UCLA Luskin Center for Innovation

Tap Water Quality and Distrust in Los Angeles County:

Strategies to Address Premise Plumbing

January 2024

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AUTHORSHIP

This report was produced by the UCLA Luskin Center for Innovation (LCI).

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As a land grant institution, the UCLA Luskin Center for Innovation acknowledges the Gabrielino and Tongva peoples as the traditional land caretakers of Tovaangar (Los Angeles basin, Southern Channel Islands) and that their displacement has enabled the flourishing of UCLA.

DISCLAIMER

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TABLE OF CONTENTS

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Executive Summary

The State of California recognizes that "every human being has the right to safe, clean" drinking water coming out of their taps as part of its legislated Human Right to Water. How individuals perceive the safety of their drinking water influences whether they reach for the tap to quench their thirst, or an alternative, such as bottled water or a sugary drink. In turn, distrust of drinking water quality and subsequent reliance on alternative beverage sources can adversely impact health, welfare, and the environment.

In the Los Angeles area there is a contrast between what drinking water quality regulatory data tell us and what people perceive about the region's tap water quality. For instance, our recent performance guide for community water systems (CWS) in Los Angeles County found that most provide sufficient, safe, and relatively affordable water to their customers (Pierce and Gmoser-Daskalakis, 2020). At the same time, however, we have documented that the Los Angeles-Long Beach metropolitan area has one of the highest rates of tap water distrust in the United States (Pierce et al., 2021).

There are a number of different, and sometimes overlapping, reasons people do not trust their tap. A recent study we performed in the City of Los Angeles (L.A.) found that 74% of verified residential complaints about water quality contamination originated not from drinking water system pipes, but from causes within premise plumbing — the pipes that move water from a distribution network to a tap point in a home, school, or business. Thus, premise plumbing problems appear to be a particularly understudied driver of tap water distrust. As shown in Figure 1 below, any change to water quality, including contamination, introduced within premise plumbing is the legal responsibility of the property owner or landlord rather than a water system or tenant, which is often not recognized by landlords or tenants. But experience clearly shows that this issue is not fully addressed, and may not

be addressable, by landlords on their own — they may need support from government agencies, water system operators, and/or advocacy organizations.

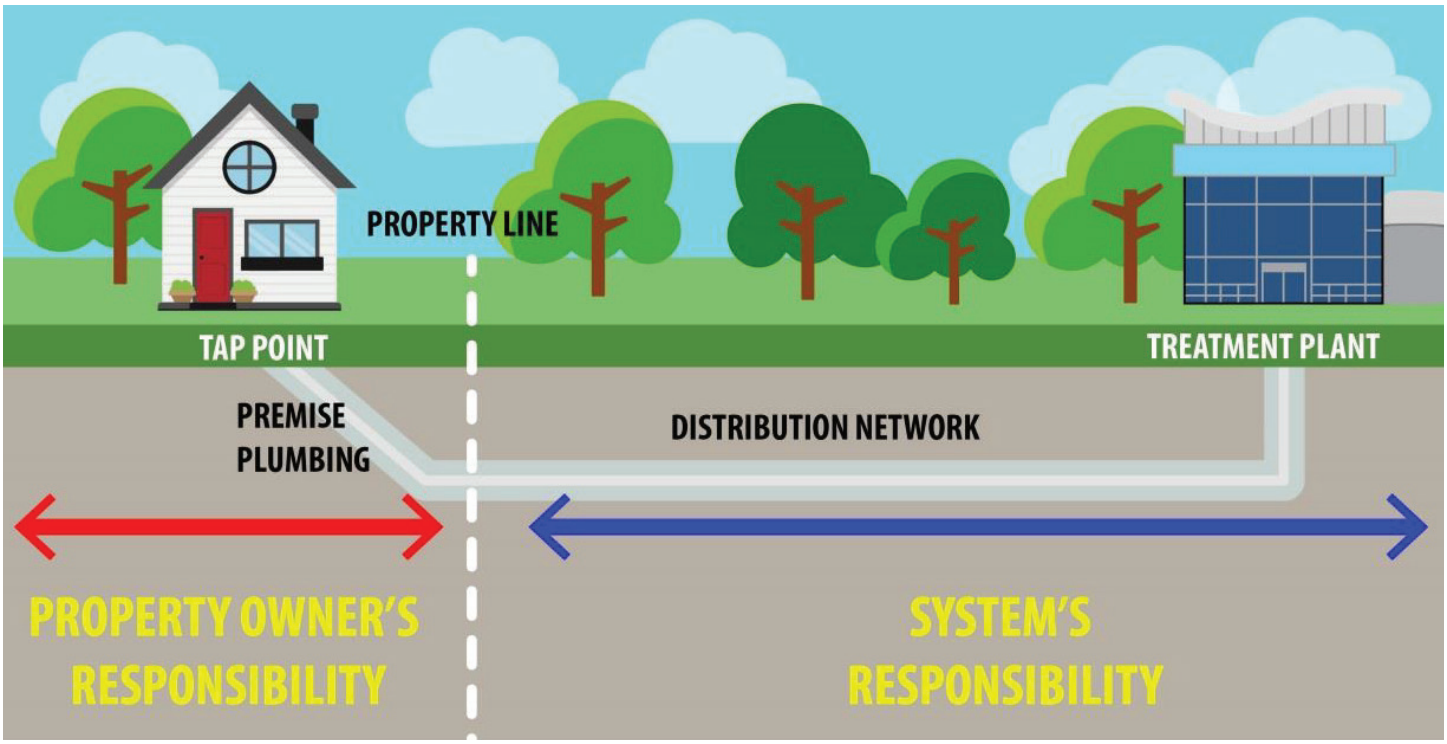
This report and its associated policy briefs were commissioned by the Los Angeles County Chief Sustainability Office to identify ways to address premise plumbing issues. This research and recommendations help provide further direction to the county's efforts to implement the Los Angeles Countywide Sustainability Plan (CSO), specifically Actions 19, 21, and 23. These actions fall under Goal 1 to achieve "resilient and healthy community environments where residents thrive in place."

We do so by recommending the following 22 actions for Los Angeles County and specific departments within it; the State of California and specific agencies within it; landlords; community water systems; and advocacy organizations. The list is organized by a primary interested party, but other entities may use these strategies to address premise plumbing issues. The policy briefs also include background information, the relevant codes, and best practices for each recommendation for additional guidance.

While the report can be read as a whole, each brief is a standalone, digestible action guide for each interested party. Within each brief, we list the most feasible recommendations first, and those that are more aspirational are listed after. We encourage independent actors to use the strategies outlined to compel the parties named to advance solutions.

In addition to conducting our own research, we solicited input from 34 individuals representing 19 organizations to add to and refine the recommendations. Only with the continued support of partners in implementing these recommendations can we advance the safety of and trust in tap water in Los Angeles.

Figure 1: The flow of water from water system treatment plant to the tap



Recommendations

Los Angeles County (5)

1. Use existing lead poison monitoring capability to test water more frequently
2. Advocate for state and federal reforms
3. Develop a direct financial assistance model for small-scale landlords
4. Update habitability code to ensure landlords replace pipes
5. Play a similar administrator role as with the Sativa Los Angeles County Water District in special cases

State of California (6)

6. Improve enforcement and compliance with existing standards
7. Encourage regulated water systems to create new reporting that helps customers differentiate when tap concerns might be due to the distributional system versus premise plumbing issues

The state can also require water systems to:

8. Require water systems to notify their customers on how to file tap quality concerns
9. Require water systems to promptly issue a public notice to their customers after any water quality incident, as well as in advance of maintenance and repairs, including planned outages
10. Require water systems to sample, test for, and publicly report on water samples for secondary standards within the distribution system, well, and treatment plants
11. Require water systems to include customer complaint information about the color, odor, taste, and turbidity of the tap water within or as a companion to the consumer confidence reports

Water systems (5)

12. Establish effective methods to communicate with customers beyond regulatory responsibilities
13. Test water and provide timely, on-site assessments for customers at the tap
14. Access funding from existing small programs
15. Facilitate on-water bill solutions for plumbing upgrades
16. Advocate on behalf of customers to the state and landlords

Landlords (3)

17. Respond to tenant tap water complaints in a timely manner to support tenant trust and health
18. Advocate for financial assistance for small-scale landlords from cities or counties
19. Cooperate with state and local reforms

Advocacy organizations (3)

20. Facilitate tap water testing beyond what is routinely provided by local water systems and regulators
21. Serve as a communication intermediary between residents and other interested parties
22. Advocate for permanent changes to city, county, and state codes and programs to support trust in premise plumbing

Photo credit: Robert So /iStock

Introduction to Tap Water Distrust in Los Angeles: Why Focus on Premise Plumbing

Prevalence and Consequences of Tap Water Distrust

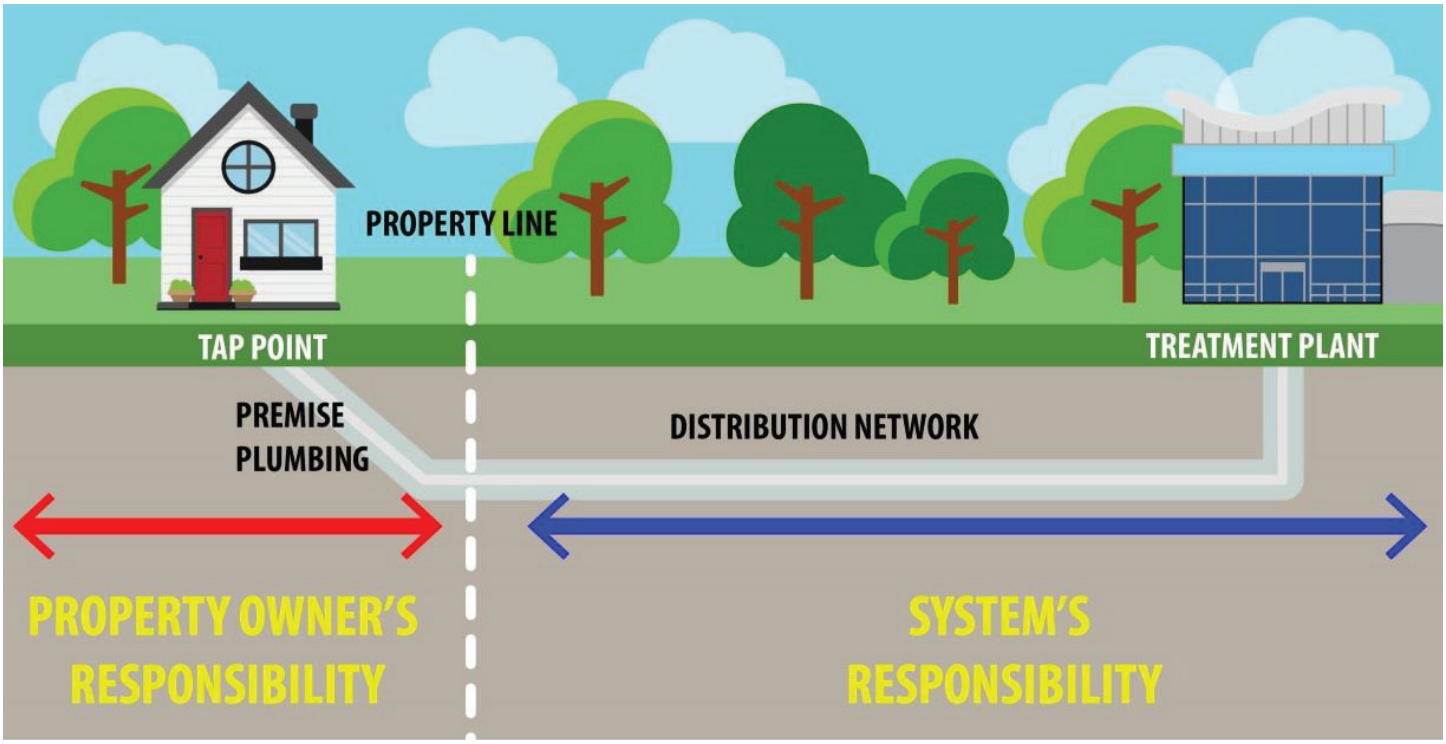
Los Angeles County's 10 million residents are served by 200 separate community water systems (CWS) whose water quality is regulated by the U.S. Safe Drinking Water Act (SDWA) and associated state and local laws. CWS are the fundamental building blocks of California's water supply network performing an essential role in providing clean, safe drinking water supplies to most households, businesses, schools, and other establishments.

These systems come in all shapes and sizes in the county, ranging from the Los Angeles Department of Water and Power (LADWP), which serves about 4 million people, to dozens of individual mobile home park systems, some of which serve as few as 25 people.

Paradoxically, in the Los Angeles area there is generally a contrast between what CWS water quality regulatory data tell us and what is perceived. For instance, our recent performance analysis for CWS in L.A. County found that most provide sufficient, safe, and relatively affordable water to their customers (Pierce and Gmoser-Daskalakis, 2020). However, we also documented that the Los Angeles-Long Beach metropolitan area has one of the highest rates of tap water distrust in the United States (Pierce et al., 2019).

There are many different drivers of tap water distrust. In some cases, distrust may be the result of resident misconception or mistake. However, it is not inherently true that water which is proven to be clean and safe while in the water system remains so until it reaches the residents' taps. Assuming this to be the case, as some Los Angeles County researchers have done, can be harmful (Family et al., 2019), creating the risk of dismissing well-founded concerns and generating further distrust.

Figure 1: The flow of water from water system treatment plant to the tap



Households most likely to distrust their tap water are lower-income, households of color, and foreign-born households (Jaffee, 2023). Those who distrust their tap water are more likely to rely on bottled water or sugary bottled beverages to drink, cook, and bathe (Roquemore, 2019; Javidi and Pierce, 2019), creating a financial burden for those with limited budgets. Furthermore, tap water alternatives can contribute to health problems, such as dental cavities due to sugar content and lack of fluoridation, as well as environmental problems, such as plastic pollution. Reliance on these alternatives, whether due to well-founded or misplaced distrust, has direct negative consequences for community physical and mental health, economic welfare, and broader society-state relations, not to mention environmental impacts.

Complexity of Drinking Water Quality Impacts and Responsibilities

Part of the confusion and distrust regarding tap water is due to the complexity and nuance of water quality science and regulation. The SDWA sets standards for drinking water quality served through public water systems to homes across the country. This law, enforced by the U.S. Environmental Protection Agency (EPA), classifies potential contaminants into categories. Each public water system is required to test for nearly 100 potentially health-harming contaminants and proactively treat the water to ensure all contaminants are below legal primary "maximum contaminant levels" (MCLs) and to immediately treat the water if it exceeds an MCL. Other "emerging" contaminants, such as PFAS and hexavalent chromium, do not yet have fully established regulatory MCLs, but these are pending. Fear of unregulated and unmonitored contaminants can have bigger impacts on tap water distrust than information about long-standing contaminants with more severe health impacts.[1]

Adding to the complexity, research suggests that consumers are more likely to distrust their tap water when it has deficiencies detectable by the five senses (i.e., strange taste, odor, or color) than when it violates MCLs (Spackman and Burlingame, 2018; Pierce and

[1] For instance, see Marcus, M., & Mueller, R. (2023). Discovery of Unregulated Contaminants in Drinking Water: Evidence from Pfas and Housing Prices. Available at SSRN 4554465.

Lai, 2019). The SDWA addresses aesthetic (i.e., taste, odor, color) characteristics of drinking water by setting National Secondary Drinking Water Regulations, or "secondary standards." Although the NSDWRs outline "secondary maximum contaminant levels" (SMCLs) for 15 contaminants, compliance is not mandatory. This leaves households with potentially discolored, smelly, or bad-tasting water that they are told is safe but that they quite reasonably assume is unsafe and thus do not use for most purposes.

There are also common misunderstandings about who is responsible for the quality of the tap water in a home, school, or business. Water generally is piped from a raw source to a treatment plant, then through a distribution network to a customer's property, where end users access the water from the tap at a home, school, or business (called a tap point; see Figure 1). The pipes that move water between a system's distribution network to a tap point, as well the pipes and fixtures within a house or apartment building, are collectively called on-plot, private, or most commonly "premise plumbing."

Water quality within the utility distributional network is the responsibility of the regulated community water supplier. Contamination introduced within premise plumbing is the responsibility of the property owner or landlord — a legal and practical distinction often not recognized by landlords or tenants.

Most regulated contaminants are unlikely to enter the water system after treatment where it is most effective to test for those contaminants. However, some types of contaminants, such as lead and rust, can come from the distribution system or premise plumbing. Currently, mandated consumer confidence reports are the primary way water systems formally communicate water quality results directly to end users. But these reports are largely based on water quality at the treatment plant rather than at the tap point — and therefore they may not address consumers' concerns.

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Causes: Premise Plumbing Issues Can Impact Household Distrust of Tap Water

After leaving a treatment plant, water enters and remains in the distribution network until it reaches a customer's property line and premise plumbing. Insufficiently maintained premise plumbing may impact the safety, color, smell, and taste of water delivered by a CWS to a residence. These pipes are not technically part of a CWS, so widespread public data on any issues introduced there is limited or nonexistent. Currently, issues that occur in premise plumbing are, at best, investigated and addressed by property owners.

A recent, one-of-its-kind study we performed using data from LADWP in the City of Los Angeles (L.A.) found that the vast majority (74%) of verified residential complaints about water quality contamination originated within premise plumbing (Pierce et al., 2020). This may be an undercount of problems, as multifamily residents' concerns may not be represented in existing data and this data was collected only for the city, not the county. It is safe to say that premise plumbing issues, when not addressed, may contribute to high rates of household distrust of tap water.

The material and age of premise plumbing pipes affect the potential for corrosion and mobilization of lead. Pipe age is typically correlated with the age of a building: the older the building, the older the pipes (Pierce, González, and Amstutz, 2020). Because pipe materials and age vary inequitably in Los Angeles County, premise plumbing issues also vary inequitably across the county and have social implications. In fact, a 2018 report found that in the city there were more water quality complaints from older properties and those that had not been sold for a longer time, which suggests that the age of interior pipes plays a role in water quality (Auger-Velez et. al, 2018).

The Complicated Legal Environment of Premise Plumbing Has Held Back Solutions

Every resident of Los Angeles has the right to clean, safe drinking water. But some communities do not trust their tap water because it is unsafe to use, while others do not trust it even though it is safe. The first order concern is where water is unsafe. Addressing MCL compliance issues soon, including PFAS, is key. Although working with the 200+ CWS and 88 cities across the county is a big task and hard to move the needle on, there are more straightforward pathways of action and funding sources for MCL compliance solutions than there are for "secondary" contamination or trust issues which cannot be traced back to MCL compliance.

Those interested in supporting trustworthy, equitable access to safe water where MCL violations are not present must navigate a complicated network of interested parties[2] and associated responsibilities. Households, policymakers, and advocates' abilities to identify and respond to premise plumbing issues vary among property owners and renters.

Renters make up 54% of Los Angeles County households, but have little to no recourse to address aesthetic tap water issues caused by premise plumbing. Considering the county's housing crisis, there is pressure on tenants to avoid confronting these issues with landlords for fear of eviction or rent hikes to cover costly plumbing repairs.

[2] We use the term "interested parties" to avoid using "stakeholder." See *Reflecting on our Language: Stakeholder*

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The Critical and Unique Focus of This Report and Policy Briefs

This report and its associated briefs were commissioned by the Los Angeles County Chief Sustainability Office to provide direction in the county's efforts to implement the Los Angeles Countywide Sustainability Plan, specifically Actions 19, 21 and 23. These actions fall under the broader Goal 1 to achieve "resilient and healthy community environments where residents thrive in place" (Los Angeles County CSO, 2019).

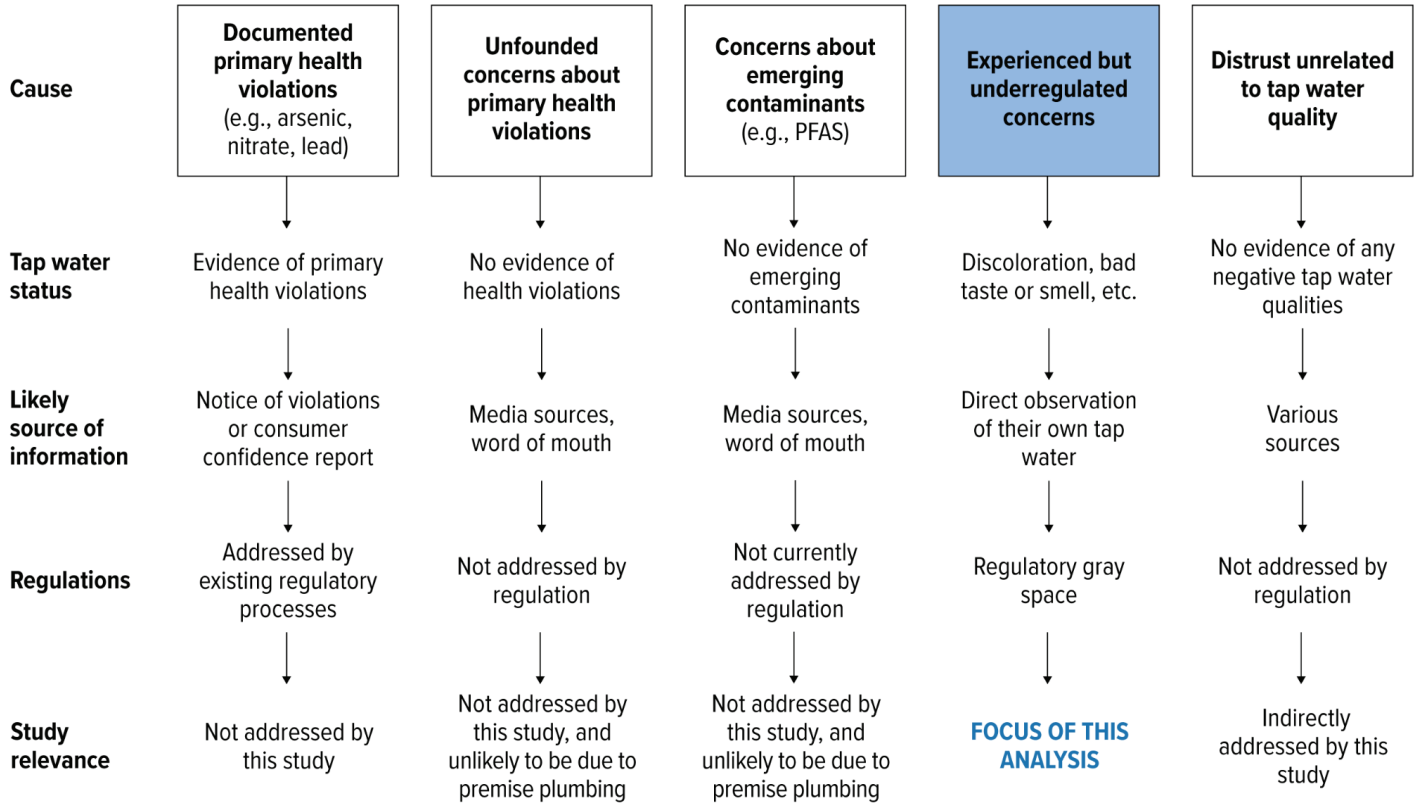
As documented above, we have previously carried out a considerable amount of engaged scholarship detailing the prevalence, causes, and consequences of tap water distrust in Los Angeles County, including the special role of premise plumbing. As Figure 2 below illustrates, there are numerous complex causes for tap water distrust, some of which are clearly addressed by regulatory processes, and others where the legal responsibility is more murky.

In this report and the associated standalone policy briefs, we focus on potential solutions in instances where premise plumbing is a possible cause of distrust across the county, but water quality does not exceed the equivalent of a primary MCL violation.

We emphasize, however, that there are instances where premise plumbing is a cause of distrust and water quality does exceed the equivalent of primary MCL violation standards. In such cases, there is no consistent source of verified information and, thus, testing at the tap and working with regulatory authorities directly are essential.

Below, we recommend 22 actions for five interested or potentially responsible parties to address residents' premise plumbing concerns: Los Angeles County and specific departments within it; the State of California and specific agencies within it; landlords; community water systems; and advocacy organizations.

Figure 2: Common causes of tap water distrust



The focus on these five interested parties does not mean that no other individuals or organizations have a necessary or potential role in premise plumbing solutions. However, we focus on these five groups given how often they have been identified as hindering or facilitating previous solutions. The roles of these groups also overlap and interact.

We also recognize the vital role of individual residents in premise plumbing solutions. As noted above, residents are inevitably at the front lines of experiencing and identifying premise plumbing problems. We do not include a designated policy brief on tenant or single homeowner roles and responsibilities because it is not an effective way to motivate consumer action, and because tenants should not be considered primarily responsible for fixing tap trust issues.

While the report can be read as a whole, we also designed each brief to be a standalone, short product for each interested party. We have written each brief as if the party addressed is genuinely interested in being part of the solution to residents' tap trust and premise plumbing problems. However, we fully acknowledge that not every party has equal willingness to act.

For instance, in past work, we have not found many landlords (private or public) to be very responsive to complaints or proactive to premise plumbing concerns unless public agencies compel them to do so. While there are nominal legal means in housing habitability codes to compel landlords to take action, advocates and even housing regulators, at times, hesitate to use these tools in California due to retaliation and eviction concerns.

Methodology for Premise Plumbing Briefs

Our methodology for developing actionable recommendations for each interested party was largely inductive. The recommendations were formulated based on our previous engaged scholarship with community groups, utilities, and regulators across California, including our Premise Plumbing Working

Recommendations

Los Angeles County (5)

1. Use existing lead poison monitoring capability to test water more frequently
2. Advocate for state and federal reforms
3. Develop a direct financial assistance model for small-scale landlords
4. Update habitability code to ensure landlords replace pipes
5. Play a similar administrator role as with the Sativa Los Angeles County Water District in special cases

State of California (6)

6. Improve enforcement and compliance with existing standards
7. Encourage regulated water systems to create new reporting that helps customers differentiate when tap concerns might be due to the distributional system versus premise plumbing issues

The state can also require water systems to:

8. Require water systems to notify their customers on how to file tap quality concerns
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Landlords (3)

17. Respond to tenant tap water complaints in a timely manner to support tenant trust and health
18. Advocate for financial assistance for small-scale landlords from cities or counties
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Advocacy organizations (3)

20. Facilitate tap water testing beyond what is routinely provided by local water systems and regulators
21. Serve as a communication intermediary between residents and other interested parties
22. Advocate for permanent changes to city, county, and state codes and programs to support trust in premise plumbing

Group, which convened from 2017 to 2020. Given the dearth of action in this space, we also drew on other examples in the environment-housing advocacy space, both published and unpublished. We generally tried to maintain balance in the number of recommendations in each brief, although some interested parties clearly have more avenues for action than others. We also listed those recommendations that we deemed most feasible first within each brief, while those that were more aspirational were placed after.

We also directly solicited feedback and input from reviewers on each brief, to add to as well as refine our existing list of recommendations. As part of this inductive process, we sent out draft briefs to partners and potential readers in the summer of 2023 for feedback to ensure the briefs were accurate and implementable. Thirty-four individuals representing 19 different organizations provided comments on at least one of the briefs (see Acknowledgments section on page 2 of this report). Every brief received comments from at least three different organizations. We are incredibly grateful for the feedback and comments received, and we attempted to incorporate every comment into this final report.

Table 1: Number of people and organizations that provided feedback on policy briefs

Brief	Number of Commenters	Number of Organizations
Los Angeles County	6	3
State	7	5
Water Systems	4	3
Landlords	12	6
Advocacy Organizations	11	6
TOTALS*	**34**	**20**

* Some commenters and organizations provided feedback on multiple briefs.

The full list of our recommendations, sorted by the primary interested party, follows. Although some recommendations can apply to multiple interested parties, we assign recommendations to the interested party we think has the most direct responsibility and capability to complete the recommendation.

Table 1 identifies how many people and organizations reviewed each brief. Some commenters and organizations provided feedback on multiple briefs.

POLICY BRIEFS

Los Angeles County

State of California

Community Water Systems

Landlords

Advocacy Organizations

Role in premise plumbing solutions

Los Angeles County:
Role in Premise Plumbing Solutions

Summary

Through its Public Works Department, the County of Los Angeles directly operates 10 drinking water systems, especially in unincorporated areas, and has the capability to collect and report data regarding water quality and tenant rights.[3] Los Angeles is also one of 30 counties delegated the authority by the State Water Resources Control Board (Water Board) to regulate certain small public water systems within its boundaries. In addition, the county manages the property tax collection and special assessment mechanism, which can be a financing platform for infrastructure upgrades to proactively assist in addressing premise plumbing issues. Premise plumbing is the water pipes that connect from the distribution network to the tap, as well the pipes and fixtures within a house or apartment building.

County policymakers often become informally held responsible for addressing hot spots of unsafe tap water and widespread tap water distrust, whether or not they operate the responsible water system. This was the case in 2019 with the Sativa Los Angeles County Water District (Sativa), which infamously failed to provide safe drinking water in Southeast Los Angeles County, was taken over by the state and county, and eventually dissolved (see recommendation 5).

With more funding and staff support, the Los Angeles County Department of Public Health (DPH) could proactively work with regulated water system operators to collect and publicly disclose an expanded list of tap quality complaint data. The Los Angeles Department of Water and Power (LADWP) serves as a model for this type of effort. This type of proactive management allows interested parties to better address emerging water quality concerns before they lead to widespread tap distrust. The county's Chief Sustainability Office and the new Office of Environmental Justice and Climate Health exist to support and guide the county on environmental equity solutions and could support these efforts with more staff and funding.

Recommendations

The county can help advance solutions to premise plumbing concerns by implementing the following:

1. **Use existing lead poison monitoring capability to test water more frequently**
2. **Advocate for state and federal reforms**
3. **Develop a direct financial assistance model for small-scale landlords**
4. **Update habitability code to ensure landlords replace pipes**
5. **Play a similar administrator role as with the Sativa Water District in special cases**

[3] See Community Water Systems in Los Angeles County and California Code of Regulations Title 22 § 64211.

Detailed Recommendations

RECOMMENDATION 1

Use existing lead poison monitoring capability to test water more frequently

▶ **Background:** Lead exposure in drinking water causes severe physical and mental health harm, particularly for children. A 2017 California bill requires water systems serving schools built before 2010 to test for lead in their tap. In 2018, the state appropriated $5 million to the Water Board to test and remove lead in drinking water and provide technical assistance to licensed child care centers. As of 2023, certain California child care facilities must test for lead every five years.[4]

DPH maintains a Childhood Lead Poisoning Prevention Program to address lead poisoning incidents.[5]

▶ **Related Code:** The Countywide Sustainability Plan calls for the Chief Executive Office and Local Agency Formation Commission to "develop a program to map, monitor, address, and alert the public to drinking water quality issues that originate from on-site and systemic plumbing issues, incorporating reporting from water agencies as well as crowdsourcing" and "Complete an assessment of the region's drinking water systems to identify resiliency to drought and shocks, as well as risk of water quality issues due to aging infrastructure, deferred maintenance, etc." However, DPH has no direct authority or funding to compel water system operators to complete additional testing beyond what is currently required. (For more information, see our State of California Policy Brief.)

▶ **Best Practices:** The county could expand on the current testing programs for lead in drinking water to include other contaminants, be done more frequently, and extend beyond schools and day care centers. Lessons from the implementation of the statewide day cares program are outlined in a previous LCI report and can inform future program iterations. This expansion is in line with the sustainability plan, which calls for the county Chief Executive Office to "collaborate with partners to expand lead testing of drinking water in schools and day care facilities," as well as community recommendations from the Greater Los Angeles County Community Strengths and Needs Assessment.

The county can also align sustainability plan Action 19 with community-led efforts to promote tap water testing and drinking water quality education. For instance, WaterTalks is developing a local Regional Tap Water Quality Testing Program that can serve as a model for future work. The county can also directly support a program like the tap water testing program, which was funded by the state and evaluated by LCI in the Bay Area.[6]

RECOMMENDATION 2

Advocate for state and federal reforms

▶ **Background:** As detailed more fully in the State of California Policy Brief, the Water Board's Division of Drinking Water (DDW) implements and enforces the federal and state Safe Drinking Water Acts, monitors drinking water quality, and issues permits to public water systems throughout the state. DDW is the direct regulator for all public water systems in California with 200 connections or more. The county regulates all public water systems within its boundaries with fewer than 200 connections.

▶ **Related Code:** California law describes the Implied Warranty of Habitability but does not include a specific requirement for *potable* water, just "hot and cold running water."

California law allows county boards of supervisors to use county service areas as a method to finance and provide needed public facilities and services.

California law gives the Water Board the authority to

[4] California Health & Safety Code 1597.16 and EWG News Release

[5] See DPH Childhood Lead Poisoning Prevention Program homepage and Los Angeles County webpage.

[6] See forthcoming SF Bay Area tap trust report from the Bay Area Disadvantaged Community and Tribal Involvement Program https://www.sfestuary.org/disadvantaged-community-and-tribal-involvement-program/

enforce the federal and state Safe Drinking Water Acts; but there is no law that says this enforcement must be proactive for secondary MCL exceedances that impact odor, taste, turbidity, or color conditions in water system distribution networks (i.e., dedicate staff to address existing standards as soon as possible, focus on addressing existing standards first and foremost).[7]

▶ **Best Practices:** The county could work with the Water Board's Office of Legislative Affairs, and state senators and assemblymembers to advocate for new and revised laws that require the Water Board to ensure water systems take immediate corrective actions to address premise plumbing issues. This could be included in the county's legislative priorities under the affordable housing, infrastructure investments, or environment and sustainability sections. For instance, the Water Board does not test tap water or prioritize areas where tap water technically meets primary standards. State reforms could provide funding and legal mandates for DDW to consider secondary standards and for system operators to run their own tap water testing programs that produce data the Water Board can use. The county could consistently coordinate with DDW and include a water-specific listed option for complaints to better enforce existing standards. The county could advocate for tenants to have the right to take legal action against landlords over habitability issues regarding premise plumbing. This right would give tenants another tool to ensure corrective actions are taken and may encourage landlords to respond to tenant complaints in a timely fashion.

RECOMMENDATION 3

Develop a direct financial assistance model for small-scale landlords

▶ **Background:** To successfully address tap water distrust due to premise plumbing contamination, more funding is needed. For low-income rental housing, a potential solution is to develop public financial assistance programs to incentivize landlords to carry out plumbing upgrades. The county can be a uniquely helpful partner by creating a designated funding program or legally authorizing local programs to overcome concerns regarding the gifting of public funds to private property owners. Past missteps by similar programs designed to upgrade in-home energy infrastructure for low-income residents suggest these programs must be carefully constructed.

▶ **Related Code:** The Countywide Sustainability Plan calls for the County Chief Executive Office to "provide support for small water systems to access State financing mechanisms, and advocate for development of new financing mechanisms to repair water infrastructure and/or incentives for consolidation, and ensure rates are kept affordable" and "advocate for the development of a low-interest financing mechanism for property owners to replace leaky, corroded, and/or unsafe pipes and fixtures."

▶ **Best Practices:** There are a few financing programs that can address premise plumbing. For instance, Halifax, Canada, provides property owners low-interest loans to replace private lead laterals; Wisconsin provides funding for private lead service replacement; and the U.S. Department of Agriculture provides loans and grants to low-income homeowners to remove health and safety hazards in their home (i.e., old pipes).[8]

Deferred Special Assessments is a potentially replicable financial assistance model the County Assessor's Office could use to support premise plumbing upgrades by landlords. In California, assessment districts are a commonly used tool to finance improvements when no other source of money is available (California Tax Data, n.d.). Cities or counties can form a district and finance improvements to private property, for which the owners defer repayment until they sell the property. Local governments, including Los Angeles County, that also run water systems could explore potential avenues for program models to assist households in paying for infrastructure upgrades in small installments on their water bill, perhaps

[7] California Health & Safety Code 116470(b); California Health & Safety Code 116270 et. seq.; California Health & Safety Code 116470

[8] See USDA Single Family Housing Repair Loans & Grants website, Wisconsin Private Lead Service Line Replacement Program webpage, and the Environmental Defense Fund's State Efforts webpage.

equivalent to what households would typically pay for bottled water for the month.

Grants or Loans from the Public Works Department to water utilities could support efforts to fix premise plumbing problems. In addition, the county can seek more currently available relevant federal programs, like the U.S. Department of Agriculture's Single Family Housing Repair Loans or Grant. Most customer premise plumbing concerns are too low cost to warrant the creation of a grant program directly to households. However, water service systems, especially smaller ones with fewer economies of scale or administrative framework in place, can benefit from funding to increase customer engagement and offer on-bill financing programs.[9] Funding could specifically focus on communities where residents consume large amounts of replacement water because they distrust their tap water. While there is no public source of community-specific data on tap replacement water reliance, identification of these communities in Los Angeles could be informed by community-based organizations' knowledge as well as potentially by Nielsen bottled water purchasing data. The county could work with the Water Board and advocacy organizations that are part of WaterTalks to better identify which communities on which to focus. This funding program can start with a pilot period so that policymakers can evaluate its impact on tap water trust and affordability.

Turf Replacement Programs, such as the city of L.A.'s program, can be used as a cost-effective model to allow commercial and residential customers to receive a rebate from their water system when they replace their lawns with less water-intensive landscaping. LADWP's Home Energy Improvement Program could also serve as a model; it offers customers free products and services to improve the energy and water efficiency of their home via upgrades and retrofitting.

The only known financing programs to fix premise plumbing issues focus on lead, an issue that is explicitly called out in federal and state water regulations, and are not operated by the county. For instance, the Water Board intends to spend approximately $609 million of federal Infrastructure Investment and Jobs Act funds to build or upgrade water infrastructure, address emerging contaminants in drinking water, and replace lead service lines and connectors. In addition, the board has a $130 million a year fund for 10 years to help water systems provide an adequate and affordable supply of safe drinking water. Part of that funding will go toward implementing regional programs that address drought-related and/or contamination issues for low-income households; these funds could potentially support premise plumbing issues in Los Angeles County.[10]

RECOMMENDATION 4

Update habitability code to ensure landlords replace pipes

▶ **Background:** The DPH manages code enforcement related to substandard living conditions for unincorporated Los Angeles County, as well as by contract for nearly all cities in the county. The county is currently undergoing an effort to adopt and deploy stronger code enforcement tools to protect tenants.

▶ **Related Code:** The county housing code is available online.

▶ **Best Practices:** The county could continue to work to implement its Rental Housing Habitability Program for unincorporated Los Angeles County to ensure codes are enforced for water violations, including leaving tenants without running water for extended periods.[11] This program could incorporate the recommendations made by Strategic Actions for a Just Economy and other organizations, namely to centralize code enforcement for rental units, prevent "renovictions" (renovations that lead to tenant

[9] See Turf Replacement Program Impacts on Households and Ratepayers.
[10] See California Health & Safety Code 116766 and Water Board County-wide and Regional Funding Programs webpage.
[11] See SAJE blog and Rental Housing Habitability Program website.

evictions) and adopt plans and programs to hold landlords accountable.[12]

The county could also update habitability codes to require that landlords communicate with tenants simply and in multiple languages about water quality (i.e., how to file tap water quality concerns, sending out time-sensitive notices about flushing or actions that will temporarily affect tap water access or quality).

RECOMMENDATION 5

Play a similar administrator role as with the Sativa Water District in special cases

▶ **Background:** Water quality concerns, including premise plumbing issues, at Sativa sparked outrage and led to a change in governance in 2018. Sativa was abolished, and the state and then DWP took over management and eventually sold it to the Suburban Water Company. Although DPH has no authority to issue correction notices and no current program to investigate complaints on large public water systems, the county's willingness to be the first interim administrator for Sativa allowed for progress to be made toward providing customers with safe drinking water.

▶ **Related Code:** California Health & Safety Code 116687 allowed the state to remove elected water district members and appoint the county to take over Sativa.

The Water Board's SAFER Drinking Water Program funds water system administrators to provide "technical, managerial, and/or financial expertise to struggling water systems."

▶ **Best Practices:** The county could continue to serve as an administrator for failing water systems when needed to ensure premise plumbing issues are addressed in a timely manner. The county likely needs special authority to recover administrative costs. Once a system is ready to be consolidated, or joined with an existing system, the county could ensure consolidations maintain the governance type of water systems that local communities prefer.

[12] See Recommendations to Improve Los Angeles County's Residential Code Enforcement, We're Not Going Back: Recommendations for Countywide Post-Pandemic Tenant Protections in Los Angeles, and Decarbonizing California Equitably report.

State of California:
Role in Premise Plumbing Solutions

Summary

The State of California, primarily through the State Water Resources Control Board (Water Board), serves as the regulator of drinking water systems and the operator of many funding programs to help systems comply with the federal Safe Drinking Water Act and associated state laws. The Water Board thus has an important role in assisting residents in identifying and addressing premise plumbing issues. However, some of the board's potential to regulate requires additional authorities and responsibilities to be granted by the state legislature.

Recommendations

The state, and particularly the Water Board's Division of Drinking Water (DDW), can help advance solutions to premise plumbing concerns by implementing the following:

1. **Improve enforcement and compliance with existing standards**
2. **Encourage regulated water systems to create new reporting that helps customers differentiate when tap concerns might be due to the distributional system versus premise plumbing issues**

The state can also require water systems to:

3. **Notify their customers on how to file tap quality concerns**
4. **Promptly issue a public notice to their customers after any water quality incident, as well as in advance of maintenance and repairs, including planned outages**
5. **Sample, test for, and publicly report on water samples for secondary standards within the distribution system, well, and treatment plants**
6. **Include customer complaint information about the color, odor, taste, and turbidity of the tap water within or as a companion to the consumer confidence reports**

Detailed Recommendations

RECOMMENDATION 1

Improve enforcement and compliance with existing standards

▶ **Background:** DDW "implements and enforces the federal and state Safe Drinking Water Acts, monitors drinking water quality, and issues permits to the roughly 7,400 public water systems throughout the state." It is the direct regulator for all public water systems in California with 200 connections or more and all public water systems in 28 of California's 58 counties. Public water systems' technical, managerial, and financial capacities vary greatly and impact their ability to comply with existing standards. For instance, larger public water systems may be better able to comply with existing standards because they can more easily staff and pay for required maintenance and water testing, while smaller, "at-risk" water systems would likely need to pass off costs to their customers. Additionally, pipe materials and age vary inequitably, which means that some systems may have to entirely replace their pipes because they are older, while other systems may not need to do this.[13] However, DDW has some adaptability in its enforcement process to support various types of public water systems.

▶ **Related Code:** California law gives the Water Board the authority to enforce the federal and state Safe Drinking Water Acts. But there is no law that says this enforcement must be proactive for maximum contaminant (MCL) exceedances that impact odor, taste, turbidity, or color (aesthetic) conditions in water system distribution networks.[14] Thirty counties have been delegated the authority by the Water Board to regulate certain small public water systems within their boundaries.

▶ **Best Practices:** DDW, in conjunction with other water board regions, divisions, and offices, must be proactive in enforcing existing standards that are likely to affect tap water trust. This might require hiring more field staff dedicated to this effort. First and foremost, DDW could work collaboratively with other regions, divisions, and offices to ensure that water systems take immediate corrective actions to eliminate any exceedances of MCLs that impact aesthetic conditions in water system distribution networks. Flushing, filtering, re-piping, blending water supplies, etc., may be necessary in these cases. DDW can also ensure water systems that struggle to comply with primary drinking water standards receive additional funding and support through one of its existing programs. The Water Board's SAFER Program specifically outlines priority water systems to fund; these systems' secondary MCL violations could be addressed first.

To improve compliance with existing standards, more targeted funding is needed. For instance, although premise plumbing is the responsibility of property owners, the state could help by creating a designated pilot funding program or legally authorizing local programs to address premise plumbing deficiencies that overcome concerns regarding the gifting of public funds to private property owners. Given that the state has already authorized or funded programs that benefit private property owners and also advance water or energy conservation (i.e., turf replacement), supporting and/or funding programs that have health and affordability benefits stemming from greater tap water trust may not be too much of a stretch beyond current efforts. The state could also change its eligibility rules for certain programs (including SAFER) to offer grants or loans to water systems to support efforts to fix premise plumbing problems in customer households, because most customer premise plumbing concerns are too low-cost to warrant the creation of a grant program directly to households.

Lastly, secondary MCLs are a gray area in terms of enforcement. These laws can be altered to dedicate staff to address existing standards as soon as possible and focus on addressing existing standards first and foremost.

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[13] See How Racism Ripples Through Rural California's Pipes and Torres-Rouff, 2006

[14] California Health & Safety Code 116270 et. seq.; California Health & Safety Code 116470; California Code of Regulations Title 22

RECOMMENDATION 2

Encourage regulated water systems to create new reporting that helps customers differentiate when tap concerns might be due to the distributional system versus premise plumbing issues

▶ **Background:** Customers would benefit from being provided with easy-to-understand information in multiple languages regarding premise plumbing and the common aesthetic indicators of premise plumbing issues.

▶ **Related Code:** California's Safe Drinking Water Act requires water systems to generate certain reporting. However, there are no reporting requirements specific to increasing awareness of premise plumbing issues. There are also no reporting requirements that differentiate customer complaints according to their origin (premise plumbing, the distribution system, or no known cause).

The Dymally-Alatorre Bilingual Services Act obligates state and local agencies to provide some level of language access services to the public. However, it only requires agencies to comply with its terms to the extent funding is available.

▶ **Best Practices:** The state can encourage water systems to create new reporting (to the state and to water system customers) or add a section to their current consumer confidence reports that helps differentiate when tap water concerns voiced to the system were followed up on, as well as whether they were evaluated as problems with the distribution system, premise plumbing, or misperception. Water systems already have this type of reporting for other contaminants of concern that are not primary drinking water standards in the U.S. Safe Drinking Water Act. New regulations could focus on self-reported and verified impacts to odor, taste, turbidity, or color conditions of the water, which are known to impact trust levels.

RECOMMENDATION 3

Require water systems to notify their customers on how to file tap quality concerns

▶ **Background:** As the primary agency for implementing the federal Safe Drinking Water Act in California, the Water Board is responsible for ensuring water systems are operating in compliance and providing safe drinking water to customers.[15] But customers do not necessarily have accessible guidelines on how to file a complaint about their tap water to their water system. There are also no easily accessible guidelines on how to contact the Water Board when a water system is operating in a noncompliant manner.

▶ **Related Code:** Current law states that water systems must issue public notices to their customers within certain time frames in various instances, such as when a primary drinking water standard is not met.[16] However, there are no laws or regulations that dictate a time frame for water systems to respond to resident complaints.

California law mandates the Water Board have designated ombudspersons to assist small businesses and coordinate and facilitate communication on recycled water.[17] However, there are no laws or regulations on how to inform customers to file tap water complaints and the time frames for responses.

The Dymally-Alatorre Bilingual Services Act states that "every state agency which serves a substantial number of non-English speaking people and which provides materials in English explaining services shall also provide the same type of materials in any non-English language spoken by a substantial number of the public served by the agency." A "substantial number of the

[15] Except in California counties which take primary oversight for systems with 200 or fewer connections through local primacy agencies. While about half of California counties do so, the systems overseen by counties serve a very small percentage of the California population.

[16] California Health & Safety Code § 116450-116485; California Health & Safety Code Section 209 116378 and §116455

[17] California Government Code 11148 requires that each agency that significantly regulates small business designate at least one individual to serve as the small business liaison with the role and responsibility of ombudsperson; California Water Code 13552.5

public" is defined as 5% or more of the people served by a state agency. However, the act only requires agencies to comply with its terms to the extent funding is available.

▶ **Best Practices:** Guidance on how to file complaints should be available in all languages that are spoken by more than 5% of customers. Complaints should be simple to file online, in person, and over the phone. Ideally, water systems should provide an initial response within two business days and fully respond to complaints as soon as possible.

The Water Board's Office of Public Participation (OPP) could lead the creation of multilingual guideline documents and webpages for residents on how to advise the Water Board when the water system is operating in a noncompliant manner. The California Public Utilities Commission complaint webpage and the CalEPA complaint system can serve as examples. OPP should follow the guidance described in CalEPA's *Best Practices & Guidance on Language Access Services for Persons with Limited English Proficiency*. DDW and OPP ideally should take no more than 10 business days to respond to resident complaints. DDW could also work with OPP to document complaints received and subsequent actions.

RECOMMENDATION 4

Require water systems to promptly issue a public notice to their customers after any water quality incident, as well as in advance of maintenance and repairs, including planned outages

▶ **Background:** Water systems must issue a public notice of a primary, health-related violation of the California Safe Drinking Water Act within 30 days of a water quality incident.[18] Water systems must also notify the public in advance of maintenance and repairs when there is potential for immediate adverse effects on public health or the public right of way.[19] But no advance notice is required when maintenance and repairs may lead to an exceedance of a secondary standard related to aesthetics such as taste, odor, turbidity, or color. For example, system flushing may result in contamination that impacts the color or odor of the water. Although not considered an immediate health threat, discolored or smelly water could damage clothing washed in this water, damage water filtration devices, and/or contaminate food prepared at retail and commercial facilities. It is an important trust-building measure for water systems to notify affected customers in these circumstances.

▶ **Related Code:** The California Safe Drinking Water Act states that water systems must issue a public notice in various languages for primary drinking water standard violations within 30 days of a water quality incident.[20] But these regulations do not include any public notice requirements for secondary standard violations or maintenance and repairs. They also do not explicitly state that the public notice be easy to read. Furthermore, certain non-English speaking customers must request a public notice in their language, creating an additional barrier to information. The California Code of Regulations requires some water systems to create an operations and maintenance plan, but they do not require any public notice to accompany scheduled maintenance and repairs.

▶ **Best Practices:** In line with consumer confidence report regulations, the California Safe Drinking Water Act regulations could be amended to also require a public notice when there has been a water quality incident in which at least 1,000 residents or 10% of the system's residents are likely to experience short-term exceedances of *secondary standards* for taste, odor, turbidity, or color.

A notice could be delivered to each impacted customer electronically and in person. At minimum, the notice should be sent in all languages that are spoken by 5% or more of customers, in accordance with the Dymally-Alatorre Bilingual Services Act. It should be brief and easy to read, and include the date, time frame, and system staff contact information for further

[18] California Code of Regulations Title 2, Article 18 §64463; California Health & Safety Code § 116450-116485
[19] We use "public right of way" to mean a public highway, road, street, avenue, alley, lane, driveway, place, court, trail, or easement.
[20] California Health & Safety Code § 116450-116485; California Code of Regulations Title 2, Article 18 §64463

questions. With the exception of emergency repairs, if advance notice cannot be provided, the water system could be responsible for all damages caused.

RECOMMENDATION 5

Require water systems to sample, test for, and publicly report on water samples for secondary standards within the distribution system, well, and treatment plants

▶ **Background:** Violations of many secondary standards are based on water sampling from a well or treatment plant site. However, many of the problems with these exceedances are typically introduced or exacerbated in the water distribution system. Taking and reporting on additional water samples within the distribution system will help water systems more quickly identify the source of the issue and take swift corrective action.

▶ **Related Code:** California code requires community water systems to monitor groundwater sources or distribution system entry points every three years and surface water sources or distribution system entry points annually.[21] However, there is no law for water systems to sample water *within* a distribution system. The California Code of Regulations states certain water systems should collect samples from "representative points" in the distribution system, but this could be expanded to include more water systems and provide further clarity on what are "representative points."

▶ **Best Practices:** The state could require and allot funding for water systems to take and test additional water samples within the distribution system to better assess primary and secondary exceedances as well as differences in distribution system versus premise plumbing issues. Taking this extra step is likely to demonstrate that the burden for remediation is largely on the property owner rather than the water system. The state could also encourage water systems to increase funding capacity to take and report on additional water samples, including at rate case proceedings given the water quality and implicit affordability benefit to customers. Testing for additional secondary contaminants can be similar to implementation of the Lead and Copper Rule to the extent possible. The state could also make home testing kits and/or home filtration devices available to residents and advocacy organizations to help identify potential premise plumbing issues.

Lastly, California law describes the Implied Warranty of Habitability, which could be changed to include a specific requirement for *potable* water, not just "hot and cold running water."

RECOMMENDATION 6

Require water systems to include customer complaint information about the color, odor, taste, and turbidity of the tap water within or as a companion to the consumer confidence reports

▶ **Background:** Currently, there is no publicly available list or map of customer complaint results for water systems, and corrective actions are not reported unless an enforcement action is taken by the Water Board. Including summarized complaint information in the consumer confidence report is a way to increase transparency and trust between customers and their water system and can help alert the Water Board of water systems that may need further state support.

For instance, the Los Angeles Department of Water and Power compiles a customer complaint data set that includes each complaint along with accompanying water quality tests and results. This data is made available for analysis and is an example of a fairly progressive practice that can be instituted statewide. However, this data set has not been made public or mapped (anonymously) for public use.

[21] California Health & Safety Code 116470; California Drinking Water-Related Laws; California Code of Regulations Article 16 §64449 and §64449.5

▶ **Related Code:** Consumer confidence reports are required by state law and the California Code of Regulations.[22] But these reports are not required to include a full list of complaints received (i.e., complaints about the color, odor, taste, and turbidity of water). Water Board regulations also include required language for consumer confidence reports, but it could be revised with the EPA so it is more easily understood.

▶ **Best Practices:** Water systems could publish a list or map of all complaints and investigations, and a description of how each complaint was addressed and/or resolved. This information should be standardized to the extent possible and could be included in the consumer confidence report itself or exist as a companion to the report (i.e., a dedicated webpage or a separate report). This information should be easy to use and searchable. The consumer confidence report should be available online and in-print, and be provided in all languages that are spoken by 5% or more of customers, in accordance with the Dymally-Alatorre Bilingual Services Act.

[22] California Health & Safety Code 116470; California Code of Regulations Title 22, Article 20 §64480

Community Water Systems:
Role in Premise Plumbing Solutions

Summary

Community water systems serve as the local water provider for 98% or more of Los Angeles County's population and have the responsibility to collect, report, and share data regarding water quality to the state and to their customers under the federal Safe Drinking Water Act and associated state law.

Public water systems' technical, managerial, and financial capacities vary greatly throughout the state, as does their ability to comply with existing standards. For instance, larger public water systems may be better able to comply because they can more easily staff and pay for required maintenance and water testing, while "at-risk" water systems likely need to pass off costs to their customers. Additionally, many water systems face aging infrastructure and underinvestment that cause challenges in providing safe drinking water.

Although water systems are publicly regulated (unlike private wells) and residents commonly expect that water systems are responsible for their tap water quality, water systems are *not* responsible for on-site or private premise plumbing. Instead, as other briefs cover, property owners are responsible for on-site plumbing. Thus, water systems are not fully responsible for the quality of water coming out of the tap.

Recommendations

Water systems can help advance solutions to premise plumbing concerns by implementing the following:

1. **Establish effective methods to communicate with customers beyond regulatory responsibilities**
2. **Test water and provide timely, on-site assessments for customers at the tap.**
3. **Access funding from existing programs**
4. **Facilitate on-water bill solutions for plumbing upgrades.**
5. **Advocate on behalf of customers to the state and landlords**

Detailed Recommendations

RECOMMENDATION 1

Establish effective methods to communicate with customers beyond regulatory responsibilities

▶ **Background:** The way water quality information is communicated by public agencies is incredibly important because it can empower customers to learn more about and fix their issues, as well as build trust in tap water. Public engagement is a popular strategy for water systems to promote water quality and conservation programs. Expanding on this engagement with materials framed specifically to highlight premise plumbing issues and water quality at the tap is beneficial to both the water system and the customer. An engagement campaign provides an additional opportunity to build relationships, especially households that do not pay their own water bill.

▶ **Related Code:** California's Safe Drinking Water Act requires public water systems to create and distribute a consumer confidence report every year.

▶ **Best Practices:** Water systems could communicate constantly and respectfully in a two-directional fashion with their customers in ways that are culturally and linguistically appropriate. Water systems could go beyond existing regulatory language to simply communicate concepts of relative risk and responsibility, even in cases where water systems have no legal responsibility to address these issues. Many water system staff want to, or already do, make such efforts, but there is room for improvement. Water systems could form partnerships with neighborhood or advocacy groups to provide customers with independent, trusted information that is easy to understand — similar to the Drink Philly Tap partnership.

Premise plumbing educational information could also be included in regularly distributed utility materials like water quality and consumer confidence reports and can supplement pre-existing public engagement on water efficiency. Water quality information can also be made more accessible to the public (i.e., easy to read, in languages customers speak, available online and in print) to increase transparency. However, a willingness to listen, dialogue, and explain things in the simplest accurate terms is the most important way to improve trust.

RECOMMENDATION 2

Test water and provide timely, on-site assessments for customers at the tap

▶ **Background:** Many individuals assume that their water system is responsible for any plumbing and tap issues. Although premise plumbing issues are the property owner's responsibility, this needs to be explained to tenants, and water systems are uniquely positioned and incentivized to do so. This type of engagement is beneficial to both the water system and the customer because, in many cases, customers will realize water systems are not the cause of their tap water problem.

▶ **Related Code:** Public water systems are only legally obligated to test water for certain contaminants and not those that can affect water color, turbidity, and odor (aesthetics). California law focuses on addressing contaminants from a health-based approach, but the laws could be expanded to include addressing issues of aesthetics in water.

▶ **Best Practices:** Water systems could create or expand tap water testing programs and their visibility to customers. They could work closely with community-based organizations to respond to community-led testing and report back results. These results could also be reported to the state and potentially mapped in anonymous form.

Some water systems test for secondary contaminants that can affect water aesthetics, but there is room for improvement. These contaminants have a strong impact on whether customers trust their tap water.

RECOMMENDATION 3

Access funding from existing small programs

▶ **Background:** To adequately address premise plumbing issues, a dedicated funding source is needed. However, in the absence of this, water systems can instead leverage existing funds. For instance, new programs at the California Department of Water Resources and the State Water Resources Control Board (Water Board) enable water systems serving nonwealthy communities to make upgrades to preserve drinking water affordability. Furthermore, federal funds are available to replace water pipes; the Bipartisan Infrastructure Law approved $15 billion for lead pipe replacement and $11.7 billion for general infrastructure work.

▶ **Related Code:** Public agencies can use borrowed dollars (like bonds and the EPA's Clean Water State Revolving Fund loans) to pay for investments on private property that serve a public purpose.

The Governmental Accounting Standards Board (GASB) sets rules for public agencies nationwide and clarified that public water systems can use a GASB 62 approach to finance investments on private properties. The California Constitution prohibits the use of state resources for the benefit of "corporations, associations, asylums, hospitals, or other institutions that are not owned and operated by the State." However, there are exceptions for water management.

▶ **Best Practices:** Water systems, especially those that are publicly owned, can potentially collect additional revenue from new federal, state, and county funds to carry out more proactive distributional network replacement. This was the case with the Bay Area Disadvantaged Community and Tribal Involvement Program's Tap Water Quality program, which has led to a prospective follow-up effort by the program in the Los Angeles area.

Various cities and municipalities across the U.S. have leveraged revenue to replace premise plumbing:

» Denver Water in Colorado used a GASB 62 approach to leverage bond funding and replaced lead pipes rather than waiting to conduct a full survey on the issue.

» The City of Newark, New Jersey, utilized designated funding to leverage other funds to replace lead pipes quickly, and used money collected from water rates to replace pipes. It also created a free lead pipe mandatory replacement program.

» The Massachusetts Water Resource Authority offers interest-free loans to allow municipalities to access funds to replace pipes.

Many water systems are still concerned with the gifting of public funds, but it is important for water systems to review and pursue opportunities to help their customers fix premise plumbing issues.

RECOMMENDATION 4

Facilitate on-water bill solutions for plumbing upgrades

▶ **Background:** In many cases, the financial assistance needed to fix premise plumbing issues is small enough to be addressed with an on-water bill solution. On-bill financing models can address concerns of high upfront costs required for plumbing repairs and reduce potential tension between tenants and landlords. Moreover, these solutions could have low administrative costs because water systems can integrate repayment into current billing structures. However, it is unclear whether landlords would be interested in or supportive of this program, and focus groups or further research could be conducted on this topic.

▶ **Related Code:** California code establishes certain requirements for billing processes on public water systems. Propositions 13 (1978), 218 (1996), and 26 (2010) place restrictions on rates public water systems can charge for water.[23]

▶ **Best Practices:** A water system can tie repayment to addresses and to water service. Doing this removes the risk of a tenant moving out of the service

[23] See Paying for Water report and California Constitution Sections 1-3

area before repayment is complete and reduces administrative obstacles of tracking tenants. Shifting the repayment interaction from a landlord to the water system can address the former's reluctance to pay upfront costs and concerns of tenant eviction or rent increases. In 2020, the Water Board recommended statewide water rate assistance programs that could support the structure for on-water bill solutions.

RECOMMENDATION 5

Advocate on behalf of customers to the state and landlords

▶ **Background:** Water systems have access to water quality data and have a direct relationship with their customers. Some also have access to large legislative and/or governmental affairs teams.

▶ **Related Code:** Water systems can, do, and should further advocate, whether individually or through associations, for policy changes that would benefit their customers, except as explicitly barred by law or code. Furthermore, new Lead and Copper Rule revisions require water systems to inventory the customer side of the service line and create a plan for replacing lead and galvanized service lines, including on the customer side. The EPA also proposed new restrictions in November 2023 that would require the removal of virtually all lead water pipes across the country in the next 10 years.

▶ **Best Practices:** Water systems can lobby local, state, and federal policymakers through organizations like the California Municipal Utilities Association (CMUA) and the California Association of Mutual Water Companies. CMUA, for example, led a broad coalition of water and energy advocacy organizations in 2021 to successfully lobby and secure about $2 billion in financial assistance to help Californians who had fallen behind in paying their water and energy bills. Water systems could engage in some level of advocacy or direct support (i.e., code reforms or funding for lead service line replacement) on behalf of customers. This is especially important for historically marginalized residents and others who may not have the resources, connections, or ability to effectively self-advocate.

Water systems can also better communicate with property owners about service line replacements associated with the Lead and Copper Rule Revision as an opportunity to improve water quality, efficiency, and public trust in tap water.

Furthermore, water systems, in general, can more consistently work directly with landlords of large properties and public housing managers and authorities (i.e., Housing Authority of the City of L.A.) to provide solutions for major plumbing issues. Water systems can also provide financial support directly to tenants.

Landlords:
Role in Premise Plumbing Solutions

Summary

Landlords can help address issues with tenant water quality and tap water trust when the source of the problem appears to stem, either in whole or in part, from premise plumbing. Landlords are responsible for on-property pipes and the lateral pipes connecting to a water system main as part of their legal mandate for keeping units safe and well maintained, which includes having plumbing in good working order. This means that landlords are responsible for monitoring and addressing many of the aesthetic effects (i.e., discolored or smelly water) that come from premise plumbing. Ensuring pipes and fixtures are in proper working order, and are repaired or replaced, could improve tap water quality and tenants' quality of life and trust in tap water.

There is a great diversity of landlord types (i.e., mom and pop, family investors, management companies, property developers, institutional investors, etc.) with varied resources and challenges. In 2019, Strategic Actions for a Just Economy found that rental units in the City of Los Angeles were owned by corporate entities (43%), individuals (33%), trusts (23%), and the government (1%). Without direct public financing or regulatory pressure, landlords generally have little incentive or interest in addressing premise plumbing. In cases of rent control, and even some without it, landlords may be unable to fully recover the cost of premise plumbing upgrades because they are not fully visible to buyers.

Recommendations

Landlords can help advance solutions to premise plumbing concerns by implementing the following:

1. **Respond to tenant tap water complaints in a timely manner to support tenant trust and health**
2. **Advocate for financial assistance for small-scale landlords from cities or counties**
3. **Cooperate with state and local reforms**

Detailed Recommendations

RECOMMENDATION 1

Respond to tenant tap water complaints in a timely manner to support tenant trust and health

▶ **Background:** Landlords, along with water systems and public health agencies, are the first touch point for tenants experiencing issues with their tap water. Landlords have a market-driven incentive and legal obligation to maintain rental properties and to respond to tenant complaints in a timely manner as part of providing quality service. At the same time, pipe materials and age vary inequitably in Los Angeles County and the state, which can impact the contaminants present in premise plumbing. Tenants' complaints and tap water test results could be indicative of broader problems within the property's plumbing system or water source; addressing these concerns swiftly is essential to safeguarding the health and well-being of residents. Ignoring or delaying responses to tap water complaints could expose landlords to potential legal liabilities and costly disputes.

▶ **Related Code:** Landlords are responsible for keeping units safe and well maintained, which includes having plumbing in good working order.[24] However, the penalty for landlords does not kick in unless four conditions hold true, which can lead to slow or inadequate enforcement. California law states that landlords must make immediate repairs if a tenants' health or safety is threatened, and nonurgent repairs should be made within 30 days.[25]

▶ **Best Practices:** Because they are responsible for keeping units safe and well-maintained, landlords should acknowledge tenant tap water complaints and tap water testing results that indicate potential premise plumbing contamination as quickly as possible and take immediate action to investigate and resolve the issue.

Furthermore, landlords could benefit from fact sheets and visuals that outline best procedures for addressing tap water complaints; this information could be posted in and/or around rental properties. Webpages and fact sheets were created[26] to inform landlords and tenants about rent increase limits starting in 2020; and landlords could advocate for, create, and/or distribute similar documents in multiple languages about how to address tap water concerns.

Establishing and monitoring a regular line of communication for tenants' general complaints (whether online, in-person, via mail, or over the phone) can ensure tap water issues are addressed quickly. To help identify potential contaminants, landlords could conduct regular testing and inspections of premise plumbing and be responsive to testing results. To promote tenant trust in the process and results, testing could be conducted or overseen by a third party, such as the local water system or a nonprofit. One example of this is the Bay Area Disadvantaged Community and Tribal Involvement Program. (For more information, see our Advocacy Organizations Policy Brief.)

RECOMMENDATION 2

Advocate for financial assistance for small-scale landlords from cities or counties

▶ **Background:** Premise plumbing repairs are an effective way to improve water access, affordability, conservation, and efficiency. Premise plumbing repairs can enable residents to spend less money on alternative water and offset long-term health costs from drinking contaminated water. However, additional funding is needed, especially for low-income tenants and small-scale landlords. For instance, replacing corroding or leaking pipes is one of the most costly premise plumbing repairs — as much as $25,000, depending on the severity of corrosion and frequency of leaks.

[24] See California Civil Code §1941.1 and California Tenants Guide
[25] See Repairing Your Rental Unit webpage and California Civil Code §1942
[26] See West Hollywood AB 1482 webpage, NLSLA fact sheet, and CalRHA webpage

▶ **Related Code:** The City of L.A.'s "Retrofit on Resale" ordinance for water efficiency requires residential property sellers to retrofit the property with water-saving devices. The city's Water Efficiency Requirements ordinance requires new buildings and new plumbing in existing buildings to meet certain efficiency standards. These ordinances could justify premise plumbing upgrades on a property by qualifying them as water efficient. However, it is unclear whether landlords can afford to make these upgrades without passing on the cost to tenants.

▶ **Best Practices:** Landlords could lobby local and state policymakers to provide additional funding for small-scale landlords to address premise plumbing issues and comply with existing laws. Landlords can work via lobbying groups or associations like Alliance of Californians for Community Empowerment Action, Housing California, or Housing NOW!, which have successfully advocated for housing justice policies in California. Subsidies could be created at the city or county level to help small-scale landlords update pipes; the Los Angeles Department of Water and Power provides helpful subsidies for energy efficient upgrades that could be used as a model.

Another potentially replicable financial assistance model for cities or counties to employ to support premise plumbing upgrades by landlords is the use of deferred special assessments. In California, assessment districts are a commonly used tool to finance improvements when no other source of money is available (California Tax Data, n.d.). Cities or counties can form a district and finance improvements to private property, which owners defer paying back until they sell the property.

Local governments, which also run water systems, could explore potential avenues for program models that assist households pay for infrastructure upgrades in small installments on their water bill. These could be equivalent to what households typically pay for bottled water for the month.

RECOMMENDATION 3

Cooperate with state and local reforms

▶ **Background:** Without a legal mandate or financial incentive, landlords may not be motivated or able to make premise plumbing repairs. Additionally, tenant-landlord relationships, especially among undocumented and/or low-income communities, may deter tenants from filing formal complaints or approaching their landlord for assistance with water issues or repairs. However, landlords and property owners are an important party in finding and ensuring sustainable long-term premise plumbing solutions.

▶ **Related Code:** Not applicable

▶ **Best Practices:** The L.A. Housing Department provides a guide for landlords with information on how to comply with the Rent Stabilization Ordinance; a similar guide on complying with state reforms could prove helpful. The department also provides a hotline in multiple languages for free assistance and resources for landlords, and it could explicitly provide information on premise plumbing issues.

Furthermore, new EPA Lead and Copper Rule revisions require water systems to inventory the customer side of the service line and create a plan for replacing lead and galvanized service lines, including on the customer side. This is a time-sensitive process that landlords could work with water systems to accomplish. In addition, the EPA proposed new restrictions in November 2023 that would require the removal of virtually all lead water pipes across the country in the next 10 years. Replacing these service lines could provide other benefits beyond reducing risk of lead contamination — such as improving water efficiency and taste.

State and local reforms could also discourage or prohibit landlords who make premise plumbing upgrades from leaving tenants without water for extended periods with little to no notice. Landlords could offer alternative water sources to ensure they are providing an adequate amount of water to tenants at all times. The Strategic Actions for a Just Economy's work on this related to building decarbonization might offer some insights.

Advocacy Organizations:
Role in Premise Plumbing Solutions

Summary

Advocacy organizations that work alongside residents can play an essential role in addressing premise plumbing problems and ensuring access to safe, affordable tap water. The pipes that move water from a distribution network to a tap point (i.e., home, school, or business) are called premise plumbing. Typically, tap water issues are first identified by those who regularly use the tap water (i.e., residents, tenants in rental properties). While the burden of securing support to address plumbing issues would ideally not be carried by residents and tenants, this is the current status quo. Typically, in multifamily rental housing, multiple households have to voice tap water concerns in order to garner sufficient attention and intervention. This is particularly true when tap water issues are caused by poor premise plumbing, given every household has a different set of pipes.

Advocacy organizations can help governments at all levels better understand the tap water issues that residents face and work with communities to develop and implement solutions. Government policymakers should engage organizations that advocate for tenants, low-income households, and other historically marginalized populations[27] who face undue burden in obtaining clean drinking water. Detailed Recommendations

Recommendations

Advocacy organizations can help advance solutions to premise plumbing concerns by implementing the following:

1. **Facilitate tap water testing beyond what is routinely provided by local water systems and regulators**
2. **Serve as an information and communication intermediary between residents and other interested parties**
3. **Advocate for permanent changes to city, county, and state codes and programs to support trust in premise plumbing**

[27] We use "historically marginalized" to mean individuals or groups who are systematically distanced from access to power and resources and excluded from mainstream social, economic, cultural, or political life. This exclusion is often based on race, ethnicity, gender, sexuality, ability, preferred language, socioeconomic status, age, etc. We base this definition on UCLA's EDI glossary of terms.

RECOMMENDATION 1

Facilitate tap water testing beyond what is routinely provided by local water systems and regulators

▶ **Background:** State law requires public water systems to create annual consumer confidence reports with information about the system's water quality. However, these reports can be hard to understand, may not be available in a resident's preferred language, and may not have information about plumbing issues at the property level that are beyond the water system's direct control. Increasing tap water testing options provides residents, water systems, and local governments with the data needed to better understand local issues, draft effective solutions, and address issues of water equity. In many places, water testing facilitated by local community-based organizations has helped create community-level data and supported larger policy changes and advocacy efforts. The Los Angeles County Department of Public Health has various data dashboards that help visualize trends for COVID-19, HIV, substance abuse, and other public health issues. It would be valuable for public health officials to have information about tap water quality so they can better take action where there are known hazards.

Some water systems provide opportunities for residents to test their tap water; however, these efforts often fall short of meeting demand. Currently, one of the only water systems in Los Angeles County that guarantees tap water testing for any customer is the city's Los Angeles Department of Water and Power. There are limited testing opportunities for residents who get their water from a well. For instance, the Central Coast Regional Water Board provides free well testing to households who get their drinking water from a domestic well.

Tap water testing in urban areas is an equity issue because poor water quality disproportionately affects historically marginalized communities.[28] Residents may not know who operates their water system or know how to contact them. For instance, tenants whose water bills are included in their rent may never receive correspondence from their water system directly; and tenants from historically marginalized communities may feel they have no agency to request information from landlords, leasing companies, or other housing authorities due to immigration status, language barriers, discrimination, etc. For residents who want to test their own tap water, private labs may charge over $300 per test, which is cost prohibitive for many. The State Water Resources Control Board (Water Board) provides an online map with accredited labs that can test tap water.

Advocacy organizations are uniquely positioned to compel water systems and regulators to provide more readily accessible, affordable, and convenient tap water testing. Some advocacy organizations have also provided tap water testing using home testing kits or by working with a certified testing firm such as SimpleLab. The Bay Area Disadvantaged Community and Tribal Involvement Program Tap Water Quality Testing Program serves as the largest example of nonprofits supporting large-scale tap testing.

▶ **Related Code:** There is no state or local code that requires water systems to provide free tap water testing for contaminants other than lead. California's Safe Drinking Water Act requires every public water system to annually prepare a consumer confidence report and deliver a copy to each customer, but these reports include testing and reporting only on certain types of contaminants and do not cover premise plumbing or water quality at the tap itself.

▶ **Best Practices:** The Bay Area Disadvantaged Community and Tribal Involvement Program was a relatively successful tap water testing program that can serve as an example. Having trusted organizations in a community facilitate tap testing and collect the associated data is key to building public trust, especially if the tests show that water is safe to drink. These programs could coordinate with state agencies to ensure the data collected can be used by the Water Board and inform future policy. Furthermore,

[28] See Drinking water quality and social vulnerability linkages at the system level in the United States, Disparities in drinking water compliance, and The Prevention Institute's 2018 report

organizations could advocate for the Water Board's online maps to be made accessible for those with limited English proficiency and limited computer literacy.

Advocacy organizations could compel current housing programs and resources to include tap water testing. Organizations like the Los Angeles Tenants Union could incorporate a testing program as part of their habitability code advocacy, while resources like the Apartment Association of Greater Los Angeles can help landlords find resources to maintain premise plumbing as part of providing safe housing.

RECOMMENDATION 2

Serve as a communication intermediary between residents and other interested parties

▶ **Background:** Information on water quality, premise plumbing issues, how to report problems, and potential solutions can empower residents to address some issues on their own or call on responsible parties to address them.

There is a history of distrust between historically marginalized communities and publicly regulated water agencies because these communities have repeatedly experienced water service failures and attempted cover-ups.[29] Therefore, intentional and direct engagement is needed to heal relationships, identify and address issues where they exist, and increase trust in tap water.

Advocacy organizations are often essential in communicating between residents and public agencies. Furthermore, they are essential in providing user-friendly and culturally relevant guidance to communities regarding the health, sustainability, and financial implications of alternative water solutions (i.e., bottled water, filters, plumbing fixes), information that water systems often do not provide for legal reasons and landlords are ill equipped to communicate. Moreover, if tap water is tested and is proven safe, advocacy organizations can help share this information with the community.

The bottled water industry has aggressively used targeted advertising and marketing strategies to increase bottled water consumption in historically marginalized communities. But bottled water is not subject to the same regulations as tap water, and evidence shows bottled water is no safer than tap water on average.[30] However, public agencies often resist publishing counter-campaigns because staff are typically not experts in or trained to actively market the agency's "product" or defend it in the media. Advocacy organizations are likely able to address this by providing concise information on the health and financial benefits of tap water reliance.

▶ **Related Code:** Proposition 65 (1986) requires certain apartment owners and managers to share information regarding lead from plumbing and fixtures with tenants.

▶ **Best Practices:** Organizations like Strategic Actions for a Just Economy offer tenant action clinics to support and advise tenants in multiple languages. These clinics could include more direct information on premise plumbing (i.e., legal responsibilities and maintenance requirements), implications of alternative water sources, and tap testing programs. Tenants associations like the Los Angeles Tenants Union hold meetings to help resolve habitability concerns and could include information on premise plumbing. WaterTalks recently created a user-friendly web map in English and Spanish with information about premise plumbing that can serve as a helpful reference.

Advocacy organizations can help overcome the information and communication gaps faced by many tenants dealing with premise plumbing issues. For instance, an outreach effort with user-friendly and culturally appropriate information could help tenants recognize that landlords are legally responsible for addressing premise plumbing issues, identify ways to compel landlords to address these issues, and empower residents to report and document the

[29] See The Human Right to Water in Poor Communities of Color, Dissecting Distrust in the Tap, and Tapping Out Bottled Water

[30] See NRDC Guide and U.S. Households' Perception of Drinking Water as Unsafe and its Consequences: Examining Alternative Choices to the Tap

issues they experience. (For more information, see our Landlords Policy Brief.)

Esperanza's Promotores de Salud serves as a great model on how to disperse information to community members and could be expanded to include information on identifying and addressing issues with tap water and premise plumbing. Organizations like Watts Clean Air & Energy Committee and Strategic Concepts in Organizing and Policy Education run community-based academies to provide training and capacity building to residents. These academies can include sections that focus specifically on premise plumbing (i.e., understanding their water quality, legal responsibilities for premise plumbing, and how to report tap water issues). Black Women for Wellness is developing a series of videos focused on water equity from Black women's perspective; this series could be expanded to promote more culturally appropriate information about premise plumbing.

Landlords are required to provide tenants with an EPA pamphlet regarding lead. Its section on concerns for lead in drinking water could be used as a guide to provide information on maintenance requirements and legal responsibilities of premise plumbing. In addition, the California Tenants Guide requires landlords to notify "current and prospective tenants on possible exposure" to contaminants and includes information on landlords' repair responsibilities. This guide could include more information on premise plumbing and how to report and address issues, and would ideally be provided in a tenant's preferred language.

The biggest challenge in this space for advocacy organizations will be serving as long-term providers of information to residents as well as documenting the history of cases and tap water testing data to inform policy. This requires long-term funding and technical capacity (website maintenance, etc.) that nonprofit and community-based organizations often lack and foundations and other philanthropic organizations could support.

RECOMMENDATION 3

Advocate for permanent changes to city, county, and state codes and programs to support trust in premise plumbing

▶ **Background:** The State of California, through its Water Board's Division of Drinking Water (DDW), serves as the regulator of drinking water systems. It may be able to intensify its enforcement and compliance measures to require water systems to advance solutions to certain premise plumbing issues, but this will likely require legislative changes. In the past, state funding programs to alleviate pressing drinking water issues for historically marginalized communities and communities with low incomes (i.e., the SAFER Drinking Water Program and the Arrearage Payment Program) were created, in large part, because of community advocacy.

The County of Los Angeles is the operator of some drinking water systems and has the capability to collect, report, and share data regarding water quality and tenant rights. Through these and other mechanisms, it can proactively assist residents in addressing premise plumbing issues.

Landlords and property owners are responsible for providing safe and well-maintained plumbing facilities that are compliant with the law at the time of installation.[31] Including aesthetic water issues or maintenance of premise plumbing in city housing codes can offer protections to tenants who may fear addressing these issues with a landlord.

The City of Los Angeles offers a variety of programs for landlords to keep buildings up to code and hold them accountable when needed. One such program is the Tenant Habitability Program, which incentivizes landlords to renovate, repair, or alter a building (i.e., to replace an existing water line) through rent adjustments.[32] Cities like Newark, New Jersey, and Cincinnati, Ohio, have laws and ordinances that make it easier to replace lead pipes in rental buildings.

[31] See WaterTalks Path to Tap tool in English and Spanish
[32] See Tenant Habitability Program webpage and L.A.'s Article 2 Tenant Habitability Program

▶ **Related Code:** California law describes that a landlord is responsible for repairs that make a property uninhabitable, including "plumbing facilities." Municode provides online access to various city and county codes in California; for instance, the City of El Monte has a set of codes specific to the city's water service system. California law gives the Water Board the authority to enforce the federal and state Safe Drinking Water Acts.[33]

▶ **Best Practices:** Advocacy organizations can play a role in adding premise plumbing protections to existing city codes. These code changes can then inspire similar enforcement and regulation changes at the county level, which oversees code enforcement for unincorporated areas, as well as the state, which serves as the regulator of many water systems. We've included recommendations for changing county and state level codes in our Los Angeles County and State of California policy briefs.

For example, advocacy organizations can push cities to adopt a proactive inspection program similar to the City of Los Angeles' Systematic Code Enforcement Program, which is similar to the city's Rent Escrow Account Program. This type of program holds landlords accountable for noncompliance. Los Angeles' Tenant Habitability Plan also may be a model, as it ensures that property owners take appropriate measures to ensure tenants are safe in the case of serious code violations that require construction work.

Moreover, city codes that include maintenance requirements can be expanded to cover faucets, showerheads, other fixtures, and under-counter pipes. This can help address affordability issues as well. City codes to minimize or avoid public health or safety hazards could also incorporate premise plumbing solutions, because issues that lead a household to fear for their health and safety could present a hazard to public health, safety, or welfare.

[33] California Health & Safety Code 116270 et. seq.; California Health & Safety Code 116470; California Code of Regulations Title 22