing are also considered in the long-term management of District facilities.

The CIP is funded primarily through wastewater rates, wastewater facility connection charges and municipal bonds. The composition of the finance package for each project is based upon the percentage of new and existing customers that will be served by the new or upgraded facility. ~~R&R projects are funded by a restricted account earmarked for R&R. R&R funding comes from bi monthly customer service charges and are not subject to reallocation or other use.~~

#### 5.4.1. Identification of System Deficiencies

1. Review of CCTV surveys. Historic CCTV Surveys are routinely uploaded into the District Mobile Maintenance System (MMS). Once incorporated, the inspections exist on the Collections System layer of the MMS GIS-based map system. When deficiencies are corrected, the MMS layer is updated.
2. During the process of cleaning a mainline, mainlines and manholes are inspected for structural integrity, roots, and/or I/I problems. This work is documented in MMS
- ~~2-3.~~ CCTV inspections are completed routinely and their subsequent reports are incorporated in MMS.

## 5. OPERATIONS AND MAINTENANCE PROGRAM

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- ~~3.4.~~ The District's lift stations are continually monitored during routine inspections by Collections System lift station operators. ~~Discovered defects~~ Defects discovered are reported to supervisors and/or directly to the ~~District~~ applicable District repair Crew (i.e. mechanics, electricians),<sup>s</sup> electricians and mechanics.
- ~~4.5.~~ In Fiscal Year 2021 the District incorporated a \$150,000 Recurring line item in the CIP for Collections System Improvements. ~~the fiscal year 2018-2019 the District purchased manhole bypass piping equipment for cleaning and recoating manholes. The goal for these funds to repair deficiencies identified through routine Collections System work efforts.~~

### 5.4.2. Implementation of Short- and Long-Term Rehabilitation Actions

**Short Term.** Facilities that are a priority are investigated immediately and an action plan for rehabilitation or replacement is developed. Pipelines that are at risk of failure are repaired as soon as possible. Temporary repairs or repairs that are limited in scope are undertaken immediately by District staff.

**Long Term.** Facilities that are not in danger of immediate failure but need rehabilitation or are near the design life expectancy, are either repaired by District crews or are placed on the Capital Improvement Plan (CIP). Facilities that are larger in scope, requiring engineering design, analysis or planning, are also placed on the CIP.

Both actions can be initiated through a \$150,000 recurring line item for Collections System improvements.

## 5.5. Training

The District provides extensive training for all sewer maintenance staff. Wastewater collections staff are ~~required~~ encouraged to become and remain California Water Environment Association (CWEA) certified in maintenance and operation of wastewater collection systems. The District assists with this certification by paying for the preparation course, take home study material, certification exams, and required continuing education to maintain certification. Participation and involvement with other industry organizations such as American Society of Civil Engineers (ASCE), Water Environment Federation (WEF), Central Valley Clean Water Association (CVCWA), and California Association of Sanitation Agencies (CASA) is also encouraged by the District.

Numerous outside vendor-sponsored training courses, in-house trainings lead by experienced staff, and extensive cross training programs are employed to keep operators current with updated maintenance and operation practices. The following training is provided on a yearly or biennial timeframe.

## 5. OPERATIONS AND MAINTENANCE PROGRAM

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- First-aid
- CPR
- ~~\_\_\_\_\_~~ Confined Space Entry
- Fall Protection
- Trench Safety
- Stand-by Generator Operations
- Traffic Control
- ~~\_\_\_\_\_~~ Training on the use of all collection system maintenance equipment.
- Asbestos/Silica training
- On Call/Stand by

### 5.6. Contingency Equipment and Replacement Inventories

The District maintains an extensive inventory of critical replacement parts and owns necessary construction equipment to conduct repairs. Additionally, nearly all of the Districts lift stations have stationary emergency power generators, with the goal to also provide emergency storage at all sites.

#### 5.6.1. Contingency Equipment

The District has numerous pieces of portable equipment available in the event of an emergency: pumps, generators, heavy equipment and traffic safety equipment. The District owns and operates a variety of equipment to keep the collection system in working order. At this time, the District's fleet includes the following:

- Four (4) nine yard Vac-Con® trucks; used to clean lift stations and pipelines.
- One (1) 3,400 gallon pumper truck.
- One (1) 2,250 gallon pumper truck.
- ~~One (1)~~ Two (2) trailer mounted high pressure jetting rodders
- Three (3) ~~Bobcats®~~ Skid Steers.
- One (1) CCTV truck; used to inspect inside gravity and service lines.
- ~~Two~~ Four (24) portable TV push inspection cameras.
- Five (~~55~~) backhoes; earth moving equipment.
- ~~Seven~~ Five (75) dump trucks.

## 5. OPERATIONS AND MAINTENANCE PROGRAM

- Three (3) mini excavators.
- ~~Six~~Five (5) portable power generators.

Training on the use of all collection system maintenance equipment is provided to collection staff and supervisors.

~~In compliance with In-Use Off Road Diesel Vehicle Regulations mandated by California Air Quality Resources Board (CARB), the District is in the process, prior to January 1, 2023, of replacing on-road heavy-duty diesel vehicles with engines older than 2010.~~

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### 5.6.2. Replacement Parts Inventory

~~A robust inventory of replacement parts is maintained by the District's Department. The Collections Department keeps pipe and fitting inventory in a variety of materials and sizes ranging from 2-inch to 10-inches in diameter. Parts that are needed routinely for preventative maintenance are kept on hand or can be easily attained from local vendors. The District's Purchasing Agent works closely with the Senior Collections Crew Supervisor and the Construction & Maintenance Manager to ensure an effective inventory is on-hand to address both routine and emergency issues as they crop up. CCWD's Central Warehouse feeds all crews and satellite warehouses with material and equipment as necessary. Procedures are in place for unplanned or emergency parts purchases. Parts are also available during emergencies from the District's wastewater treatment facilities or at other District departments.~~

### 5.7. ~~2021 Audit Results~~ CCWDs Next SSMP Audit is slated for July of 2023.

~~The 2019 SSMP audit identified 4 major aspects of the SSMP that needed to be updated. As part of the 2021 audit, CCWD staff reviewed the 2019 results. The following illustrates the status of each aspect.~~

#### 5.7.1. ~~District Collection System Maps~~

~~Operations staff need up-to-date collection system maps to efficiently operate and maintain the sewer system. The District is in the process of converting collection system maps from an AutoCAD®-based format to a geographic information system (GIS)-based format and has implemented a formal computerized maintenance management system (CMMS). Implementation of a GIS-based CMMS has given field staff access to more data in the field, a platform to document and store field data, and has made it easier to identify discrepancies between collection system maps and field conditions.~~

~~The District's goal is one database for all uses: planning (system and~~

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## 5. OPERATIONS AND MAINTENANCE PROGRAM

budgeting), mapping, maintenance and reporting. A collection of data entered into and evaluated using CMMS provides information on the state of the collection system, how well O&M activities are working, and changes or improvements that should be made.

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### 5.7.2 Preventative Maintenance Schedule

The process of prioritizing PM is somewhat informal and hard to effectively implement. When pipelines are CCTV'd, there is no indexing or rating system, and data is difficult to access and analyze. As part of the 2019 Audit, the District has established a goal to index CCTV videos and enumerate the data in a way that helps objectively prioritize PM scheduling. Additionally, the scheduled goal to clean and CCTV the entire system was reduced from a 5-year rotating schedule to an 8-year rotating schedule. The Operations Department may contract with a third party contractor to meet scheduled goals for sewer cleaning and inspection.

Without an effective PM scheduling mechanism, scheduling and meeting scheduled PM deadlines has been challenging to the District. As part of the 2019 SSMP Update, the schedule has been adjusted to reflect a prioritized structure, with some lift stations being inspected more frequently than others. A formal procedure, in addition to enumerating CCTV video data, should be in place and used to adjust the PM schedule based on objective data. The District is considering cleaning and inspecting representative samples of the system to determine priority of the whole.

Additionally, there is no formal process for inspecting manholes. As part of the 2019 SSMP Audit, the District's goal is to introduce a formal process for inspecting manholes. One complication the District has found with accomplishing this goal is that several manholes are located on backyard sewer mains located within public utility easements on private property. Many of these backyard sewer mains and manholes have little or no access, and in some cases property owners are not aware of their existence.

Not having access to sewer mains and manholes is problematic for several reasons. Besides not being able to perform routine maintenance, if there were an SSO, the District may not be able to initiate the Overflow Emergency Response Plan (discussed in Section 7). District staff recently wrote a letter to property owners with backyard sewer mains to bring attention to this matter. Next, the District will identify critical assets that must be accessible and write a second letter to property owners to establish access. This work effort is a continuing process.

As mentioned in Section 5.7.1, the District's current maintenance and

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## 5. OPERATIONS AND MAINTENANCE PROGRAM

~~management system lacks the ability to store, access and analyze data. Implementation of a CMMS would be helpful in determining and implementing a PM schedule. A CMMS would also provide a centralized location for maintaining and accessing inspection log books (currently stored at each individual lift station), CCTV records, easements, etc.~~

~~The items in section 5.7.2 have been addressed with the implementation of CMMS. The District currently has records, preventive maintenance information, and inspection schedules pertaining to line cleaning, lift stations and other Collections system infrastructure. There is a continuous work effort to improve in all of these areas.~~

### ~~5.7.3 Flow Monitoring~~

~~The District is working toward reducing I/I. In the fiscal year 2018-2019 the District purchased smoke testing equipment to locate areas of high I/I and continues to conduct testing throughout the systems. Additionally, the District is evaluating enhancing the functionality of the existing SCADA system with the purchase and use of AVEVA Wonderware Historian@ software. This will allow additional functionality for Engineering to evaluate operations and issues.~~

### ~~5.7.4 Contingency Equipment and Replacement Inventories~~

~~An accurate record of inventory is essential to maintaining necessary parts in stock. Since the 2019 SSMP Update, the District worked to develop and implement an inventory management program within CMMS to ensure critical replacement parts are available during emergencies and can be easily located.~~

~~To facilitate this effort the District has secured a parts warehouse to control inventory. CCWD also secured property and material to construct a maintenance shop and material warehouse. The District hired a Purchasing Agent to oversee and maintain the day to day operations, inventory, and ordering of parts for this warehouse.~~

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**6. DESIGN AND PERFORMANCE PROVISIONS**

*SSS WDR Requirements:*

- A. *The SSMP must identify design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems.*
- B. *The SSMP must identify the procedures and standards for inspecting and testing the installation of new sewers, pumps and other appurtenances and for rehabilitation and repair projects.*

This section of the SSMP discusses the District's Design and Construction Standards as well as procedures and standards for inspecting new and repaired facilities.

**6.1. Design and Construction Standards and Specifications**

The District requires all new sanitary sewer systems, pump stations and other appurtenances, as well as the rehabilitation and repair of existing sewer facilities, to be designed and constructed in accordance with the current version of the [\*Calaveras County Water District Water, Design and Construction Standards\*](#).

**6.2. Inspection and Testing Procedures**

Within the Sewer System Testing Section (02661) of the Technical Specifications are procedures and standards for inspecting and testing the installation of new or rehabilitated sewers, pumps and other appurtenances.

**6.3. 2021 Audit Results**

The Districts Design and Construction Standards are currently in the process of being reviewed and updated. Periodic review and update of the Design and Construction Standards should be performed every 2 to 5 years to ensure the most current construction methods and acceptable materials. Additionally, the Design and Construction Standards update will include an approved materials list, along with septic tank and lift station design standards.

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## 7. OVERFLOW EMERGENCY RESPONSE PLAN

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### 7. OVERFLOW EMERGENCY RESPONSE PLAN

SSS WDR Requirements: Each Enrollee shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

- A. Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner.
- B. A program to ensure an appropriate response to all overflows.
- C. Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g., health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach waters of the State in accordance with the MRP. All SSOs shall be reported in accordance with the MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification.
- D. Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained.
- E. Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities.
- F. A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

Requirements of the Amended Monitoring and Reporting Program:

- G. Definitions for Category 1, Category 2, Category 3, and Category 4 Private Lateral Sewage Discharge (PLSD).
- H. Within two hours of becoming aware of any Category 1 SSO greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, notify the California Office of Emergency Services (Cal OES) and obtain a notification control number.

## 7. OVERFLOW EMERGENCY RESPONSE PLAN

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This section of the SSMP provides an overview and summary of the District's emergency

*I. Reporting:*

*Category 1 SSO: Submit draft report within three business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date.*

*Category 2 SSO: Submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date.*

*Category 3 SSO: Submit certified report within 30 calendar days of the end of month in which SSO the occurred.*

*Category 4 SSO: Submit the estimated total spill volume and the total number of Category 4 spills into the online CIWQS database within 30 days after the end of the calendar month in which the spills occurred.*

*SSO Technical Report: Submit within 45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters.*

*"No Spill" Certification: Certify that no SSOs occurred within 30 calendar days of the end of the month or, if reporting quarterly, the quarter in which no SSOs occurred.*

*Collection System Questionnaire: Update and certify every 12 months.*

*J. Conduct water quality sampling within 48 hours after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters. These records must be kept of file.*

*K. All SSO event records must be maintained, including any telemetry records if relied upon to document and/or estimate SSO volume. A report must be uploaded and certified for all Category 4 spills to the online CIWQS database after the end of the calendar year in which the spills occur.*

response documents and procedures for sewer overflows.

### 7.1. Overflow Emergency Response Plan (OERP)

The District's overflow emergency response procedure is detailed in a stand-alone document, the Overflow Emergency Response Plan (OERP), included as **Appendix B**. The OERP describes the responsibilities and procedures for field

## 7. OVERFLOW EMERGENCY RESPONSE PLAN

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crew to follow when responding to an SSO, from notification of an SSO through corrective actions, sampling, and reporting to the appropriate government agencies. The OERP also contains appendices with detailed sample collection and testing procedures, a list of emergency contacts, a list of approved contract services, and sample spill report and chain of custody forms.

### 7.1.1. Objectives

The main objectives of the OERP are to protect human health and the environment, satisfy regulatory agency requirements, and minimize risk of enforcement actions against the District. Additional objectives include providing appropriate customer service, and protecting the collection system and facilities, and private and public property.

### 7.1.2. Legal Requirements and Scope

The OERP discusses the **SSS WDR** and the responsibilities of the District.

## 7.2. Spill Response Procedures

The OERP details response procedures from first responders to follow-up measures and final reporting. Sections within the OERP include the following.

### 7.2.1. First Response

Notification of an SSO may be initiated from a variety of sources including the public, an outside agency, District staff, SCADA alarm, or auto dialer. Calls are received by customer service staff during business hours or a live answering service at night. Field staff are available 24 hours per day and are instructed to respond immediately. The notification process and chain of communication were shown in **Figure 3-2**. The OERP provides the initial responsibilities and priorities of the responding personnel and contact numbers for Collection System Workers in each geographical area.

### 7.2.2. Follow-up Measures

This OERP addresses spill classification and notification procedures including contact information and procedures for each type of spill. Follow-up measures consist of procedures for site cleanup and disinfection, water sampling procedures, and the posting of warning signs.

### 7.2.3. Final Reporting

The OERP details responsibilities for completion of the Sewer Spill Report, procedures and responsibilities for Spill Certification, Agency Reporting,

## 7. OVERFLOW EMERGENCY RESPONSE PLAN

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and Maintenance of Spill Logs. Appendices to the OERP contain additional procedures and forms.

### **7.3. Traffic and Crowd Control**

The District contracts with professional educators to train all maintenance, collections, and inspection personnel in traffic control using a professional development program that was developed specifically for water utility employees by the Association of California Water Agencies (ACWA) and the Joint Powers Insurance Authority (JPIA).

### **7.4. Spill Prevention, Containment and Mitigation**

The OERP is available to all personnel. It is used as a resource in emergency response training. All wastewater operations and maintenance staff are trained on emergency response procedures. New employees receive this training as part of their orientation and this training is reinforced during tailgate training sessions. Construction Inspectors are also trained in emergency response procedures. The District emphasizes its goal to have no SSOs to construction contractors and contractors are required to submit and obtain approval of all flow bypasses and emergency response plans prior to the start of construction.

## 8. FATS, OILS AND GREASE (FOG) CONTROL PROGRAM

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### 8. FATS, OILS AND GREASE (FOG) CONTROL PROGRAM

**SSS WDR Requirements:** *Each Enrollee shall evaluate its service area to determine whether a FOG control program is needed. If an Enrollee determines that a FOG program is not needed the Enrollee must provide justification as to why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate.*

- A. *A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area.*
- B. *The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG.*
- C. *Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practice requirements, record keeping and reporting requirements.*
- D. *Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance.*
- E. *An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section.*
- F. *Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (E) above.*
- G. *An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG.*

SWRCB requires each enrollee to evaluate its service area to determine whether a FOG control program is needed and to develop a program if needed. The District conducted an evaluation of its service area FOG and determined that proactive preventative maintenance is effective in mitigating FOG blockages in the sewer system, and a formal FOG control program is not needed.

#### 8.1. District Evaluation of Service Area FOG

The District regulates direct and indirect contributors to the sewer system through the following actions and programs:

## 8. FATS, OILS AND GREASE (FOG) CONTROL PROGRAM

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- Preventative Maintenance
- Source Control Measures
  1. Industrial Pretreatment and Pollution Prevention Program
  2. Issuance of discharge permits to Food Service Enterprises (FSE)
  3. Enforcement of General Sewer System User Requirements

### 8.1.1 Preventative Maintenance

Cyclical and focused PM schedules consist of hydro-jet cleaning and chemical control measures to inhibit grease accumulation. Hydro-jetting is the most common method of trunk line preventive maintenance.

PM for any sewer system area is prioritized based on qualitative findings of previous PM results, such as observation of grease accumulation or grit deposits. High priority segments are placed on an accelerated PM schedule and the findings are forwarded to the District's Industrial Pretreatment and Pollution Prevention Program (IPP) for follow-up. These segments will remain on accelerated PM until subsequent observations determine that the potential for obstruction or blockage have been reduced or eliminated.

### 8.1.1 Source Control Measures

Source control is not a major issue in the District's collection system owing to primarily serving low density residential housing. The District source control measures consist of the programs detailed in the following subsections.

#### 8.1.1.1. Industrial Pretreatment and Pollution Prevention Program (IPP)

The IPP is administered by the Engineering staff. IPP staff are responsible for permitting, inspecting, monitoring, and assisting in investigations relating to FOG control. All Food Service Establishments (FSE) are considered potential FOG generators. Currently there are 53 FSEs in the service area. To control FOG at its source, the District requires all FSEs to do the following:

- Install Grease Removal Devices (GRD) for all new and existing FSEs.
- Conduct GRD scheduled maintenance a minimum of every three months for grease interceptors and weekly for grease traps.
- Maintain records and grease pick-up logs on site and

## 8. FATS, OILS AND GREASE (FOG) CONTROL PROGRAM

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available for review by District personnel.

### 8.1.1.2. Discharge Requirement

When a waste permit is issued to an FSE, District staff advise the permittee on the following.

- GRD sizing
- GRD maintenance requirements
- Best management practice requirements
- Record keeping and reporting requirements

FSEs are inspected at least four times per year. Inspection includes reviewing grease traps and grease interceptors cleaning records, FOG best management practices, and ensuring compliance with waste discharge permits.

A copy of the compliance inspection check-list is located in **Appendix F**, the Audit and Update Technical Memorandum (See Section 11). Follow-up tasks, as needed, are performed, such as increasing grease interceptor pumping frequency and requiring grease interceptor repairs.

## 8.2. Enforcement of General Sewer System User Requirements

The District possesses the legal authority to control sources of FOG through District Ordinances and Rules and Regulations as described in subsections 4.2.4 and 4.2.5.

In the event of non-compliance with District Ordinances and Rules and Regulations, the District Enforcement Response Plan (ERP) aims to deal with the noncompliance in a just, efficient and effective manner. The ERP addresses the different types of non-compliance and the nature of the violation, as well as the enforcement response tasks for each non-compliance matter. It also includes an enforcement matrix which shows the title and action allowed by District personnel. The necessary steps are as follows.

- Grease traps are inspected four times per year to identify and respond to noncompliance as quickly as possible, and to minimize impact to the District's collection system.
- If a grease trap does not pass inspection the owner is given a 30-day notice, followed by a 10-day notice (if needed) to clean or repair the grease trap.
- Thirty (30) days after the initial notice, if the grease trap is not

## 8. FATS, OILS AND GREASE (FOG) CONTROL PROGRAM

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cleaned or repaired, the District will clean or repair the grease trap and bill the owner.

### 8.3. Public Education and Outreach Program

Educational information related to the acceptable disposal of FOG is provided on the District's website as well as periodically throughout the year via email and handbills.~~In 2017 the District increased public outreach and education regarding the disposal of FOG through a dedicated webpage: <https://ccwd.org/dont-put-fats-oils-grease-drain/>.~~ During the holiday season the District communicates this information in the form of a press release, as well as including the web address in the special message section of service bills. The District continues to update and improve public outreach and education about FOG disposal.

## 9. SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

### 9. SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

SSS WDR Requirements: *The Enrollee shall prepare and implement a capital improvement plan that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:*

- a. *Evaluation: Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events.*
- b. *Design Criteria: Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria.*
- c. *Capacity Enhancement Measures: The steps needed to establish a short-term and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.*
- d. *Schedule: The Enrollee shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a) – (c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements as described in Section D.14.*

The District ~~has~~ prepared and implements a 5-year Capital Improvement Plan (CIP) which includes wastewater facilities that have been identified to be deficient or need to be expanded for additional capacity. The CIP is updated and budgeted for on a yearly basis to adjust priorities and respond to new concerns such as when a SSMP is reviewed, or a Master Plan is completed.

The information for the 5-year CIP is taken from the wastewater Master Plans for each service area which are: West Point, Arnold, Vallecito, Copper Cove, Forest Meadows, and La Contenta. These Master Plans contain evaluations, design criteria, and capacity enhancement measures for the build-out of each area and are updated approximately every ten years. Master Plans for Copper Cove ~~was updated in 2018~~ and ~~the~~ La Contenta ~~Master Plan update is currently in process with completion anticipate in the fall of 2025. were updated in 2018~~ Forest Meadows was updated in 2004, and Arnold, West

## 9. SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

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Point, and Vallecito were updated in 2005. Each sanitary sewer collection system was evaluated using District design criteria and treatment plant flow records to compare existing and future peak flows under dry and wet weather conditions. ~~Some collection systems were hydraulically modeled using InfoSewer® software developed and distributed by Innovyze® located in Monrovia, California. The model, together with field personnel observations, identifies those portions of the system that are experiencing overflows or other capacity issues.~~ The District has also implemented a Collections tab to the Mobile Maintenance Management System (MMS). This allows staff to set reoccurring work orders pertaining to monthly lift station inspections, routine lift station cleaning schedules as well as septic tank inspections and pumping. Utilizing the MMS system for these work efforts allows for the creation of heat maps within the Collections systems dashboard which assists in pinpointing troubled areas which allows the District to prioritize infrastructure rehabilitation/replacement projects.

### 9.1. ~~2021 Audit Results~~

~~Capacity analysis enhancement efforts continue to be somewhat limited. The computerized hydraulic model is not available for all parts of the system, which limits the extent of capacity analysis performed, and indicates developers may be connecting to the existing system with minimal capacity analysis. As the District transitions into a GIS-based system map, all three software systems: ArcGIS, AutoCAD and InfoSewer® will be integrated into a single geospatial system. A long term future goal is for the District to have a hydraulic sewer model of each of the District's service areas, which would dramatically improve the understanding of system capacity. The District is considering requiring developers to participate in the cost of said capacity analyses. Currently CCWD is working to update its GIS layer in Mobile MMS with applicable system information such as line size, age, depth, etc. as a step toward improving its capacity understanding.~~

## 10. MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

### 10. MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

SSS WDR Requirements: *The Enrollee shall:*

- A. *Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities.*
- B. *Monitor the implementation and, where appropriate, measure the effectiveness of each component of the SSMP.*
- C. *Assess the success of the preventive maintenance program.*
- D. *Identify and illustrate SSO trends, including: frequency, location and volume.*
- E. *Update program components, as appropriate, based on monitoring or performance evaluations.*

This section of the SSMP discusses parameters of how the District monitors the success of the SSMP and how the District plans to keep the SSMP current.

#### 10.1. Records Maintenance

The District collects system information including all maintenance activities, SSO data, service and repair history, root control, pipe cleaning, and customer complaints. The data is collected and can be accessed at the main office computer system which is used to generate reports to monitor and prioritize SSMP activities.

The Collections Department manages, reviews, and maintains CCTV records at ~~the Collections Department office located at the Jenny Lind Water Treatment Plant near Valley Springs California and/or~~ the District headquarters in San Andreas. Root abatement and pipe cleaning maps are also maintained by the Collections Department.

#### 10.2. Data Reporting and Assessing the Program

The success of the Preventative Maintenance program is assessed through identification and tracking of trends in key performance indicators over time. The District uses the following performance indicators.

- Location of all SSOs.
- SSOs by cause: roots, grease, debris, pipe failure, pump station failure, capacity.
- Length and location of pipeline cleaned.
- Length and location of pipeline cleared of roots.

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## 10. MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

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- Lift station maintenance performed.
- Repairs and rehabilitation projects completed.
- Number of grease interceptors inspected.

### 10.3. Location of all SSOs

Data collected for SSOs is used to plot spill locations on sewer system maps of each collection system. Spill location markers are color coded to identify cause. Marker shape distinguishes Category 1 from Category 2 and smaller spills. Sewer system maps are maintained by the Engineering Department.

### 10.4. Updating Program Components

Program audits are conducted to ensure the SSMP remains current and useful over time. The District assign staff to coordinate the review of the SSMP, and each section of the SSMP is reviewed by the appropriate staff from both the Operations and Engineering Departments.

### 10.5. 2021 Audit Results

The Operations Department is responsible for maintaining regulatory compliance. As part of the 2021 Audit it was discovered that the District is continuously working on improving to meet these compliance requirements.

11. SSMP PROGRAM AUDITS

*SSS WDR Requirements:* As part of the SSMP, the Enrollee shall conduct periodic internal audits appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every ~~three~~~~two~~ years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the Enrollee's compliance with the SSMP requirements identified in this subsection (D.13), including identification of any deficiencies in the SSMP and steps to correct them.

*Requirements of the Amended Monitoring and Reporting Program:* Implementation of the SSMP and changes/updates to the SSMP must be document and kept on file.

Calaveras County Water District will conduct an internal audit of their SSMP every ~~three~~~~two~~ years, and focus on the effectiveness of the SSMP and the District's compliance with the SSMP requirements of **SSS WDR**. The audit will include, but is not limited to, the following areas:

- Any significant changes to components of the SSMP, including but not limited to:
  1. Legal Authority
  2. Organization
  3. FOG Control Program, and
  4. Overflow Emergency Response Plan.
- Any significant changes to the referenced compliance documents presented as appendix items to the Sewer System Management Plan or as a plan update. A summary of the 2019 Audit and Update findings is presented in a Technical Memorandum and provided as **Appendix F**, along with the 2019 Program Audit.
- SSMP implementation efforts over the past two years.
- Strategies to correct deficiencies, if identified, will be developed by the responsible District department.

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12. COMMUNICATION PROGRAM

*SSS WDR Requirements: The Enrollee shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the Enrollee as the program is developed and implemented.*

*The Enrollee shall also create a plan of communication with systems that are tributary and/or satellite to the Enrollee's sanitary sewer system.*

The District will communicate on a regular basis with the public on the implementation and performance of this SSMP.

~~The SSMP was made available to the public and public comments were invited at the District Board meetings on July 28, 2010 and December 9, 2015.~~ A draft of this update was made available to the public on ~~May 7, 2019~~ ~~April 15, 2025~~ ~~via the District's website~~ and comments were invited at the District's Engineering Committee Meeting and Board Meetings on ~~May 6, 2025 and May 15, 2019~~ and June ~~11, 2025~~ ~~12, 2019~~, respectively.

The District maintains a website at <http://www.ccwd.org>. This website provides information to the public on a wide variety of topics. The website is a valuable and effective communication channel and a source for current District news, features, important announcements, agendas for Board meetings, and information links. Once approved by the Board of Directors, the SSMP will be posted on the web site in an area that will also be used to notify the public of information related to sewer system management.

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## 13. SSMP COMPLETION AND CERTIFICATION

### 13. SSMP COMPLETION AND CERTIFICATION

**SSS WDR Requirements:** Both the SSMP and the Enrollee's program to implement the SSMP must be certified by the Enrollee to be in compliance with the requirements set forth above and must be presented to the Enrollee's governing board for approval at a public meeting. The Enrollee shall certify that the SSMP and subparts thereof, are in compliance with the SSS WDR within the time frames identified in the time schedule provided in subsection D.15 below.

In order to complete this certification, the Enrollee's authorized representative must complete the certification portion in the Online SSO Database Questionnaire by checking the appropriate milestone box, printing and signing the automated form, and sending the form to the State Water Board.

#### 13.1. Approval of Governing Board at Public Meeting

Elements of the SSMP were presented to the District's Engineering Committee and Governing Board of Directors at a public meetings on ~~May 6<sup>th</sup>, 2025 and June 11<sup>th</sup>, 2025~~ ~~respectively on July 28, 2010~~ and adopted per Resolution No. 20~~2510-~~54. The previous audit update was adopted by the Governing Board of Directors on ~~June~~December 9, 20~~2145~~ per Resolution No. 20~~2145~~-68.

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The 2019 SSMP Update and Audit was made available for public review and comment through the District's website starting April 24, 2019. The updated SSMP was presented to the District's Governing Board of Directors at a public meeting on June 12, 2019. The 2019 SSMP Update was adopted per Resolution No. 2019-42.

#### 13.2. Certification of SSMP Elements

Online certification of all elements within the SSMP was completed on ~~July 29, 2010~~. The updated elements will be recertified within seven days of public adoption by the District's Governing Board of Directors.

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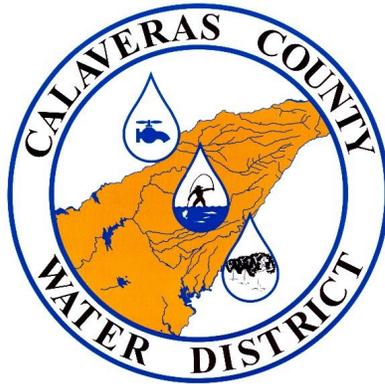
# CALAVERAS COUNTY WATER DISTRICT

## DRAFT OVERFLOW EMERGENCY RESPONSE PLAN

JUNE ~~11~~, 2025

UPDATE

In accordance with  
California State Water Resources Control Board  
Order No. ~~202206-10003-DWQQ~~ and No. ~~WQ-2013-0058-EXEC~~  
General Waste Discharge Requirements for Sanitary Sewer Systems



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Updated: 5/2/2025

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DRAFT

## INTRODUCTION

The following procedures apply to any spill that occurs within the sewer collection system, or to any overflow, bypass, upset, influent, partially treated waste, sludge or chemical spill for the wastewater treatment facilities. This includes spills from recycled water treatment and distribution systems. Surface waters are defined as creeks, rivers ponds, lakes or drainage systems. The definition of a bypass is the intentional diversion of waste streams from any portion of a treatment facility or collection system, except those portions designed to meet variable effluent limits. The definition of an upset is an exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations because of factors beyond the reasonable control of the discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, failure to implement an appropriate pretreatment program, or careless or improper action. For the purpose of spill response and reporting, recycled water means disinfected secondary 2.2 and/or disinfected tertiary recycled water only; any water of lesser treatment is considered "wastewater".

## FIRST RESPONSE

The first concern is to stop any flow or ongoing spill. If a spill is reported during business hours, the Collection System Supervisor (CSS) is immediately notified by customer service staff. During non-business hours the District's answering service will notify on-call field personnel who will immediately notify the CSS. If the CSS is not available, Standby personnel will be designated as second in command, and will respond as the CSS. The CSS will immediately proceed to the spill location. While in route to the spill location, the CSS will contact Collection System Workers in the geographical area of the spill. [-An emergency phone list of Collection Workers by geographical area is attached.](#)

The first Collection System Worker at the spill location will take corrective action and assess the need for additional equipment or assistance and, if needed, traffic control measures. If the CSS is not available, Standby personnel have authority to approve expenditures and contract services to stop or cleanup the spill. [The CSS will then call the Construction & Maintenance Manager and/or the Director of Operations. Either the Collections System Supervisor, the Construction & Maintenance Manager, and/or the Director of Operations will report the spill to the appropriate Regulatory Agencies.](#) The approved list of contract services is attached.

## FOLLOW-UP MEASURES

The second concern is to protect human health and environment. All sewer spills must be [documented by the creation of a work order through the District's Computer Maintenance Management System \(CMMS. The CMMS work order is very flexible in its ability to document the details of the emergency work related to a sewer spill.](#)

employee hours, materials used, clean-up methodology, pictures, and videos can all be contained in the work order which is geolocated in CMMS. This provides a visual geographic depiction of the location and remains in the system permanently as a record of the event and the work done to remediate the situation reported on the sewer spill report form regardless of the location or quantity to which CGWD staff responds. The form is then submitted to the appropriate wastewater treatment plant, either Arnold, Vallecito, Copper Cove, West Point, La Contenta or Southworth Ranch depending on where the spill occurred.

### STATEWIDE REPORTING AND NOTIFICATION REQUIREMENTS

Statewide Regulatory reporting requirements are provided in Table 1.

**Table 1. Statewide Regulatory Notification and Reporting Requirements**

Category	Definition	Reporting Requirements <sup>1</sup>
1	<p><b>Category 1 Spill</b>  <u>A Category 1 spill is a spill of any volume of sewage from or caused by a sanitary sewer system regulated under this General Order that results in a discharge to:</u></p> <ul style="list-style-type: none"> <li>• <u>A surface water, including a surface water body that contains no flow or volume of water; or</u></li> <li>• <u>A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly.</u></li> <li>• <u>Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water, unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility.</u></li> </ul> <p><u>A spill from an Enrollee-owned and/or operated lateral that discharges to a surface water is a Category 1 spill. Sewer spills, overflows, recycle water discharges and bypasses of any volume that:</u></p> <ul style="list-style-type: none"> <li>- <u>Reach surface waters and/or drainage channel tributary to a surface water; or</u></li> <li>- <u>Reach a storm drain system and are not fully recovered and returned to the sewer system. Any volume not recovered from the storm drain system is considered to have reached surface water unless storm drain system discharges to a dedicated storm water or groundwater infiltration</u></li> </ul>	<p><b>Notification</b>  <u>Within two (2) hours of the Enrollee's knowledge of a Category 1 spill of 1,000 gallons or greater, discharging or threatening to discharge to surface waters:</u></p> <p style="text-align: center;"><u>Notify the California Office of Emergency Services and obtain a notification control number.</u></p> <p><b>Monitoring</b>  <u>Conduct spill-specific monitoring; Conduct water quality sampling of the receiving water within 18 hours of initial knowledge of spill of 50,000 gallons or greater to surface waters.</u></p> <p><b>Reporting</b>  <u>Submit Draft Spill Report within three (3) business days of the Enrollee's knowledge of the spill;</u>  <u>Submit Certified Spill Report within 15 calendar days of the spill end date;</u>  <u>Submit Technical Report within 45 calendar days after the spill end date for a Category 1 spill in which 50,000 gallons or greater discharged to surface waters; and</u>  <u>Submit Amended Spill Report within 90 calendar days after the spill end</u></p>

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	basin.	<p>date.</p> <ul style="list-style-type: none"> <li>- _____number Discharges &gt;= 1,000: notify the California Office of Emergency Services (Cal OES) and obtain a notification control number within 2 hours of becoming aware of discharge.</li> <li>- Submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date.</li> <li>- Discharges &gt;= 50,000 GAL: must submit a SSO Technical Report within 45 calendar days of the SSO end date.</li> <li>- Discharges &gt;= 50,000 GAL: must conduct water quality sampling within 48 hours after initial SSO notification.</li> </ul>
2	<p><b>Category 2 Spill</b></p> <p><u>A Category 2 spill is a spill of 1,000 gallons or greater, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water body.</u></p> <p><u>A spill of 1,000 gallons or greater that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system, is a Category 2 spill. Sewer spills, overflows, recycle water discharges and bypasses of 1,000 gallons or greater that do not reach surface water, drainage channel or storm drain and are not fully recovered.</u></p>	<p><b>Notification</b></p> <p><u>Within two (2) hours of the Enrollee's knowledge of a Category 2 spill of 1,000 gallons or greater, discharging or threatening to discharge to waters of the State:</u></p> <p><u>Notify California Office of Emergency Services and obtain a notification control number.</u></p> <p><b>Monitoring</b></p> <p><u>Conduct spill-specific monitoring.</u></p> <p><b>Reporting</b></p> <p><u>Submit Draft Spill Report within three (3) business days of the Enrollee's knowledge of the spill:</u></p> <p><u>Submit Certified Spill Report within 15 calendar days of the spill end date; and</u></p> <p><u>Submit Amended Spill Report within 90 calendar days after the spill end date.</u></p> <p><u>Submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date.</u></p>
3	<p><b>Category 3 Spill</b></p> <p><u>A Category 3 spill is a spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.</u></p>	<p><b>Notification</b></p> <p><u>Not Applicable</u></p> <p><b>Monitoring</b></p> <p><u>Conduct spill-specific monitoring</u></p>

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	<u>A spill of equal to or greater than 50 gallons and less than 1,000 gallons, that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 3 spill. All other sewer spills, overflows, recycle water discharges and bypasses.</u>	<b>Reporting</b> <u>Submit monthly Certified Spill Report to the online CIWQS Sanitary Sewer System Database within 30 calendar days after the end of the month in which the spills occur; and</u> <u>Submit Amended Spill Reports within 90 calendar days after the Certified Spill Report due date.</u> <u>Submit certified report within 30 business days of the end of the month in which SSO occurred.</u>
<u>4Private Lateral Sewage Discharge</u>	<b>Category 4 Spill</b> <u>A Category 4 spill is a spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.</u>  <u>A spill of less than 50 gallons that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 4 spill. Sewer spills, overflows and recycled water discharges and bypasses resulting from blockages or other problems within a privately owned sewer lateral connected to the District's sewer system or from other private sewer assets may be voluntarily reported to the California Integrated Water Quality system (CIWQS) Online SSO Database.</u>	<b>Notification</b> <u>Not Applicable</u>  <b>Monitoring</b> <u>Conduct Spill-Specific Monitoring</u>  <b>Reporting</b> <u>If, during any calendar month, Category 4 spills occur, certify monthly, the estimated total spill volume exiting the sanitary sewer system, and the total number of all Category 4 spills into the online CIWQS Sanitary Sewer System Database, within 30 days after the end of the calendar month in which the spills occurred.</u> <u>Upload and certify a report, in an acceptable digital format, of all Category 4 spills to the online CIWQS Sanitary Sewer System Database, by February 1st after the end of the calendar year in which the spills occur.</u> <u>Discharges may be voluntarily reported.</u>
<u>No Spill</u>	<u>No spills have occurred within the month, or, if reporting quarterly, no spills have occurred within the quarter.</u>	<u>Certify that no SSOs occurred within 30 calendar days of the end of the month, or, if reporting quarterly, the quarter in which no SSOs occurred.</u>

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Notes:

- 1) Reports and water quality results must be entered into the CIWQS Online SSO Database at: (<http://ciwqs.waterboards.ca.gov/>), certified by enrollee's Legally Responsible Official(s).

**Source: (SWRCB General Order 2022 0103-DWQ, 2013)**

**REGIONAL REPORTING AND NOTIFICATION REQUIREMENTS**

- ◆ Spills exceeding 1,000 gallons of wastewater or partially treated recycled water must be reported immediately by the Collection System Supervisor or Standby

personnel to the following agencies:

- California Office of Emergency Services (Cal OES) at (800) 852-7550
  - Calaveras County Office of Emergency Management (OEM) – John Osbourne at (209) 754-6676 or cell at (209) 286-9087
  - County Environmental Health ~~Director~~Manager – Lisa Medina at (209) 754-6744 or cell at ~~209-897-0302~~ 916-207-7967
  - Calaveras County Environmental Health REHS – ~~Matthew Poole~~Paul Feriani at (209) 754-28266694 or cell at 209-352-8766.
  - RWQCB, ~~Howard Hold~~Kenny Croyle at (916) 464-46796, fax (916) 464-4681
- ◆ Spills at or exceeding 50,000 gallons of recycled water must be reported immediately by the Collection System Supervisor or Standby personnel to the following agencies:
- County Environmental Health – Lisa Medina at (209) 754-6744, or cell at 209-897-0302.
  - RWQCB, ~~Howard Hold~~Kenny Croyle at (916) 464-4679757, fax (916) 464-4681
- ◆ Spills, overflows, and bypasses to surface water must be reported immediately by the Collection System Supervisor or Standby personnel to the following agencies:
- Cal OES (800) 852-7550
  - County Environmental Health – Lisa Medina at (209) 754-6744 or cell at 209-897-0302.
  - RWQCB, ~~Howard Hold~~Kenny Croyle at (916) 464-4679757, fax (916) 464-4681
- ◆ Spills, overflows, and ~~bypasses to~~bypasses ~~surface to~~ surface waters which are a source of potable water must be reported Immediately by the Collection System Supervisor or Standby personnel to the following agency:
- Department of Drinking Water (DODW) at (209) 948-3881
- ◆ Any spills entering the Stanislaus, Mokelumne or Calaveras Watersheds must be reported to:
- ~~Damon~~ Damon Wyckoff - Director of Operations at (209) 754-3306 or cell 209-768-8682

## CLEANUP

Cleanup always requires the removal of any visible solid waste material. The area should be lightly raked and should include spraying the area with dilute chlorine bleach solution. Commercial bleach is 12.5%. Household bleach is 5.25% ~~a cup~~. A cup of commercial bleach in one gallon of water is 7500 mg/l and a cup of household bleach in one gallon of water is 3300 mg/l. This is pretty strong, but we do want to kill any pathogenic organisms that may be present. **Do not disinfect if spill is reaching a receiving stream.** A masking agent may be used in areas that have

sensitive landscaping.

## SAMPLING

If the wastewater or recycled water spill is discharging to flowing surface waters, such as a creek, pond, lake or drainage system, all attempts must be made to contain the spill and divert it away from surface waters. Samples should be taken as soon as possible after stopping the spill and after the emergency clean up. Samples are to be collected in at least three locations:

- ◆ Upstream from the spill
- ◆ At the spill Mixing zone
- ◆ At some point below the spill, between 1/8 to one mile away from the mixing zone.

Coordinate the sampling with the local Environmental Health Officials.

## SEWAGE SPILL SAMPLE COLLECTION GUIDELINES

Use the following sample method if a sewage spill is discharging into any body of water, including seasonal storm drainages.

- ◆ Collect two samples. One plastic liter container upstream from the spill “mixing zone” (the point where the spill and body of water combine). Label this “#1 Upstream”. Include the name of the stream, lake or drainage, the approximate distance from the mixing zone, the date, the time, and your name. Make sure this sample is taken far enough upstream that the spill does not impact the sample. In addition, collect one [BacteeBacti](#) sample bottle. Label this the same as the liter sample; only enter the sample bottle id number on the chain of custody form. An example chain of custody form is provided as an attachment to this document.
- ◆ Collect two samples. One plastic liter container from the mixing zone. Label this “#2 mixing zone”. Include the location, the date, the time, and your name. This should be collected at the exact spot or location where the spill connects with the drainage or creek. In addition, collect one [BacteeBacti](#) sample bottle. Label this the same as the liter sample; only enter the sample bottle ID number on the chain of custody form.
- ◆ Collect two samples. One plastic liter container downstream from the mixing zone (between 1/8 and 1mile, If possible). Label this “#3 Downstream”. Include the location, approximate distance from the mixing zone, the date, the time, and your name. In addition, collect one [BacteeBacti](#) sample bottle. Label this the same as the liter sample only. Enter the sample bottle ID number on the chain of custody form.

During business hours, these samples should be delivered to the CCWD Main Office. If samples are collected after hours, pack the samples on ice for the next delivery to the lab. The following tests are required for these samples: pH, EC, ammonia, chlorine residual and fecal coliform. The laboratory staff will assist you in completing the "Chain of Custody" form, should you have any questions.

If you have any questions regarding where or how to sample, please contact the Director of Operation or the Plant Operations Manager.

### POSTING OF WARNING SIGNS

The Calaveras County (CC) Department of Environmental Health must be notified of all sewer spills that exceed **1,000 gallons**, or recycled water that exceed **50,000 gallons**. Posting of warning signs will be done by County personnel and at their discretion. Be sure that the county is made aware of the spill location and directions to the site, as well as the nature of the spill.

### FINAL REPORTING

The first Collection System Worker or Supervisor on the scene should initiate the sewer spill work order in CMMS report form (the form is attached). Specific data must include, include the spill description including estimated flow and volume. In the event of a spill which enters flowing drainages, creeks or lakes, the surface water drainage must be identified and any impacts to the drainage must be noted. Please make note of any erosion, fish kill, or increased turbidities that the spill caused (take pictures if a camera is available). Work Orders must be created for This form must be used for ALL SPILLS levels 1 through 4, regardless of the quantity or location.

The Collection System Supervisor is responsible for making sure that the CMMS work orders are CWD spill report form is completed correctly, and that all cleanup and notification procedures have been followed. The CCWD spill report CMMS Work Order is geolocated in the CMMS System and can be accessed at any time post completion. This allows anyone to review the spill report, photographs, videos, etc. into the future and provides important information Regulatory can reference into the future and aids in determining future Capital improvement objectives. a form will then be faxed by Collection System Supervisor to the RWQCB before the end of the next working day for all reportable spills, as defined in Table 1.

~~Sewer spill or recycled water spill reports of any amount must be submitted to the closest wastewater plant within 24 hours.~~

- ~~◆ Arnold's fax number is (209) 795-0596~~
- ~~◆ Vallecito's fax number is (209) 728-2769~~
- ~~◆ Copper Cove's fax number is (209) 785-5524~~
- ~~◆ West Point's fax number is (209) 293-1455~~
- ~~◆ La Contenta's fax number is (209) 772-1834~~

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~~The Arnold, Vallecito, Copper Cove, West Point, or La Contenta plant supervisors will maintain permanent SSO records at the plants for inspection by the appropriate regulatory agencies. All records concerning collection system maintenance activities and spill reporting will be kept in a maintenance and tracking system.~~

A written report must be submitted to the Regional Water Quality Board within the timeframe described in Table 1. The report should include the nature, time, and cause of the spill, how the spill was cleaned up, and what corrective actions have been implemented to prevent a spill from occurring in the future. The CCWD spill report form will provide most of the information. Any additional information should be included.

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**EMERGENCY NUMBERS FOR  
SEWER SPILL RESPONSE  
(Revised 06/11/2021)**

**I. DISPATCH**

	<u>Pager #</u>	<u>Office/Plant #</u>
After Hours #	<del>209-5300</del> Pin# 4351	209-754-3543
Answering Service		209-736-6106

**II. COLLECTIONS SYSTEM/LIFT STATIONS**

	<u>Cellular #</u>	<u>Office/Plant #</u>
Amos Roeder <sup>1</sup>	209-768-6319	209-728-9849
<del>Rec Filippini</del>	<del>209-768-5269</del>	<del>209-772-1589</del>
<del>Chris Reece</del>	<del>209-768-6249</del>	<del>209-728-9849</del>
<del>Zack Scott</del>	<del>209-419-7032</del>	<del>209-728-9849</del>
<del>Jason Newton</del>	<del>209-419-3210</del>	<del>209-772-1589</del>
<del>Tommy Sage</del>	<del>209-419-5759</del>	<del>209-795-5161</del>
<del>Eli Beller</del>	<del>209-419-0700</del>	<del>209-728-9849</del>
<del>Nick Fereria</del>	<del>209-419-3127</del>	<del>209-728-9849</del>
<del>Clinton Carter</del>	<del>209-419-5899</del>	<del>209-785-2224</del>

**III. ELECTRICIANS**

	<u>Cellular #</u>	<u>Office/Plant #</u>
Brian Crumpacker	209-768-1129	209-293-4139
Tony Broglio	209-768-7415	209-795-1789
<del>Clayton Lang</del>	<del>209-768-6201</del>	<del>209-754-9720</del>
<del>Craig Canepa</del>	<del>209-768-7416</del>	<del>209-728-9849</del>
<del>Jared Devich</del>	<del>209-768-6258</del>	<del>209-???-????</del>

**IV. MECHANICS**

	<u>Cellular #</u>	<u>Office/Plant #</u>
<del>Mike Samorano</del>	<del>209-768-6202</del>	<del>209-754-9720</del>
<del>Eric Davis</del>	<del>209-419-7154</del>	<del>209-754-9720</del>

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Cameron Edens	209-419-6526	209-754-9720
<a href="#">Roy Greer</a>	<a href="#">209-768-6202</a>	<a href="#">209-754-9720</a>
<a href="#">Charley Robbins</a>	<a href="#">209-768-6222</a>	<a href="#">209-754-9720</a>

**V. EBBETTS PASS WASTEWATER - Includes:  
ARNOLD WWTP, FOREST MEADOWS WWTP,  
VALLECITO WWTP**

	<u>Cellular #</u>	<u>Office/Plant #</u>
Ron Rose	209-768-7767	209-728-8156
<a href="#">Scott Lunsford</a>	<a href="#">209-768-6222</a>	<a href="#">209-795-0416</a>
Zach Burke	209-768-8627	209-795-6117
Gabriel DeAmicis	209-768-6206	<del>209-795-0416</del> <del>728-2460</del>
<a href="#">Scott Grutzmacher</a>	<a href="#">209-768-6280</a>	<a href="#">209-728-8156</a>
<del>209-768-6280</del>		
<del>rutzmacher</del>		
<a href="#">Michael Hardin</a>	<a href="#">209-768-5122</a>	<a href="#">209-728-8156</a>
<a href="#">Michael Kennedy</a>	<a href="#">209-768-6201</a>	<a href="#">209-728-2460</a>
<a href="#">Daniel Gedese</a>	<a href="#">209-419-2543</a>	<a href="#">209-795-0416</a>

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**VI. COPPER COVE  
WASTEWATER**

	<u>Cellular #</u>	<u>Office/Plant #</u>
<a href="#">Bill Cardinal</a>	<a href="#">209-768-6248</a>	<a href="#">209-785-0519</a>
<a href="#">John Applegate</a>	<a href="#">209-768-8683</a>	<a href="#">209-785-0519</a>
<a href="#">Thomas Chimente</a>	<a href="#">209-768-2782</a>	<a href="#">209-785-0519</a>
<a href="#">David Byous</a>	<a href="#">209-419-5308</a>	<a href="#">209-785-0519</a>
Jeremy Wood	209-768-6240	209-785-8501

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**VII. LA CONTENTA WASTEWATER**

	<u>Cellular #</u>	<u>Office/Plant #</u>
Ben Stopper	209-217-7757	209-772-9667
Chris Skrbina	209-768-6320	209-772-1385
John Brown	209-753-8319	209-772-1672
John Applegate	209-768-8683	209-772-1672
David Young	209-768-0053	209-772-1672
<a href="#">Michael Foeldj</a>	<a href="#">209-419-7154</a>	<a href="#">209-772-1672</a>

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Christian DeMasters	209-286-9203	209-772-1672
<b>VIII. WEST POINT WASTEWATER</b>	<b><u>Cellular #</u></b>	<b><u>Office/Plant #</u></b>

<u>Doug Turner</u>	<u>209-768-5612</u>	<u>209-293-1433</u>
Scott Grutzmacher	209-768-6280	209-293-7191

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<b>IX. INSPECTORS</b>	<b><u>Cellular #</u></b>	<b><u>Office/Plant #</u></b>
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Jared Gravette	209-768-5062	209-772-1458
<u>Jason Knick</u>	<u>209-770-0637</u>	<u>209-754-3389</u>

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<b>X. CONSTRUCTION</b>	<b><u>Cellular #</u></b>	<b><u>Office/Plant #</u></b>
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<u>Chris Zanardi</u>	<u>209-768-6255</u>	<u>209-728-9849</u>
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Roger Tindell	209-419-4633	209-728-9849
<u>Nate Kirschman</u>	<u>209-768-8435</u>	<u>209-728-9849</u>
<u>Dylan Cuneo</u>	<u>209-770-5444</u>	<u>209-728-9849</u>
<u>Matt Duncan</u>	<u>209-419-3210</u>	<u>209-728-9849</u>
<u>Matt Crislip</u>	<u>209-768-8681</u>	<u>209-772-1458</u>
<u>Logan VanZant</u>	<u>209-770-5444</u>	<u>209-728-9849</u>
<u>Kenton Airola</u>	<u>209-642-3209</u>	<u>209-728-9849</u>

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<b>XI. UTILITY</b>	<b><u>Cellular #</u></b>	<b><u>Office/Plant #</u></b>
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<u>Ryan Sullivan</u>	<u>209-770-5454</u>	
<u>Chris Reece</u>	<u>209-768-6249</u>	
<u>Austin Brown</u>	<u>209-768-8435</u>	
<u>Casey Roberts</u>	<u>209-770-5453</u>	

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<b>XII. PURCHASING AGENT</b>	<b><u>Cellular #</u></b>	<b><u>Office/Plant #</u></b>
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Mike Crank	209-768-6826	209-768-6826
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<b>XIII. OPERATIONS MANAGERS</b>	<b><u>Cellular #</u></b>	<b><u>Office/Plant #</u></b>
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Damon Wyckoff	209-768-8682	209-754-3306
Jesse Hampton	209-768-7417	209-754-3316
Patrick Burkhardt	209-768-6247	209-754-3304

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<b>XIV. ENGINEERING MANAGER</b>	<b><u>Cellular #</u></b>	<b><u>Office/Plant #</u></b>
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<u>Kevin Williams</u>	<u>209-419-3979</u>	<u>209-754-3184</u>
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**XIV. GENERAL MANAGER**  
Michael Minkler

**Office/Plant #**  
209-754-3001

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## APPROVED CONTRACT SERVICES

### OUTSIDE AID

#### **PUMPER TRUCKS:**

Foothill Sanitary.....(209) 785-6160  
1640 Copper Cove Drive Cell: (209) 770-6161  
Copperopolis, Ca 95243 Pager: (209) 708-0530

Sweet Pea Septic Services.....(209) ~~296-~~  
7779  
3840 Brother St.  
Pine Grove, CA 95667

#### **PLUMBING SERVICES:**

Angels Sewer & Drain Services..... (209) 736-0763  
2346 Monty Drive  
Angels Camp, CA 95236

#### **LABORATORY:**

~~FGL.....(209) 942-0182~~  
~~2500 Stagecoach Road~~  
~~Stockton, CA 95215~~  
49er Water Laboratories.....(209) 418-3175  
245 New York Ranch Rd  
Jackson, Ca 95642

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#### **HAZARDOUS MATERIALS HANDLING:**

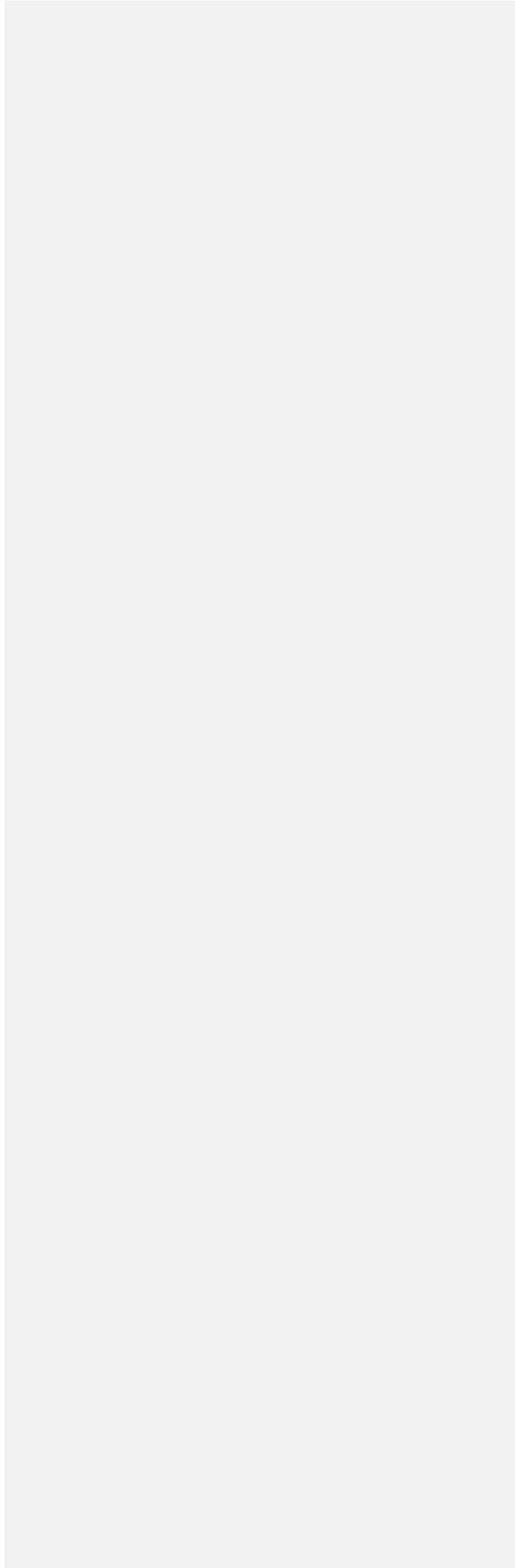
Updated: 5/2/2025

|

Hazmat..... 911

DRAFT

Updated: 5/2/2025



# Agenda Item

DATE: May 6, 2025

TO: Engineering Committee, Calaveras County Water District  
Michael Minkler, General Manager

FROM: Kevin Williams, District Engineer

RE: Discussion on Arnold Wastewater Treatment Plant Project

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The Arnold WWTP Improvements Project continues to advance, with bid-ready documents nearly complete. The District anticipates advertising the project for construction by the end of May 2025.

To fund the project, CCWD has secured a \$10.2 million low-interest loan from USDA Rural Development. USDA has approved both the engineering documents and the environmental review, clearing the way for bidding and construction. The District also pursued funding through the State Revolving Fund (SRF); however, we were informed that SRF funding is currently limited due to budget constraints and that this project does not meet the program's current funding priorities.

USDA Rural Development has experienced recent staffing reductions. Our long-time USDA engineer, Mike Starinsky who we had an excellent working relationship with opted for early retirement. In his place, we have been assigned a new engineer who currently oversees all USDA projects throughout the State of California. This staffing change has contributed to some delays and shifting requirements that have slowed progress.

As a federally funded project, compliance with the Build America, Buy America (BABA) Act is mandatory. All iron, steel, manufactured products, and construction materials used in the project must be produced in the United States. These requirements have been incorporated into the project specifications, and contractors will be required to certify and document compliance. While BABA requirements have historically increased material costs, current tariffs and trade uncertainties may reduce pricing volatility and procurement delays.

Major improvements planned as part of the project include:

- Replacement of electrical systems
- Installation of a new secondary clarifier and effluent pump station
- Construction of a new RAS/WAS pump station
- Addition of two new aerobic digesters

- Installation of new blowers
- Site-wide utility and grading improvements

Staff will continue to coordinate closely with USDA and keep the Board informed throughout the bid and bring the bid to the full board for final approval.

**Power Rate Analysis for the Arnold Wastewater Treatment Plant**

The Arnold Wastewater Treatment Plant is eligible for Primary Plus rates through Calaveras Public Power Agency (CPPA). The additional cost for Primary Plus service is estimated at \$112,590, on top of PG&E’s installation cost of \$90,785 for secondary power service. Rates vary annually, making this a difficult decision. Engineering has been working with Accounting to evaluate projected cost savings over the life of the project while accounting for recent volatility in energy pricing. There is no guarantee on future rates.

In 2024, the treatment plant consumed 178,880 kWh. Historical CPPA rates are shown below:

<b>Rate Year</b>	<b>Secondary (\$/kW-month)</b>	<b>Primary (\$/kW-month)</b>
2023	\$30.003	\$16.051
2024	\$12.202	\$11.032
2025	\$33.689	\$16.506

The proposed CPPA rates starting in July are \$0.18/kWh for Secondary and \$0.11/kWh for Primary Plus.

If CPPA Primary Plus remain at this level, the initial investment of \$112,590 would have a projected payback period of nine (9) years.

# Agenda Item

DATE: May 06, 2025

TO: Engineering Committee, Calaveras County Water District  
Michael Minkler, General Manager

FROM: Engineering Department

RE: Proposed Development Projects

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There has been an increased interest in development in all the Service areas of the District. Calaveras County has implemented a pre-application process that allows project owners to meet with the appropriate regulatory agencies to obtain the information and guidance needed for a successful application. District staff have been part of the pre-application meetings on the following interests:

1. Hinterhaus Distillery, Arnold

The application is for the Distillery to move the existing working equipment (boiler and still) to the adjacent building and add another still and restructure the existing space. This allows the owner to reduce production times, than increase production at this point. However, increased production would also be the desired effect of the said project. The District is evaluating water demand and waste that will be generated.

2. Valley Springs – Commercial Project

The proposed project is approximately 23 acres and covers three parcels to the Northwest of Hwy 26 and Quail Oaks. All the parcels have general plan land use designation of commercial. The proposed development at the time of pre-application has identified Gas Station/Convenience Store and Restaurant/Retail parcel with ingress/egress access driveways off Quail Oaks Road. While the other two parcels had overlapping use for a 140 Units Self-Storage and approx. 120 space RV park. These parcels currently are not part of the District water and wastewater service area and will need an amendment to the LAFCO service area. The owner has been asked to submit a concept review application with the District, to assess the potential impacts to the existing system and any improvements that might be needed to serve the said project.

3. Mixed Use Development, Valley Springs

The proposed development consists of 169 apartments, a 110-room hotel, a 81-unit storage facility and 60,000 sq ft of retail facilities including a diner, quick service restaurant etc. The development is proposed on two parcels (APN 046-016-091 and -092) totaling 32.31 acres. The parcels are zoned for commercial use

per the county land use general plan. The District water main traverses along Hwy 26 and serves parts of town across the proposed development. Sewer system connection exists on the south side of the project. The District received a concept review application this week and will be reviewing current and future needs of the project.

# Agenda Item

DATE: May 6, 2025

TO: Engineering Committee, Calaveras County Water District  
Michael Minkler, General Manager

FROM: Kevin Williams, District Engineer

RE: Capital Improvement Update

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## **Copperopolis Water Projects:**

**Copper Cove Tank B / Clearwell (11083C)** – The new Copper B Tank has been completed and placed into service as of last week. Crews have also completed the erection of the new Clearwell Tank at the Water Treatment Plant. The existing pump station was taken offline for installation of a new wye connection, which will serve as the starting point for the C-Transmission Line.

**Copper Cove Lake Tulloch Intertie (11104)** – This project includes a new water main along O’Byrnes Ferry Road that will create a looped connection to the Poker Flat area. The project is currently at 90% design. Staff are soliciting proposals for potholing existing utilities and tie-in locations. Funding is proposed through CIP Loan #2.

**Copper Cove C-Transmission Line (11122)** – Bids have been received for construction. The project consists of installing a new 20” transmission main from the Copperopolis Water Treatment Plant to C Tank, along with booster pump station modifications to include larger high-head pumps.

**Copper Cove Ozone Unit Replacement (11133)** – The aging ozone generator at the Water Treatment Plant has been replaced with a modern system. All work was completed in-house by District staff.

## **Ebbetts Pass Water Projects:**

**Sawmill Tank (11083S)** – Design and environmental work are 100% complete. Construction is anticipated to begin in the 2026 season. Proposed funding source is CIP Loan #2.

**Big Trees Pump Station 4 (11108)** – Design is scheduled to begin in FY 2026–2027. Staff met with Cal OES to discuss potential grant funding for this and three other pump stations vulnerable to wildfire impacts.

### **Jenny Lind / Wallace Water Projects:**

**Jenny Lind Clearwell #2 (11083J)** – Rehabilitation work is complete and the tank is back online.

**Jenny Lind A-B Transmission Main (11088)** – D.A. Woods Construction is progressing on installation of the new 14” transmission main, with approximately 9,000 linear feet completed. Trench paving is finished for the first sections. Once pipeline and service line replacements are complete, the roadway will be overlaid.

**Wallace Tank Replacement (11083W)** – Design and environmental review are 100% complete. Construction is scheduled to begin in 2026.

### **West Point Water Projects:**

**Backup Filter (11106)** – The project is nearing completion, with final work underway on the replacement metal building.

**Drought Water Supply Project (11106)** – This FEMA-funded project will expand West Point Reservoir’s storage capacity from 50 acre-feet to 150 acre-feet. DSOD has authorized exploratory drilling within the dam to confirm design parameters. The 30% design will be submitted once drilling is complete.

### **Arnold Sewer Projects:**

**Arnold Wastewater Treatment Plant Improvements (11106)** – The project is scheduled to be advertised for construction by the end of May.

### **Copper Cove Sewer Projects:**

**SAF Tertiary Treatment (15094)** – The SAF unit has been ordered. A field meeting was held last week with operations and construction staff to review the installation plan and proposed drying beds.

**Pond 6 Dam Raise (15112)** – Early season biological surveys are underway. Other work is on hold pending receipt of a revised letter report to initiate additional funding. Progress may be delayed due to recent leadership changes at the U.S. Army Corps of Engineers.

### **La Contenta Sewer Projects:**

**La Contenta WWTP Biolac (15097)**– HydroScience Engineers are finalizing the 90% design drawings for the WWTP improvements.

**Huckleberry Lift Station (15092B)** – Lumos Engineers are also working on 90% design drawings. Significant value engineering and redesign were required after initial cost estimates exceeded expectations.

**West Point / Wilseyville Projects:**

**West Point Consolidation (15091)** – The District received a time extension from the State Water Resources Control Board due to construction delays caused by material shortages at the beginning of the Project. Crews are dewatering the Wilseyville sewage pond using the spray field, which has never been used since the facility was constructed. Staff are coordinating with the Water Board to amend the facility permit to include the consolidated system.

# Agenda Item

DATE: May 06, 2025

TO: Engineering Committee, Calaveras County Water District  
Michael Minkler, General Manager

FROM: Engineering Department

RE: Developer Projects

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There has been an increase in Design and Planning for Developer Projects over the last few months.

## **CV Development, Copperopolis –**

1. Reeds Turnpike Booster Pump Station: Received 90% Design Document for the Reed Turnpike Pump Station. Engineer is working on 100% Design. District is awaiting Owners approval to extend easement on the lot of existing pump station.
2. Town Square Lift Station: The developer has made interim repairs to the existing list station. Developer hired contractor replaced the pvc piping in wetwell and vault with Steel and mechanical restraints.
3. Forcemain: Engineer is working on the design drawings as per the pre-design report accepted by the District.

**Jenny Lind Elementary School Force Main-** The District received 100% design plans and specifications from the School District. Plans have incorporated all the changes proposed by the District, specifications were reviewed by staff to address all material and any easement acquisitions for the project. District staff met with the Calaveras Unified School District representatives to discuss the construction phase of the project.

**LGI Homes/Valley Springs-** Received the 50% design drawings for the Sewer Lift Station A for North Vista Plaza, Design Engineer to submit on plans for Lift Station B in the coming week. The District has already approved the design for LGI to install a new sewer force main across Highway 26 which will bypass the gravity sewer bottleneck through the La Contenta Golf Course. The District is working with the developer on acquiring encroachment permits from the County and Caltrans. Notice of Exemption for Environmental Impacts was filed with the County.

# Agenda Item

DATE: May 6, 2025

TO: Engineering Committee, Calaveras County Water District  
Michael Minkler, General Manager

FROM: Juan Maya, Associate Civil Engineer

RE: Other Updates

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## SUMMARY

### **La Contenta Sewer System I&I Study**

Wet weather flow data has been received, and a preliminary analysis has been shared with the District. Dry weather monitoring is scheduled to begin in June, with a final report and recommendations to follow.

### **Ebbetts Pass Water System Master Plan & Water Model**

A kickoff meeting with HydroScience is scheduled for this week. The first task will be to develop an entirely new hydraulic water model for the system.

### **La Contenta Sewer Master Plan Update**

HydroScience Engineers is updating the La Contenta Sewer Master Plan to incorporate current population projections, revised project scopes, and updated cost estimates.

### **Procore Construction Management Software**

Engineering staff has been meeting weekly with Procore integration specialists to configure the software modules to meet the District's needs.

### **Sewer Ordinances**

Engineering, Operations, and Finance have initiated planning efforts to define the scope of proposed revisions to the Sewer Ordinances. Staff is reviewing ordinances from other jurisdictions and considering comprehensive overhaul.

## FINANCIAL CONSIDERATIONS

All studies and the construction management software have been budgeted for Fiscal Year 2024–25.