

---

## **Cross-Connection Control for Small Community Water Systems**

**Purpose of Cross-Connection Control Program:** Water provided by a public water system may be contaminated via cross-connections within the distribution system. The purpose of the cross-connection control program is to reduce the hazard of contamination of the public water system by identifying actual and potential cross-connections and taking action to protect the system from these hazards. This is accomplished by installing backflow prevention assemblies where hazards are identified; or ensuring that water-using equipment on the premises is installed in accordance with plumbing code requirements and good practice.

### **What are cross-connections?**

Cross-connections are actual and potential unprotected connections between a potable water system and any source or system containing unapproved water or a substance which is not safe. Examples of cross-connections include:

1. Improperly installed irrigation systems that may allow backsiphonage of stagnant, bacteriologically unsafe water into the piping system.
2. Improperly plumbed water-using devices such as hot-tubs, boilers or commercial dishwashers which may allow unsafe water back into the domestic piping system.
3. Irrigation systems served by an auxiliary source, such as a private well or creek. Such systems create a potential for major contamination of the public water system via interties with the domestic piping system.
4. Interconnections between the potable system and a non-potable system.

### **What the Regulations Require**

Section 7584 of the California Code of Regulations requires that each public water system have a cross connection control program that includes these elements:

1. The adoption of operating rules or ordinances to implement the cross-connection program.
2. The conducting of surveys to identify water user premises where cross connections exist or are likely to occur.
3. The provisions of backflow protection by the water user at all connections where a cross connection hazard has been identified.
4. The provision of at least one person trained in cross connection control to carry out the program.
5. The establishment of a procedure or system for testing backflow prevention assemblies.
6. The maintenance of records of locations, tests, and repairs of backflow prevention assemblies within each water supplier's distribution system.

## **Getting Started**

For small community water systems, the initial elements of the program consist of the following:

1. Adopting an ordinance or set of rules to implement the cross-connection control program. A copy of a sample ordinance for small systems is attached. The ordinance is important since it establishes the legal authority to carry out the program.
2. Conducting a system survey to identify actual and potential cross-connection hazards.
3. Ensuring that hazards are abated by the installation of backflow prevention assemblies at the meter, eliminating the hazard in conjunction with the owner of the property or providing internal cross-connection protection.

## **System Survey**

The system survey consists of a preliminary survey and, if necessary, a more detailed second survey. For most small systems, the initial survey may consist of a questionnaire sent to each customer asking whether the customer has specific potential hazards. Documentation of the system survey is to be submitted to the Department. Attached is a summary form for documentation of the system survey.

## **Residential areas**

Customers should be asked if any of the following are located on-site:

1. Auxiliary water supply (i.e. either a well or a creek pump) - backflow prevention device is mandatory.
2. Irrigation systems - backflow prevention device not required if system is installed in accordance with plumbing codes with appropriate vacuum breakers.
3. Swimming pool, hot tub or spa - backflow prevention device not required if system is installed in accordance with plumbing codes.
4. Solar hot water heating panels - backflow prevention device not required if system is installed in accordance with plumbing codes.
5. Graywater systems - backflow prevention assemblies may not be required if the system is installed in accordance with the Uniform Plumbing Code.

If these or other potential hazards are located on site, the water system is to determine whether the equipment has been installed in accordance with plumbing codes and/or good practice in order to minimize the risk of backflow.

**Commercial customers:** A more detailed questionnaire and survey is necessary. Small community systems, which also serve commercial customers, should review the Department of Health Service's "Manual of Cross-Connection Control - Procedures and Practices". A system survey of commercial users as specified in the Manual is to be performed. As an alternative, the system may decide to require backflow prevention assemblies at all commercial service connections where hazards are likely to exist.

**Wastewater and Hazardous Wastes:** A service connection which handles wastewater or dangerous chemicals requires special evaluation and protection from cross-connection hazards. For additional information on evaluating this type of facility, please contact the appropriate regulatory agency and a cross-connection control specialist.

Attachment: Summary Form for System Survey  
State of California-Department of Health Services

**Cross-Connection Survey Summary Form-Small Community Water Systems**

Name of System \_\_\_\_\_ System Number \_\_\_\_\_

Description of Survey Procedures-How survey was conducted (include copy of survey form):  
Person conducting survey (List name and qualifications):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Procedures for Residential Connections:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Procedures for Commercial Connections:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Total number of service connections \_\_\_\_\_ Number of service connections surveyed \_\_\_\_\_  
Number of connections with auxiliary sources (i.e. wells or creek pumps) \_\_\_\_\_  
Number of connections with other hazards \_\_\_\_\_  
Total number of backflow prevention devices \_\_\_\_\_

| Type of Hazard Identified(i.e. private well, hot tub, irrigation system, swimming pool, etc) | Number of connections with hazard | Number of devices installed | Number where device not necessary |
|--|-----------------------------------|-----------------------------|-----------------------------------|
|  |                                   |                             |                                   |
|  |                                   |                             |                                   |
|  |                                   |                             |                                   |
|  |                                   |                             |                                   |
|  |                                   |                             |                                   |

Describe follow-up for service connections that did not respond to the survey:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Long-term (Describe on-going cross-connection protection & testing of backflow prevention assemblies)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Submitted by (signature) \_\_\_\_\_ Date \_\_\_\_\_