NORTH MARIN WATER DISTRICT

MEMORANDUM

To: Board of Directors August 20, 2024

From: Eric Miller, Assistant GM/Chief Engineer

Subject: New State Guidelines for Cross-Connection Control

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RECOMMENDED ACTION: Information only

FINANCIAL IMPACT: Unknown at this time

SUMMARY

The State of California Water Resources Control Board (State Water Board) adopted a new Cross-Connection Control Policy Handbook (CCCPH) that became effective on July 1, 2024. The primary objective of the 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 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.

The CCCPH and its standards apply to all California PWSs, as defined in California's Health and Safety Code (CHSC, section 116275 (h)). As such, compliance with the CCCPH is mandatory for all California PWSs. Through the adoption of the CCCPH, the State Water Board is exercising its authority, under California's Safe Drinking Water Act (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.

Prior to the adoption of the CCCPH, California's regulations pertaining to cross-connection control were set forth in the California Code of Regulations (CCR) Title 17, which were adopted in 1987 with minor revisions in 2000. Although protective of public health, the CCR Title 17 cross-connection regulations were vague or ambiguous in some instances, leaving PWSs without clear enforceable standards which resulted in inconsistent application throughout the state. The CCCPH updates those regulations, and supersedes them as of July 1, 2024.

CROSS-CONNECTION

A cross-connection is an actual or potential connection between a PWS and a customer's premise where there is the use or presence of a liquid, gas, or other substances including any unpermitted sources of water. 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 distribution system pressure. This may be caused by a variety of circumstances, such as main breaks, flushing, pump failure, or emergency firefighting water demand. Backpressure occurs when the pressure from a non-potable source exceeds the pressure in the potable water distribution system. This may occur when heating, cooling, waste disposal, or industrial manufacturing systems are connected to potable supplies and the pressure in the customer's service side 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, agricultural, or residential premises flows back into the distribution system through a cross-connection.

The most common practice to prevent backflow from occurring is the installation of an approved backflow prevention assembly (BPA) at each service connection to a premise where a hazard has been identified. A BPA is a mechanical assembly designed and constructed to prevent backflow. BPAs are installed in-line at the service connection and must be inspected and tested periodically to ensure proper function and are maintained, repaired or replaced when necessary.

CROSS-CONNECTION CONTROL PROGRAM

Under the State Water Board's CCCPH, a PWS must protect the public water supply through implementation and enforcement of a cross-connection control program (program). Each PWS must have operating rules, ordinances, by-laws, or a resolution to implement the 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 program's provisions regarding installation, inspection, field testing, or maintenance of a BPA. 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, 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 program.

The PWS must conduct a hazard assessment of its service area that identifies actual or potential cross-connection hazards, the degree of hazard, and any backflow prevention needed. Under the program each individual premise will be classified as either a high hazard cross-connection, a low hazard cross-connection, or having no hazard. Examples of some high hazard cross-connection activities are;

1. Premises with an auxiliary water supply, e.g. well, pond, storage tank, or swimming pool
2. Premises with more than one connection to the PWS
3. Recycled water or graywater systems
4. Commercial and/or industrial facilities
5. Private water distribution facilities
6. Premises with restricted or denied access

Under the District's program, any premise identified as either a potential high hazard or low hazard cross connection will be required to install, continually operate, and regularly test a BPA. The District has a cross-connection control specialist that has been designated as responsible for administration of the District's program, however ownership, maintenance and testing of the BPA device(s) will be the responsibility of the customer.

DISTRICT REGULATIONS

Staff is in the process of revising three (3) District Regulations in response to the State Water Board's CCCPH. Most notably, revisions to Regulation 6, Cross-Connection and Backflow Protection for Potable Water Service, will soon be presented to the Board which will contain detail on implementation of the District's program. Additionally, Regulation 36, Installation of Service to Private Fire Protection Systems, and Regulation 54, Water Rates, are impacted by the CCCPH and revisions will be presented to the Board concurrent with Regulation 6.

IMPACT TO DISTRICT OPERATIONS

The District has historically maintained a robust cross-connection control program and already has in-place many of the requirements mandated by the CCCPH. The most notable impact of the new guidelines will be to a portion of the District's residential customers. Specifically, to those residential customers with more than one connection to the PWS. For example, a single-family residence with an accessory dwelling unit (ADU) is classified as a high hazard premise under the CCCPH, and now requires installation of a BPA at the water meter for both the single-family residence and their ADU.

Another example is customers with residential fire sprinkler systems, whether they are new or existing, now being required to install a BPA at their water meter. This requirement may have additional implications if their water meter is located within their driveway. BPAs are above-ground devices that require protection from vehicles to ensure proper function. If a customer's water meter is in their driveway, it must be relocated out of their driveway to accommodate installation of a new BPA. Water meter relocation often requires a new connection to the PWS and increased cost that is unavoidable under the CCCPH.

Multi-family residential dwellings such as apartment and condominium complexes are also impacted. These types of dwellings are classified as high hazard premises for cross-connection potential under the CCCPH, and now require installation of BPAs on each individual service connection within the complex. Depending on the number of units within the multi-family complex, capital costs associated with this new requirement may create a financial hardship for customers.

GATEWAY COMMONS

Gateway Commons is not the only condominium complex that will be impacted by the CCCPH, but it presents a notable example of the implications of the new requirements. Staff presented details of known backflow at Gateway Commons to the Board at the April 18, 2023 meeting.

In summary, the development contains fifty-seven separate four-unit buildings, each identical, with four water meters for the individual unit owners and a fifth water meter that serves the common laundry facility and provides hot water to the units through a shared water meter. In some cases, the irrigation system to common areas is also served by this shared water meter. There are a total of 285 water meters in the Gateway Commons development.

While District staff had been working toward implementing a site-specific cross-connection control plan for Gateway Commons based on previously documented observations of backflow and the continuing cross-connections site-wide, under the CCCPH, the District will be requiring that a BPA be installed at each individual meter. Preliminary estimates for only the capital costs associated with installation of 285 BPAs is upwards of $1,500,000.

Staff recently re-engaged the Homeowners Association (HOA) of Gateway Commons and has requested that they prepare and submit a plan of action to comply with the CCCPH by November 15, 2024 that contains, at a minimum, details for funding the work, timeline for implementation, and design details for a typical installation in compliance with existing District standards. Staff believes that implementation is more feasible at the HOA level, however there has been a distinct the lack of progress by the HOA since discussions began in early 2022. Should progress continue to stall, staff would consider an individual customer approach which would be more time consuming and burdensome on both staff and the customers.

CONCLUSION

The State Water Board's CCCPH represents a step in the right direction for ensuring a PWS's drinking water distribution system will not be subject to the backflow of liquids, gases, or other substances. However, it is not without implications to the District's operational procedures and workload. Staff is in the process of modifying the appropriate documents, handbooks, and Regulations to comply with the CCCPH, and will continue to work diligently to maintain the high quality of drinking water within our system(s).

Staff will also develop educational material for those customers that are soon to be impacted by these changes so that they better understand the additional costs and ongoing responsibilities.

ATTACHMENTS

None