Reducing Lead in Drinking Water

in California's Childcare Facilities

FULL REPORT

Implications for AB 2370 Program Development from Los Angeles County

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Glossary of Terms

AB 2370: A new law that impacts licensed child care centers by requiring the distribution of educational materials on effects of lead to parents, training for child care providers, and requires testing and remediation for elevated lead levels in drinking water.

Action Level: An action level indicates that the amount of lead in the water exceeds an established level. In the program specific to AB 2370, the proposed lead action level is 5 ppb. Also see *exceedance*.

CDSS: California Department of Social Services, the agency tasked with the development of directives for the implementation of AB 2370.

Exceedance: A term used to describe when the amount of lead in the water exceeds an established level and requires remediation. Also see *action level.*

ppb: Parts per billion is the mass of a chemical or contaminate per unit volume of water. For instance, one ppb is one part in 1 billion or 1 µg/L.

Remediation: A generic term used to describe cleanup activities. In the specific program for AB 2370, remediation are the efforts to reduce the concentrations of lead delivered by the facility's fixtures to below the action level (e.g., fixture replacement). Also see *response*.

Response: A response is any type of activity outlined in a licensed Child Care Center's Corrective Action Plan in response to a lead action level exceedance. Also see *action level*.

Premise Plumbing: The pipes and fixtures on private property that are the legal responsibility of property owners, not the water system.

Schools Program: Used to describe the program that requires California's public K-12 schools to test their water for lead, as ordered by the Legislature in 2017 under AB 746.

Water Board: A shorthand for the California State Water Resources Control Board, the agency charged with recommending water sampling guidelines for the implementation of AB 2370.

Useful Links

Assembly Bill 2370 (Holden 2018), Bill Information & Text

California Department of Social Services, Child Care Licensing Program

- Lead Fact Flyer
- Lead Testing and Prevention in Licensed Child Care Centers resource website
- Provider Information Notices (PINs)

U.S. Department of Health & Human Services Centers for Disease Control Childhood Lead Poisoning Prevention website

U.S. Environmental Protection Agency 3Ts for Reducing Lead in Drinking Water Toolkit

UCLA Luskin Center for Innovation Water Research website

Little Things Matter — Unleashing the Power of Prevention video resource website

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Executive Summary

This report synthesizes research from a strategic partnership between the UCLA Luskin Center for Innovation and First 5 Los Angeles. The partnership was formed to support the planning and implementation of a Safe Drinking Water Lead Testing Program for child care sites in Los Angeles County. This partnership was motivated by the passage of California Assembly Bill 2370, which mandates testing for lead in drinking water in childcare facilities across California by January 1, 2023.

Experts including the state's Office of Environmental Health Hazard Assessment deem zero or near-zero lead exposure as the only true public health standard for young children. Given the acute threat which lead exposure in drinking water poses to young children and their families, and that regulatory standards for lead in drinking water for the general population in California remain well above zero, the passage of AB 2370 represents a meaningful step toward protecting children's health and life opportunities.

Our report first presents the motivation for this program: preventing lead poisoning and reliance on non-tap water alternatives among young children. It next outlines historical and recent legislative responses to address these concerns, drawing lessons learned from the experience of the lead testing by California's public schools in Los Angeles as mandated by the state legislature in 2017 (AB 746).

The report predominantly focuses, however, on our findings from a three-part stakeholder convening series which we hosted in Los Angeles in collaboration with other key partners to inform the implementation of AB 2370. These convenings, along with other stakeholder engagement, allow us to identify key opportunities and challenges for the implementation of lead testing in drinking water in Los Angeles' child care centers and First 5 LA's five Best Start areas. They also allow us to make several recommendations to ensure program success.

Major Findings: Opportunities and Challenges

1. Stakeholders universally support the value, as AB2370 program development currently envisions, of testing for and enforcing a stricter action level for lead in drinking water in early childhood education (ECE) settings than any previous statewide effort

2. There remains widespread confusion among stakeholders about how AB 2370 relates to previous state legislative efforts to ensure safe drinking water in ECE settings, and the scope of requirements placed on child care centers and water systems for various aspects of implementation stipulated in the law.

3. Common concerns about program design and implementation include:
    a. the technical and financial responsibility put on under-resourced centers for lead testing and remediation,
    b. which centers are required to test their water and if all water usages and taps need to be tested, and
    c. How oversight and enforcement of compliance will be undertaken.

4. There is widespread desire for a more formal stakeholder engagement process and opportunities for public participation in state agency program management.

5. There is a universally-recognized need for more technical assistance tools and funding for child care centers beyond those stipulated in the authorizing legislation to make program implementation successful.

Top Recommendations for Success Based on Findings

1. Given their unique capabilities and experience, water systems would ideally be involved in directly performing sampling and testing in child care centers, as seen in the state's schools program (AB 746, 2017).

2. In the absence of a formal role for water systems in program implementation, more guidance should be given by the Water Board or contractors to child care centers on how to choose third-party testers and plumbers and the expected costs of these services.

3. In light of implementation delays in the schools program, clearer compliance goals should be set and reported by CDSS to ensure that all centers have their facilities tested in a timely manner.

4. Similarly, centers that identify lead exceedances need more direct assistance from state agencies or their contractors in order to quickly return to full compliance in a cost-effective manner, rather than just being instructed to do so.

5. To ensure drinking water equity in California, the same higher standards of testing and actionable lead levels proposed for childcare centers should be employed in the school lead testing program, as well as adopted for testing in family child care homes.

6. To ensure water affordability and public health in urban areas such as Los Angeles, parallel education and training measures should be undertaken to ensure that the program does not increase tap water mistrust where trust is merited. This is all the more essential during crises such as presented by COVID-19.

7. In light of the limited public engagement to develop draft directives to date, CDSS should make opportunities for formal stakeholder engagement and public participation more evident and lay out a concrete timeline for public comments and implementation.

8. The state legislature and counties should provide substantially more funding for testing, interim water, and long-term remediation beyond the existing $5 million grant program. Funding could be allocated either through existing public sources such as Water Board SAFER funding and LA County Measure W, or through designated new sources.

Introduction

This report presents the key findings and recommendations from a research project on safe drinking water made possible by a strategic partnership between the UCLA Luskin Center for Innovation and First 5 Los Angeles. The partnership was motivated by the passage of California Assembly Bill (AB) 2370 (2018, Holden), which mandates testing of drinking water for lead in childcare facilities built before 2010 across California by January 1, 2023. The partnership was formed to support the planning and implementation of a successful lead testing program for licensed child care sites in Los Angeles County, particularly in Best Start areas.

The public health case for testing and removing lead from drinking water infrastructure in early childcare and education (ECE) settings is clear; damage from lead exposure is permanent but also preventable. Protecting children from lead exposure improves short-term and long-term life outcomes as even low levels of lead in children have been connected to loss in IQ, hearing impairments, and learning disabilities. A clear precedent for the passage of AB 2370 also already exists in California, as the State Water Control Board mandates testing for lead in drinking water in all secondary and primary schools (AB 746, 2017).

Similarly, ECE settings have a professional responsibility to ensure the health and safety of the children entrusted to their care. The fundamental responsibility of ensuring that the water provided in the facilities is safe for children to drink has, to date, not yet been comprehensively addressed. This is why stakeholders have universally supported the value of the passage of AB 2370 and its initial program development to test for and enforce a stricter action level for lead in drinking water in early childhood education settings than any previous statewide effort in California.

Our project to inform AB 2370 implementation is particularly important to achieving the systems change vision of First 5 LA that "by 2028, all children in L.A. County will enter kindergarten ready to succeed in school and life" as the effects of lead cannot be reversed. This program will be the first of its kind in the state and AB 2370 does not specify all necessary details on program design. Our strategic partnership with First 5 LA convened and coordinated input from local, county and state agencies, university institutions, and nonprofit partners to create recommendations for establishing a robust lead testing and remediation program in ECE settings based on AB 2370. Despite the clear legal mandate and moral imperative, a number of challenges must be overcome to develop and implement such a program. Enhancing long-term trust in tap water is all the more essential and urgent in a public health crisis such as presented by COVID-19.

What is Assembly Bill 2370?

AB 2370, authored by Assemblymember Chris Holden, adds a new section to the California Health and Safety Code, requiring three things:

(1) Effective January 1, 2019, all licensed child day care facilities must provide the following information to enrolling and re-enrolling families:

- the risks and effects of lead exposure,
- blood lead testing requirements and recommendations, and
- options for locations of affordable blood lead screening tests.

The Department of Public Health (DPH) and California Department of Social Services (CDSS) Child Care Licensing Program released a Lead Fact Flyer to help child care centers meet new information requirements, although this did not ensure that facilities passed this information on to families.

(2) The bill also requires the Emergency Medical Services Authority (EMSA) to add instruction on the prevention of lead exposure to the Preventative Health and Safety Training curriculum for child care centers licensed on or after July 1, 2020.

(3) Licensed child care centers (CCCs) located in buildings built before January 1, 2010 must test their water for lead according to the following guidelines:

- Testing must occur within a three-year window between January 1, 2020 and January 1, 2023,
- Subsequent testing must take place every 5 years after the date of the first test,
- If results demonstrate "elevated lead levels," the facility must immediately shut off the affected faucets or fountains and provide potable drinking water,
- Child Care Centers (CCCs) are ultimately responsible for the cost of testing, repairs and remediation, and
- Importantly, the requirement does not apply to Family Child Care Homes (FCCHs).

In addition to AB 2370, SB 862, Chapter 449, Statutes of 2018 appropriated $5 Million to the Water Board to test drinking water for lead at licensed CCCs, to remediate lead in plumbing and drinking water fixtures, and to provide technical assistance to licensees. The details of this funding were finalized in May 2020.[1] The Office of Water Programs at California State University, Sacramento has been contracted to implement a statewide program with support from the California Rural Water Association and the California Child Care Resource and Referral Network.

CCCs prioritized for funding assistance will be those meeting the following criteria:

- Serve children zero to five years of age, with the highest priority for centers that service children zero to three years of age,
- Have 50 percent or more of their registered children who receive subsidized care, and
- Operate only one facility.

Although the details were not finalized as of the publication of this report, California is also expected to receive some level of funding from the U.S. EPA's Voluntary Lead Testing in Schools and Child Care grant program. Funding awards have already been announced for multiple other states, and range from several hundred thousand dollars to several million dollars.

Initial Agency Program Design Guidance

Since the passage of AB 2370 in 2018, the Water Board and CDSS have worked on developing draft guidelines and directives for the formal rollout of a water testing program in licensed childcare centers. This work has been carried out in consultation with a stakeholder group and several technical advisory committees, the latter of which were formed in 2019.

This work, however, is currently delayed due to the COVID-19 crisis, so the timing of subsequent rollout of draft and final program guidance and implementation is uncertain. Agency efforts have, to date, resulted in at least three published or in-progress pieces of public guidance which give information on program elements beyond the initial legislation.

First, in 2019 draft guidelines were developed by the Water Board's Division of Drinking Water, in consultation with stakeholders, for technical sampling, testing and remediation procedures. These guidelines were based largely upon the U.S. EPA' 3Ts methodology for addressing lead in drinking water, but importantly propose a more aggressive action level of 5-ppb of lead in drinking water than most if not all previous programs (see more below). The draft guidelines were presented as an informational item at the Water Board's October 16, 2019 meeting.[2] Potential revisions are expected after initial testing is completed in 2020 and as new input is received by the Board.

Second, CDSS issued a three-page Provider Information Notice (PIN 20-01-CCP) to licensed centers in January 2020. The CDSS Community Care Licensing Division (CCLD) uses Provider Information Notices (PINs) to formally communicate important license-related information to CCLD-licensed centers. This PIN provides some information regarding compliance with the requirement for lead testing of drinking water in child care centers as mandated in AB 2370, and a summary of information on lead that licensed child care centers must provide to parents and guardians of new enrollees and re-enrollees regarding the dangers of lead exposure.

Third, as of March 2020, CDSS was working with stakeholders and the Water Board on developing more detailed draft written directives for licensed centers. Again, this work appears to have been delayed by the COVID-19 crisis. The draft directives are likely to include more guidance on:

1. Self-certification forms necessary for certified, external water samplers,
2. The necessary forms for child care center and external water sampler check-off compliance lists, and
3. Written instructions for testing.

Motivation for Assembly Bill 2370

Recent events in the United States, most notably the scandalous, high profile cover-up of high levels of lead in drinking water in Flint, Michigan and numerous similar subsequent cases, have shown that lead in drinking water remains an on-going public health concern, particularly for children. This remains true despite notable gains in lead exposure reduction in the U.S. over the last several decades. Research shows that lead exposure can cause long-term harm and is one of the most common preventable poisonings of young children (including unborn children in utero).

The US Centers for Disease Control and Prevention (CDC) estimate that 500,000 children in the United States have blood lead levels above 5 micrograms of lead per deciliter of blood, the reference level at which the CDC recommends public health intervention.[3] It is also estimated that lead is detected in 100% of children in the United States, regardless of race, income, or where they live.[4]

Lead Poisoning and Health

Lead exposure does not affect everyone equally. The CDC notes that lead poses the greatest risk to children in utero, infants, and young children due to their heightened sensitivity. Additionally, low-income populations, the elderly, pregnant women, refugees, children adopted outside of the U.S., and workers in certain industries are also at risk for higher lead exposure. Children less than 6 years old are especially vulnerable because their rapidly-developing nervous systems are particularly sensitive to the effects of lead.[5] Bottle-fed infants and toddlers, who ingest as much as 80% of their lead uptake from the water in their formula, are critically at risk.

According to a recent review of scientific evidence by American Academy of Pediatrics, there is no scientific consensus on any safe level of lead in blood.[6] Lead exposure in young children has been linked to damages in the brain and central nervous system, behavioral problems, and childhood attention deficit hyperactivity disorder (ADHD). Even low levels of lead in children have been connected to loss in IQ, hearing impairments, and learning disabilities.[7] These exposures can lead to decreased ability to focus in school and academic underperformance.[8]

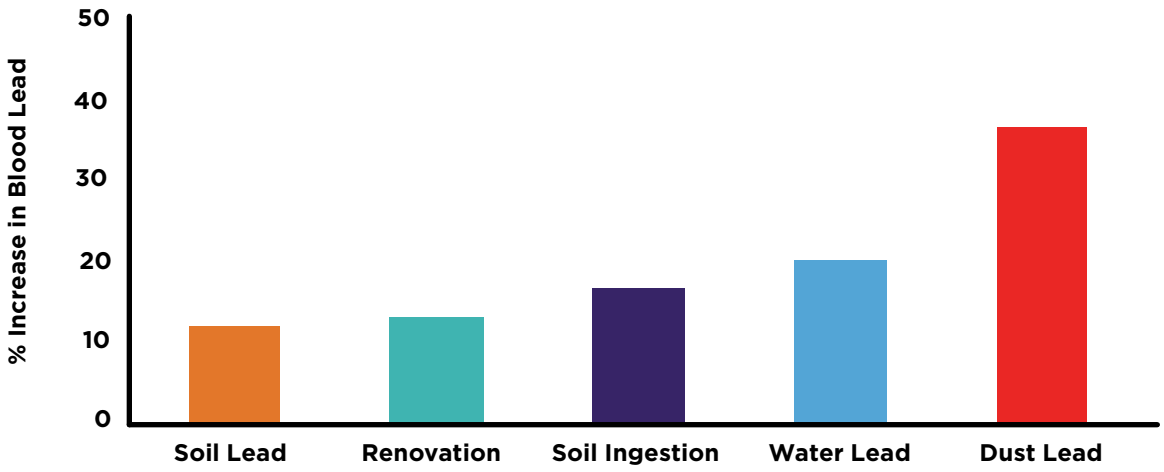
Sources of Lead

While lead is a common metal that can be found throughout our natural environment, the greatest concern comes from lead that was commonly used in our built environment for its chemical properties before the health effects were understood. According to the CDC,[9] exposure to lead in children can occur from sources such as certain types of pottery, toys, and jewelry, household dust, and in water, the air, and soil. Homes built before 1978, when lead-based paints were banned, likely contain

lead-based paints. Children can be poisoned when they swallow or breathe in dust from peeling and cracking paints. Jobs and hobbies that involve working with lead-based products, such as stained glass, may also cause parents to bring lead into the home. Other sources include traditional home remedies and foods imported from other countries.

As shown in Figure 1, lead-contaminated house dust and soil are the primary pathways of lead exposure for children, but water is also a leading cause. Water is a historically-overlooked pathway for lead exposure; on average, water can contribute to approximately 20% of a child's blood lead concentrations.[10] These concentrations can be higher in children who drink large quantities of tap water,[11] for instance, in infants who are formula fed,[12] as well as children living in communities with lead service lines and inadequate anti-corrosion controls.[13]

Figure 1: Contribution of lead exposure to children's blood lead concentrations

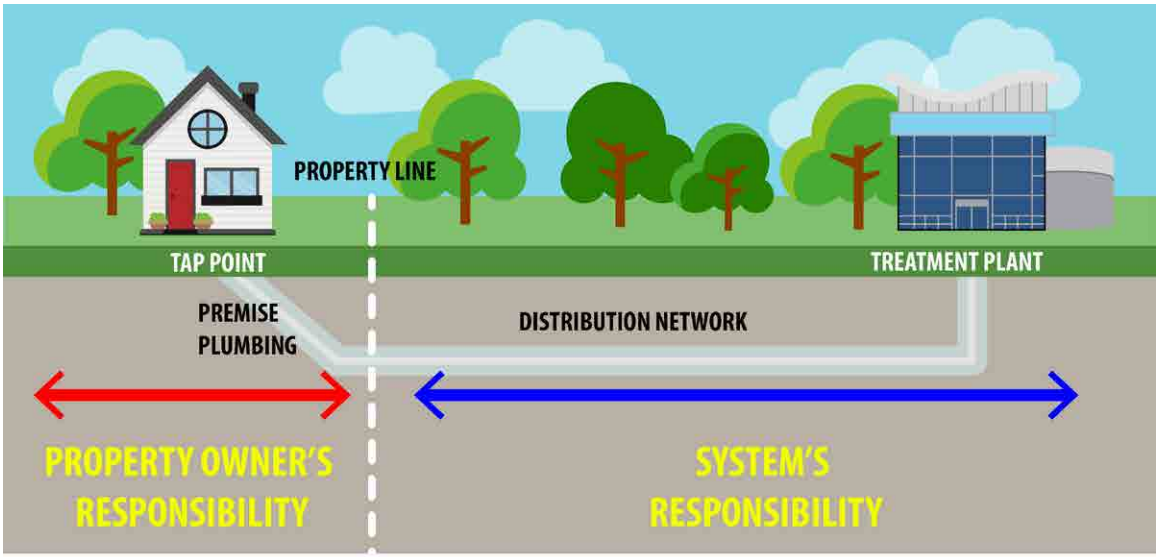


Source: Pediatrics Council on Environmental Health (2016). See footnote 7.

Lead in Water

Lead rarely occurs naturally in California's drinking water sources or in the state's water distribution systems, as opposed to the situation in many other states in the nation.[14] In California, lead may be more commonly-introduced when water passes through "premise plumbing" before it reaches the tap (see Figure 2 below). Premise plumbing consists of the pipes and fixtures on private property which are the legal responsibility of property owners rather than the water system. Of particular concern are older premise plumbing fixtures or the solder containing lead that connects plumbing. As such, in the context of testing for lead in drinking water in childcare centers, premise plumbing is of most concern.

Figure 2: Areas of Responsibility for Drinking Water Infrastructure



Multiple instances of exceeded health standards for lead in drinking water have already been uncovered in different settings across California, including in Los Angeles primary and secondary (K-12) schools.[15] According to a 2018 EdSource analysis, lead levels in water that are below regulatory standards but above health guidance remain widespread in Los Angeles schools.[16] The design and implementation of the lead sampling in schools program in California serve as a key comparison point to AB 2370, as detailed later, because of the similarities between the K-12 and childcare settings.

Mistrust of Tap Water

The relationship between tap water contamination and tap water mistrust is multifaceted. Regardless of the root cause, mistrust of tap water can have direct and indirect adverse health and affordability consequences. Partly as a consequence of lead exposure concerns, low-income households and school attendees in Los Angeles report bearing a substantial out-of-pocket expenditure burden to purchase much more expensive non-tap (e.g., bottled or vended) water. Previous research and our conversations with stakeholders suggest that reliance on tap water alternatives may be prevalent in educational settings such as child care centers.[17] The prevalence of alternatives such as sugary beverages in child care centers raises concern, as water intake among most children is already insufficient,[18] and in California almost half of all children already consume at least one sugary beverage a day.[19]

Legislative Responses to Lead in Water

The good news is that, although the damage from lead exposure is permanent, that exposure is also preventable. Prompted by this knowledge, advocates, legislators and public agencies set goals and standards at both the federal and state level to protect children from lead exposure to improve their life outcomes. Figure 3 provides a timeline of these responses in California.

Federal

The 1974 Safe Drinking Water Act (SDWA) brought sweeping changes to the United States' drinking water systems by authorizing the US Environmental Protection Agency (EPA) for the first time to set standards for any contaminant in public water systems that adversely affects health. The original SWDA set a maximum contaminant level goal of zero for lead.

An equally important and lead-specific federal law was the 1991 Lead & Copper (LCR) Rule.[20] The rule requires water systems to monitor lead levels at consumers' taps. However, due to cost and technical obstacles, testing only occurs at the taps of a small fraction of the overall customer population. The LCR rule is important because it sets an "action level" for water systems that exceed 15 parts per billion (ppb), which remains in place today. While this actionable standard is important, again it sets a regulatory standard well above any health standards for lead in drinking water, which are set at zero or near zero by all credible sources.

In 2006, the EPA also released a "Training, Testing, and Taking Action" guidance known as the 3Ts (revised in 2019). This toolkit was designed to assist schools and child care facilities implement voluntary lead in drinking water testing as LCR testing alone would not guarantee the test of most, much less all, taps in these settings. However, the 3Ts suggested a higher action level of 20-ppb, which is above the existing regulatory standard of 15-ppb, and again is not sufficiently protective of health risks to young children.

State

Over the past decade, at least three major legislative responses relevant to ECE settings have focused on reducing and mitigating lead exposure in drinking water in California and promoting healthy beverage choices. The first, AB 1953 (2010), aimed to reduce lead in solder, pipes, plumbing, and fixtures that convey drinking water. This was followed by AB 2084 (2012) which requires licensed child care and family day care centers to remove sugary beverages and make clean and safe drinking water readily available and accessible.

The direct precursor to AB 2370, however, is AB 746, which required lead testing of water in all public K-12 schools, public preschools, and child day care facilities located on public school property by July 2019. This law passed soon after the Flint scandal drew public attention to the issue. While some schools and school districts imposed stricter standards, the law only requires action at the 15-ppb level. Despite these pieces of legislation, a clear need existed to mandate testing and remediation of lead issues particular to licensed child care settings in California, thus prompting the passage of AB 2370.

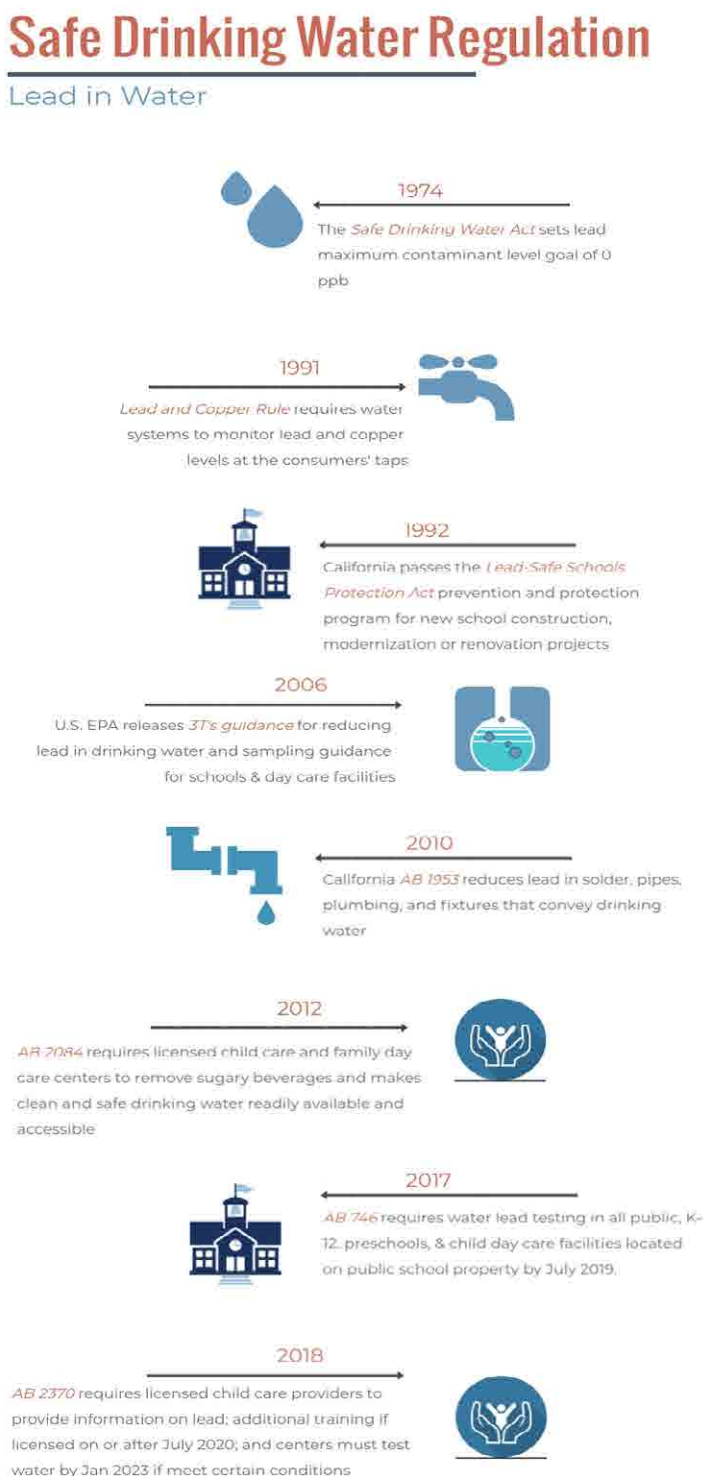
Other states have passed similar laws post-Flint to mandate lead testing and remediation in both schools and child care settings, but with widely-varying standards, guidance and support.[21] A recent

scorecard by CALPIRG evaluates the laws and policies in 31 states and Washington D.C. on how well they protect children from lead in drinking water at school. CALPIRG suggests that more than half of the states failed to establish any meaningful law or incentives for schools to reduce risks of lead in drinking water.[22]

Local

The Los Angeles County Department of Public Health also maintains a Childhood Lead Poisoning Prevention Program[23] to prevent and respond to lead poisoning incidents among children residing within the county. Based on conversations with the County, this effort includes limited blood lead level testing and lab testing for lead in drinking water, but only in response to incident reports as this capacity could not be scaled up to mass testing with current resources. We are not aware of any other countywide or localized programs or interventions relevant to the identification or remediation of lead in drinking water in ECE settings in Los Angeles.

Figure 3: Timeline of Safe Drinking Water Regulation



Lessons from AB 746 Implementation in Los Angeles

Childcare centers and K-12 schools are similar in terms of their responsibility for their own premise plumbing, their particularly vulnerable populations, and the laws required around lead testing in their facilities. Thus, we analyzed data on the prevalence of lead in Los Angeles County schools obtained from AB 746 reporting in order to draw potential lessons learned for AB 2370.

In October 2017, California passed AB 746, a law requiring community water systems serving public K-12 schools to collect and analyze drinking water samples from up to five taps at each required school before July 1, 2019. If tests exceed the U.S. Environmental Protection Agency regulatory standard of 15 parts per billion of lead, which again is not nearly as strict as health guidance for lead prevention, schools must take action by shutting off the water source and providing both short-term and long-term replacement potable water sources. While private schools are not required to test their water, they can opt to do so.

The California State Water Resources Control Board, the agency responsible for administering the program, makes the sampling result data received by its Division of Drinking Water available to the public. The data are updated monthly and include results from AB 746 in addition to schools (both public and private) not required to test but that requested sampling by November 1, 2019 under the 2017 Public Water Supply Permit Amendment.[24] The board's website contains monthly updates of test results.[25]

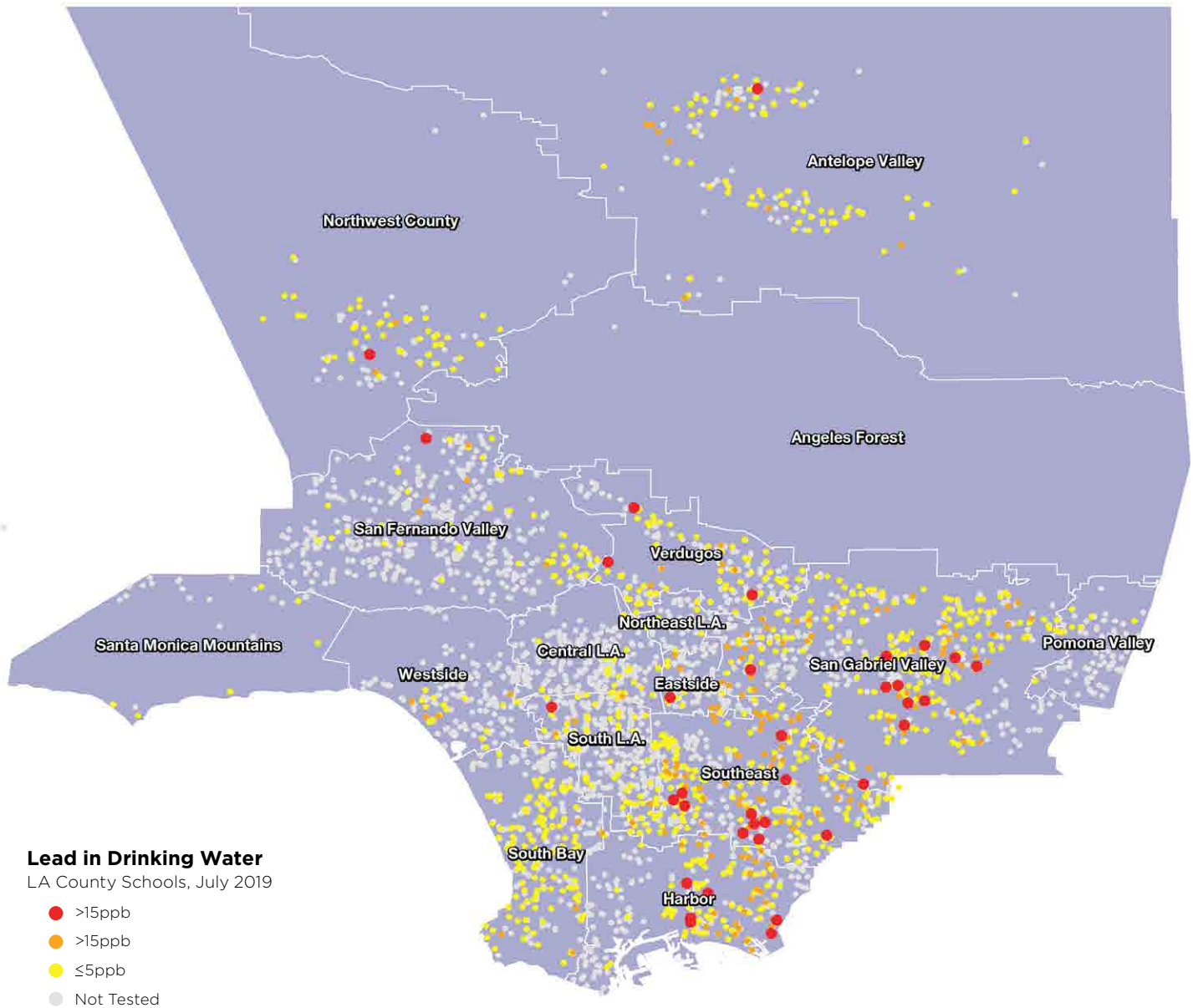
Further, under AB 746, water systems are responsible for contacting schools in their service area, developing a sampling plan, and conducting sampling. By contrast, draft guidance for testing in childcare facilities is more protective of public health than the schools program because it requires testing of all water points used for drinking purposes, and requires remediation for any test found to be above 5 parts per billion. On the other hand, water systems are not obligated to assist with sampling or testing in the childcare facilities program, despite their unique capabilities and experience in this realm.

Progress and Shortcomings in Lead Testing in Los Angeles Schools

Even with the comparatively lower standards for the schools program and the role of water systems as samplers, we found that by July, only roughly 5,496 school tap points were tested for lead in Los Angeles County across 1,144 K-12 schools.[26] This indicates that less than half of the County's K-12 schools had their water tested for lead (41%) in the initial compliance period.

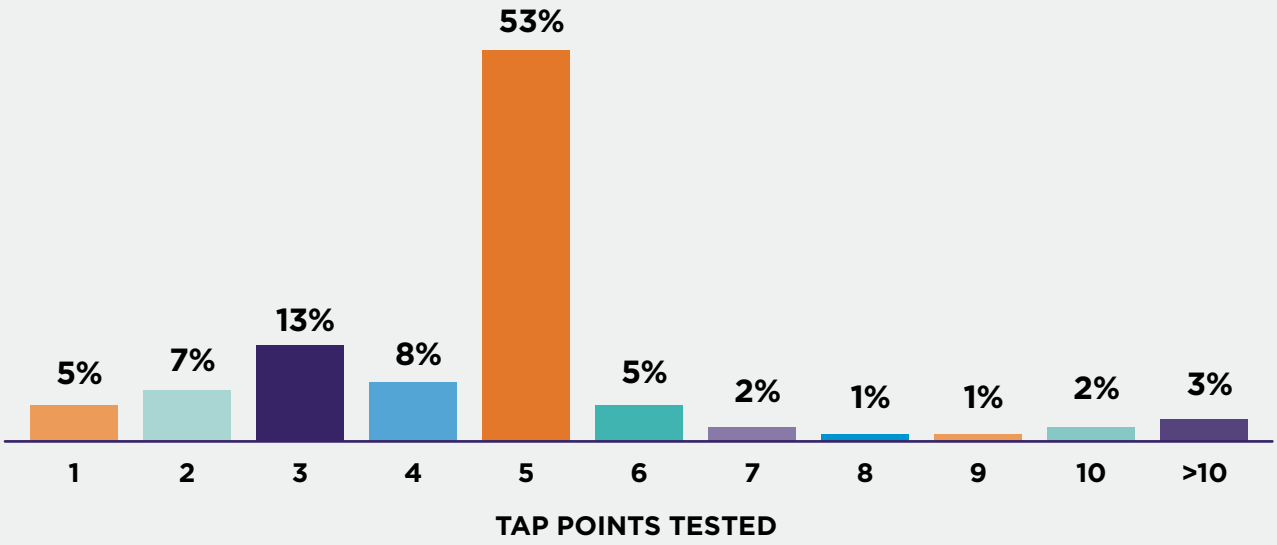
Map 1 shows lead testing in Los Angeles County schools and demonstrates few educational facilities have been tested in pockets in the San Fernando Valley, Central Los Angeles, and Pomona area. Among those schools recorded, the vast majority (97%) did not record levels above the U.S. EPA standard of 15ppb. On average, each school tested 5 tap points (See Figure 1).

Map 1: Lead Testing in Los Angeles County Schools, as of July 2019



E. Amstutz | March 2020
Data Source: California SWRCB

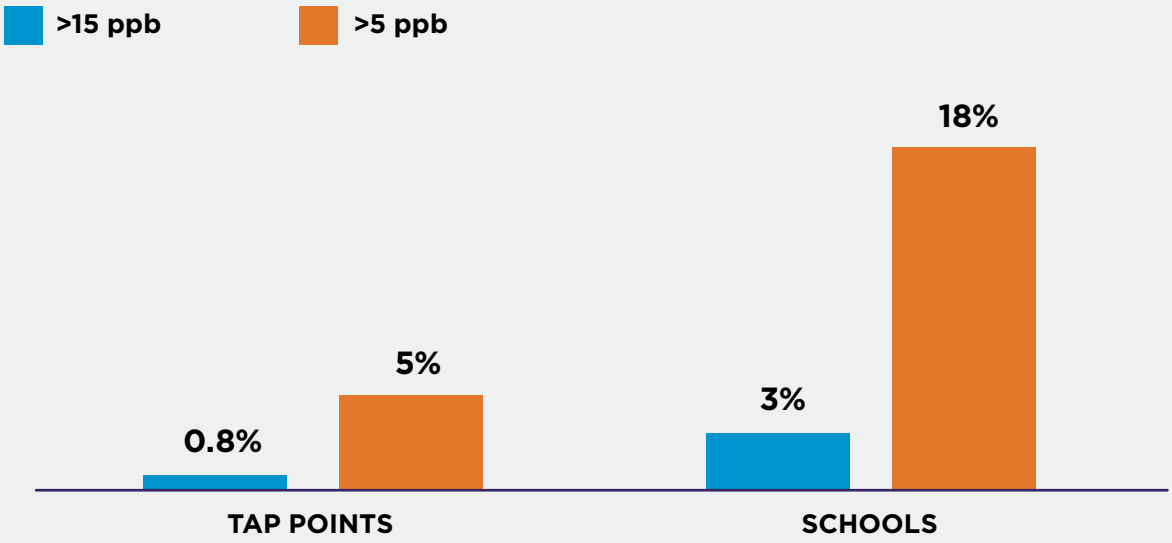
Figure 4: Distribution of Schools by Number of Tap Points Tested, Los Angeles County



Source: Tabulated by authors from California Water Boards' "Lead Sampling in Schools" monthly data released as of July 2019

Only about 1% of all tap points tested exceeded the federal threshold (See Figure 4). However, roughly 18% of schools (205) with at least one tap point and 5% of tap points (299) recorded lead levels over 5 ppb, the action level likely proposed in directives that will be issued to licensed child care centers under AB 2370.

Figure 5: Lead Levels Over Health & Action Levels in Los Angeles County Schools

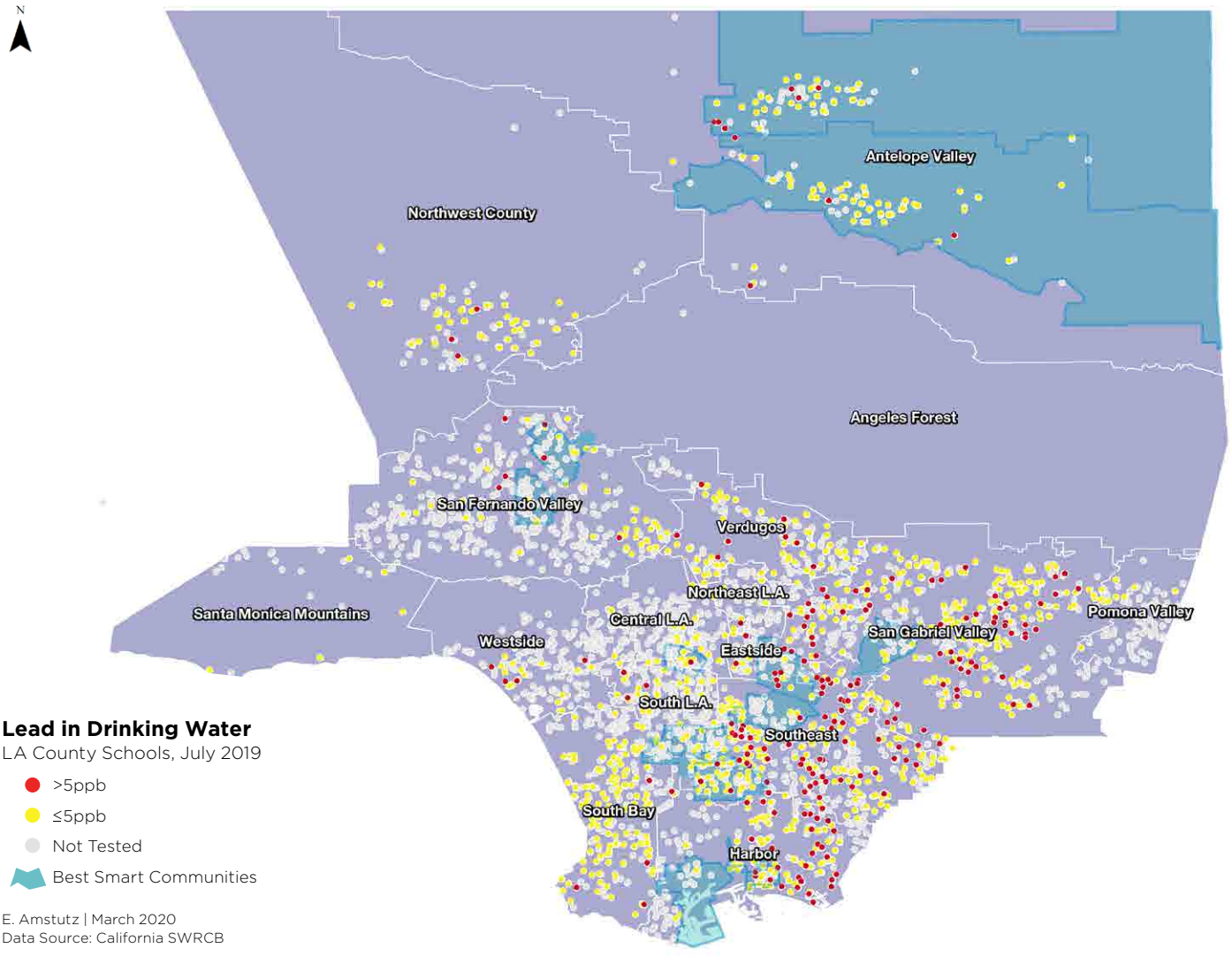


Source: Tabulated by authors from California Water Boards' "Lead Sampling in Schools" monthly data released as of July 2019

Of the schools that completed testing, about 1 in 5 (18%) recorded lead levels over 5 parts per billion (ppb), the action level that appears most likely to be issued in the implementation directives to licensed child care centers under AB 2370. Other states, such as North Carolina, where lead testing has been performed in centers have also found a need for intervention in more than 10% of tested centers despite using a looser standard (15-ppb) for necessary corrective action.[27]

If lead tests in California's licensed child care centers matched the results of the state's schools or centers in some other states—with over 10% of centers having identified lead issues above 5-ppb—the cost to address these issues would likely be several times the current available funding. Even more funding would be needed to facilitate recurrent testing, as required in AB 2370, and to meet the eventual goal of a near zero ppb standard which is closest to public health recommendations.

Map 2: Lead Testing in Schools in Best Start Communities



E. Amstutz | March 2020
Data Source: California SWRCB

Lead Testing in Best Start Regions

The following section examines reported lead levels above 5-ppb for schools within the Best Start Communities regions that were tested under AB 746. This threshold serves as a key comparison point to the 5-ppb action level likely to be implemented through AB 2370. Map 2 shows the schools that tested below and above the proposed action level in red and yellow respectively. As a whole, testing appears more prevalent in schools in Best Start Communities relative to the County.

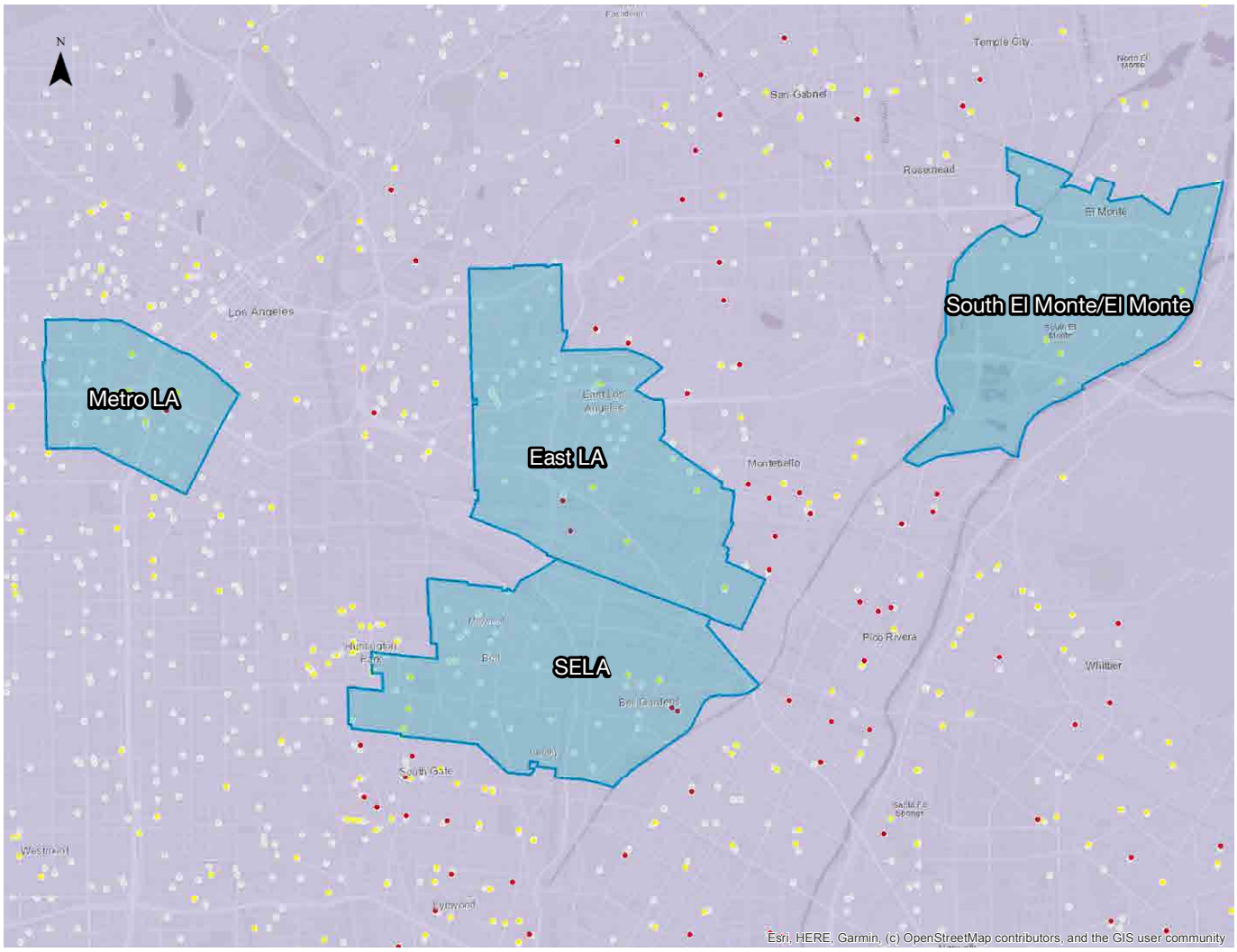
We estimate 41% of educational institutions in the Best Start Regions were tested by July 2019, a share that is slightly higher than the County as a whole (38%). Of schools that reported test results, only 12% reported a 5-ppb or higher lead level, a share that is slightly lower than the County (18%). As shown in Table 1, the Antelope Valley Region tested the largest share of educational institutions. In absolute numbers, the Antelope Valley and South Los Angeles Regions tested the most schools (about 88 and 54, respectively). The Central/East Los Angeles Region had the greatest share of tested schools with at least one tap over the 5-ppb threshold. Maps 3 to 7 provide visual snapshots of the Best Start Communities.

Table 1: Lead Testing in Schools in Best Start Communities

BEST START REGIONS	As a share of all schools*	As a share of tested schools	
	% Tested	< 5ppb	> 5ppb
Region 1 Central and East LA	26%	82%	18%
Region 2 South LA	41%	91%	9%
Region 3 San Fernando Valley	17%	85%	8%
Region 4 Port Cities	55%	86%	14%
Region 5 Antelope Valley	69%	90%	10%
Overall	**41%**	**88%**	**12%**
Los Angeles County	**38%**	**82%**	**18%**

Source: Tabulated by authors from California Water Boards' "Lead Sampling in Schools" monthly data released as of July 2019; for schools with at least one tap point *see footnote 26 for approach to estimating and important caveats.

Map 3: Central/East Los Angeles Best Start Region 1



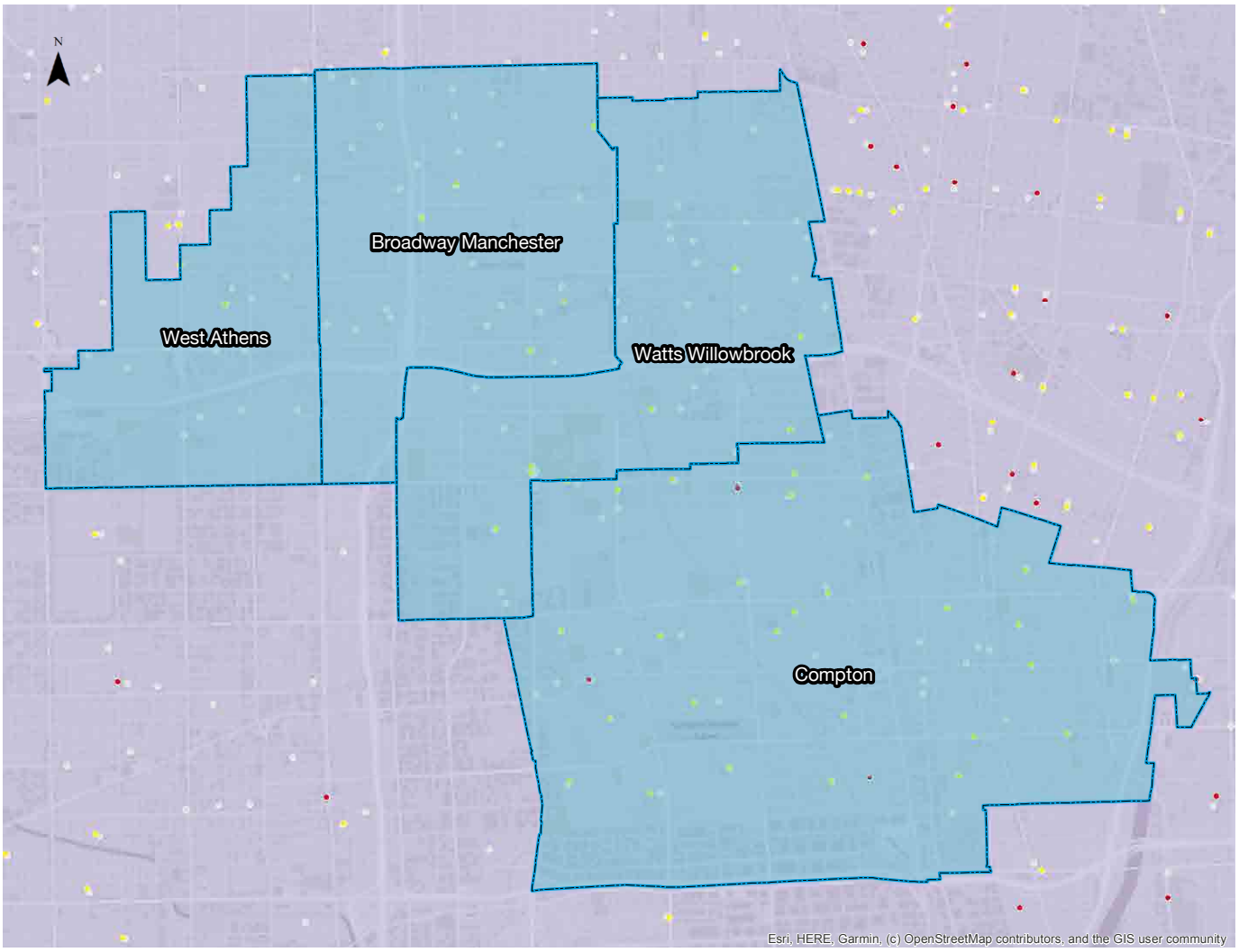
Lead in Drinking Water
LA County Schools, July 2019

- >5ppb
- ≤5ppb
- Not Tested
- Best Smart Communities

E. Amstutz | March 2020
Data Source: California SWRCB

In the Best Start Region 1, exceedances over the 5-ppb threshold are concentrated in the East LA and South LA Best Start Communities; these two communities have, however, tested more than the other communities in Region 1.

Map 4: South LA Best Start Region 2



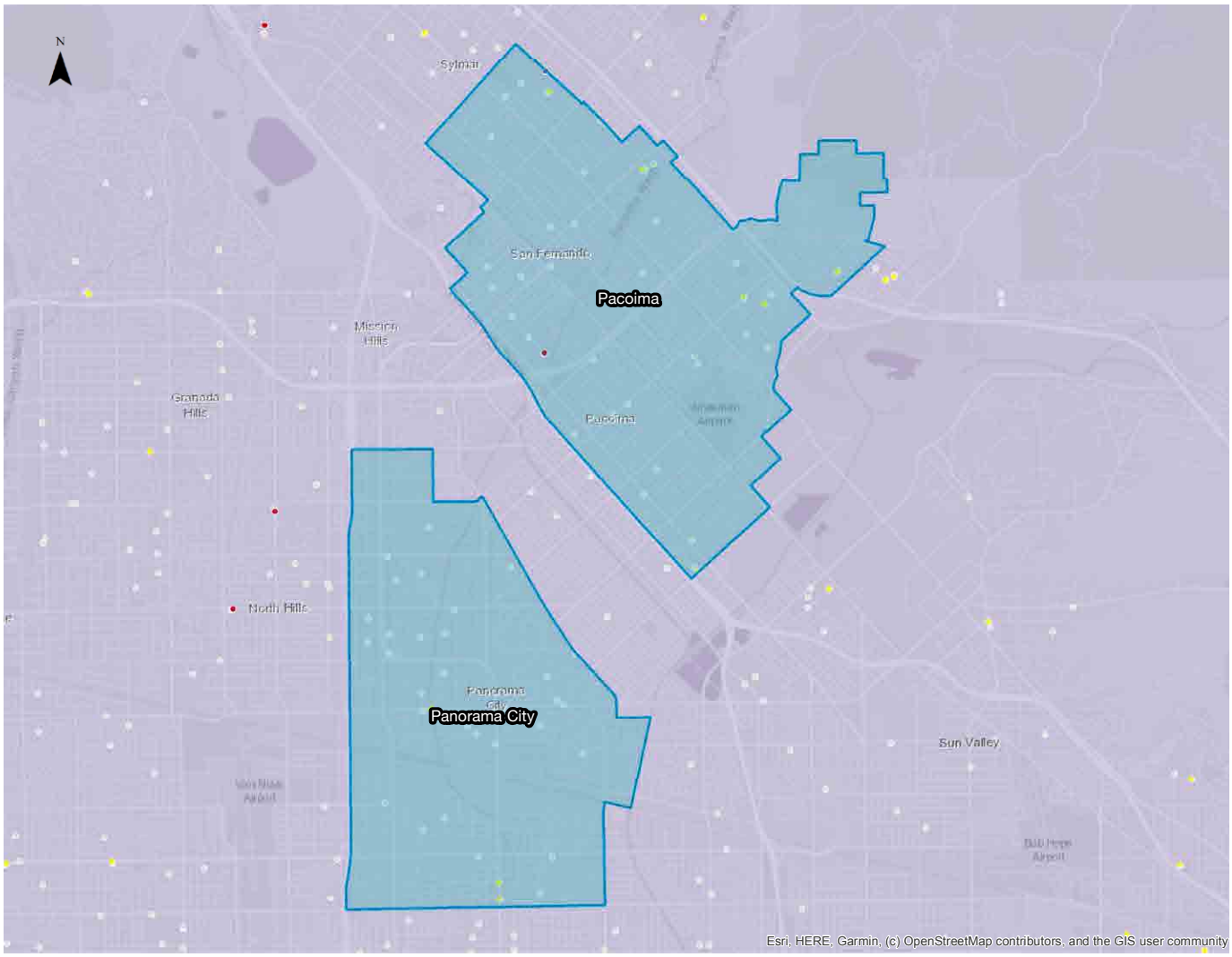
Lead in Drinking Water
LA County Schools, July 2019

- >5ppb
- ≤5ppb
- Not Tested
- Best Smart Communities

E. Amstutz | March 2020
Data Source: California SWRCB

In the Best Start Region 2, schools with exceedances over the 5-ppb threshold are located in the Compton-East Compton Best Start Community; this community, however, tested the greatest number of educational institutions relative to other communities in Region 2.

Map 5: San Fernando Valley Best Start Region 3



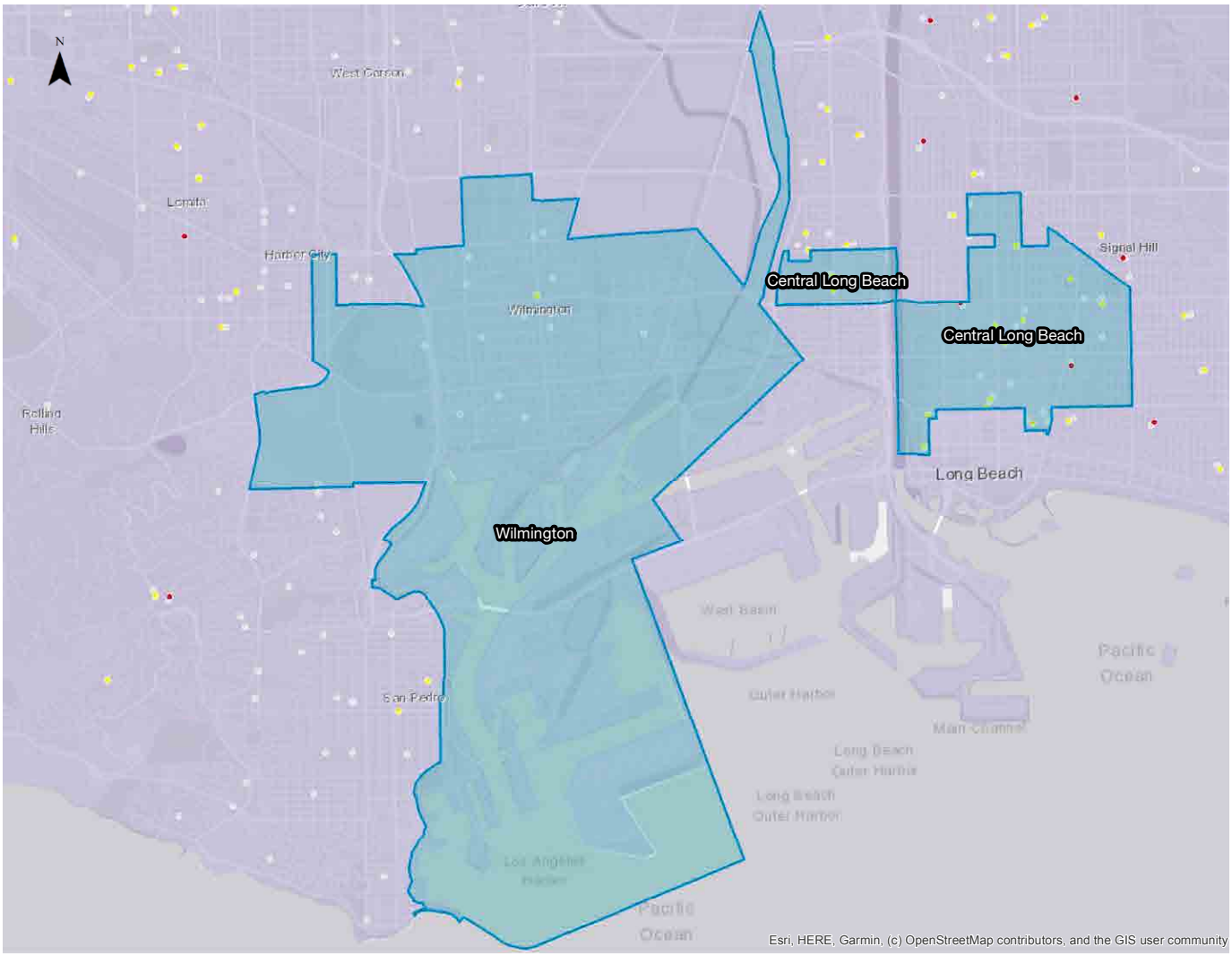
Lead in Drinking Water
LA County Schools, July 2019

- >5ppb
- ≤5ppb
- Not Tested
- Best Smart Communities

E. Amstutz | March 2020
Data Source: California SWRCB

Little testing has taken place at educational institutions in the San Fernando Valley Region 3, which is reflective of testing trends in the larger northeast San Fernando Valley area.

Map 6: Port Cities Best Start Region 4



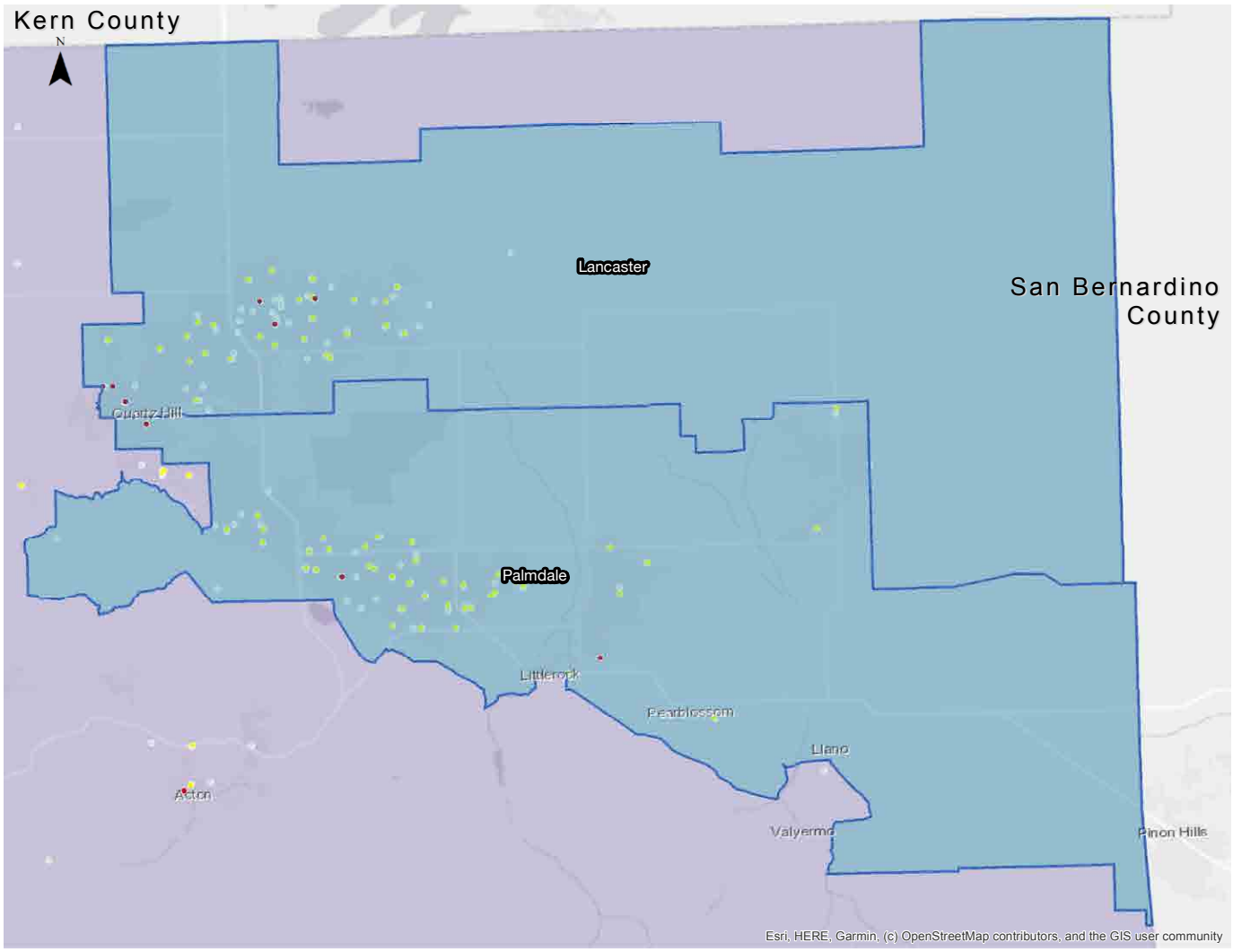
Lead in Drinking Water
LA County Schools, July 2019

- >5ppb
- ≤5ppb
- Not Tested
- Best Smart Communities

E. Amstutz | March 2020
Data Source: California SWRCB

Most of the testing in Best Start Region 4 occurred in the Central Long Beach area.

Map 7: Antelope Valley Best Start Region 5



Lead in Drinking Water
LA County Schools, July 2019

- >5ppb
- ≤5ppb
- Not Tested
- Best Smart Communities

E. Amstutz | March 2020
Data Source: California SWRCB

The Antelope Region 5 has tested the most among all Los Angeles County Best Start Communities

Stakeholder Engagement Activities

To help establish a robust lead testing and remediation program in licensed child care centers based on AB 2370, we convened key stakeholders from three different communities with two objectives in mind. First, we brought together participants to collaboratively answer their questions regarding the legislation and a potential program. Second, we solicited their informed opinions to develop policy recommendations that will help identify current gaps and influence funding for long-term sustainability of a successful program.

Each meeting began with formal presentations on the purpose of these convenings, lead in water, and a summary of AB 2370. A guided working lunch and discussion on AB 2370 took place at the end of the presentations. Following each meeting, we also shared additional resources for learning and involvement with participants.

This report details our synthesized findings and recommendations stemming from these stakeholder discussions and background research for the County and the state. An accompanying snapshot policy brief focuses on top findings and recommendations for Los Angeles County.[28]

Convening 1: Advocates & Regulators

Our first convening took place on September 16, 2019 at the UCLA Luskin School and included 28 participants in person and 13 participants joining online or via phone. Participants for this convening mainly represented the environmental and environmental justice advocacy, regulatory, drinking water provider and academic communities.

Presenters included representatives from the sponsors of AB 2370—Assemblymember Christopher Holden's Office (AD 41) and the Environmental Working Group—on the motivation for the bill's passage and next steps, as well as a representative of the California State Water Boards on the role of different state agencies and draft water sampling guidelines. Prior to the meeting, participants were asked to review the bill language. During the working lunch, participants reviewed the sampling guidelines. During the guided discussion session, we asked participants the following questions:

Guided Discussion Questions:

- What is your feedback on sampling guidelines?
- How can we help facilities that may want to comply to do so?
- What do you need to know and what did you not hear today to prompt you to be involved? How would you like advocates to be involved?
- What kind of information would be needed to get a meaningful/larger pot of money?

Key Takeaways

At this convening, participants voiced significant support for the passage of AB 2370 and for the program focus on implementing a more progressive lead action level than any previous effort in California. They also raised concerns, and identified needs as well as opportunities for collaboration. Participants raised three major concerns: clarification on what level of lead is safe and how that corresponds to what is permissible under regulatory standards, a lack of meaningful engagement with child care centers during the program design phase, and the added burden the new law places on the shoulders of child care centers as opposed to water systems.

As one advocate notes, **"The program adds a lot of things for child care centers to do. Sampling is put on the child care center. Centers need help interpreting results and more information on what it takes to do corrective action."** Participants also raised the need for: outreach efforts to child care centers in the program development phase and communication of requirements and resources available for centers before the program is rolled out.

"The program adds a lot of things for child care centers to do. Sampling is put on the child care center. Centers need help interpreting results and more information on what it takes to do corrective action."

Further, participants voiced a need to implement the program in a way that does not inadvertently contribute to the misperception of tap water as unsafe. For instance, one participant raised the following concern: **"Need implementation that does not raise a red flag or add to misperception that tap water quality is not safe".** This last concern made clear the need to engage with drinking water providers to raise awareness about tap water quality, even though providers have no formal role in the program, **"We need to build opportunities to talk with municipal water providers," expressed one participant.** Other areas of need include increasing communication between child care centers and creating a support network.

Convening 2:
Parents & Other Community Stakeholders

Our second convening took place on September 26, 2019 at Dollarhide Community Center in Compton, California at the monthly Community Partnership Meeting for the Best Start Compton-East Compton group facilitated by the organization Communities in Motion. A total of 52 individuals participated: 25 residents and a combination of representatives from child care agencies, community-based organizations, and elected officials and staff. We presented broader information on lead in water and AB 2370, followed by a breakout session to solicit community feedback. The convening was simultaneously translated to Spanish. We also provided the informational flyer on lead released by the California Departments of Social Services and Public Health to help licensed child care centers comply with the educational component of AB 2370. During the guided discussion session, we asked participants the following questions:

Guided Discussion Questions:

- What is your feedback on the lead flyer?
- What benefit does this bill bring to your community?
- What questions or concerns do you have over this program?
- How can you play a role in helping implement this in our local community?
- What can you do as the Best Start Community Compton-East Compton to better work with child care centers on these types of efforts?
- What recommendations do you have for the program based on what you've heard?
- Do you have other concerns or thoughts on safe drinking water?

> "If I wanted to see if my child was affected by lead, is there a test that can be done?"
>
> – Parent from Compton

Key Takeaways

Participants in this convening largely perceived this bill as an important step towards protecting their children's health. The major concern brought up during the convening was related to enforcement mechanisms, including oversight and consequences. Another important topic brought up was the availability of California Department of Social Services (CDSS) resources in multiple languages and alternative mediums for reaching hard-to-reach parents. There was also a general need to better understand sources of lead exposure, including who is legally responsible for repairs in a rented facility, and how the bill fits in with existing lead exposure screenings performed in conjunction with regular child wellness exams. One parent asked, **"If I wanted to see if my child was affected by lead, is there a test that can be done?"**

Convening 3:
Parents, Child Care & Early Learning Centers

Our third and final convening took place on January 29, 2020 at the Salvation Army Siemon Center in South Central Los Angeles in partnership with the Child Care Alliance-Los Angeles. The convening was capped at 61 registered participants to ensure a small but diverse group of participants and allow ample time for the feedback session. A total of 42 participants attended, including a handful of individuals that did not pre-register.

Attendants mainly included child care advocates and centers, parent advocates, and DSS representatives. Simultaneous translation was provided in Spanish. As with other convenings, we provided general information on lead in water and AB 2370. A representative from the CDSS child care advocate program presented additional information on the new law and Provider Information Notice (PIN 20-01-CCP).

During the working lunch, participants were asked to review the PIN. Participants were also provided with the California Departments of Social Services and Public Health lead in water flyer. During the guided discussion session, we asked participants the following questions:

1. What is your feedback on information provided in the PIN?
2. What benefit does this bill bring to your child care center?
3. What questions or concerns do you have over this program?
4. How can we play a role in helping successful implementation at your child care center?
5. What recommendations do you have for the program based on what you have heard?

Key Takeaways

As at other convenings, but particularly notable given the audience, attendees were largely unaware of the details of AB 2370 or its three major components: education dissemination on lead, additional training for licensing, and drinking water testing. In addition, participants expressed concerns that the educational flyer designed to carry out the first component of the bill was too dense and needed to be written with more accessible language.

> "Would the landlord be required to do a repair?"
>
> – Child Care Provider in South LA

Among many concerns raised, participants noted a great need for more targeted information on at least three fronts: the process for water sampling and steps to take if the results are "elevated", the identification of which licensed child care centers must comply with each of the three mandates in AB 2370, and information on eligibility for the funds allocated via AB 862. They identified the key challenge in implementation as the added burden placed on child care centers and the limited resources to assist them with compliance, in particular for those that are tenants, asking **"Would the landlord be required to do a repair?"** The conversations with providers also highlighted high levels of existing distrust in using tap water for drinking or cooking, and signaled the potential problem of centers shifting away from tap water toward bottled water long-term in order to avoid dealing with lead remediation. As one provider asked, **"We do not use faucet water, we cook with bottled water. Do we need to get water tested anyway?"**

Other Provider Stakeholder Meetings

From 2018 to present, we participated in CDSS and Water Board meetings and targeted discussions with other key stakeholders involved in program formation, which informed our convenings and this report. This included engagement with the Environmental Policy Innovation Center, the Environmental Working Group, the Los Angeles County Department of Public Health, the Los Angeles Department of Water and Power, the San Francisco Public Utilities Commission, the Sacramento State Office of Water Programs and the UC Nutrition Policy Institute.

We also presented, disseminated information, and gathered feedback on AB 2370 and program design in the following stakeholder venues:

- Childcare Food Program Roundtable, City of Industry, July 2019;
- Childcare Food Program Annual Conference Presentation with University of California Nutrition Policy Institute (UC NPI), Rancho Mirage, October 2019); and
- California Department of Public Health Early Childcare Education Partnership Meeting led by UC NPI, Sacramento, March 2020.

Cross-Cutting Findings

Our convenings, along with other stakeholder engagement and background research, allowed us to identify top opportunities and challenges for the implementation of lead testing in drinking water in Los Angeles County child care centers, particularly in First 5 LA's Best Start Regions. We highlight findings on five major challenges and opportunities that arose during our various engagement activities with child care centers and providers, and early child care education advocates, environmental and environmental justice advocates, drinking water providers, and members of regulatory and academic communities.

1. **Universal Support of Stricter Standards for Testing for Lead in Drinking Water in ECE Settings, as currently envisioned by program implementers**

   Across all convenings, participants understood the importance and motivation for the passage and implementation of AB 2370 as a positive step forward to protecting the health of young children. Stakeholders considered this a **"first step to address any issues"** and **"bring awareness to the community"** about the importance of access to clean and safe drinking water and minimizing lead exposure prevention to help safeguard the safety of children.

   This included uniform support for more strict lead levels in drinking water in early childhood education (ECE) settings than what is used in the schools program and in water systems. The current regulatory standard for lead in drinking water systems and schools in California is 15 ppb, but all stakeholders appeared to agree that 5 ppb or less needs to be the standard for AB 2370. This reflects the current intent of the Water Board and CDSS in developing the program standard. Stakeholders also applauded the efforts by the Water Board's Division of Drinking Water, and AB 2370 Technical Advisory Committee to recommend that CDSS adopt a public health goal of reducing lead in licensed child care centers to near zero ppb in future program implementation.[29]

> "I think the most important thing is the safety of our children"
>
> – Child Care Provider in South Los Angeles

2. **Confusion Regarding Where the Legislation (AB 2370) Fits in**

   On the other hand, there remains widespread confusion about:

   a. how AB 2370 relates to previous state legislative efforts to ensuring safe drinking water in ECE settings, and

   b. the scope of requirements placed on child care centers and water systems for various aspects of implementation stipulated in the law.

Participants commonly raised the question about the similarities and differences between AB 2370 and the already-operating schools program (AB 746), as well as California's longer-standing Human Right to Water legislation. In short, stakeholders did not immediately understand the new benefits and obligations under AB 2370, over and above the existing laws regulating drinking water standards and rights.

A very limited number questioned why a designated program for childcare centers was needed at all, saying things like **"this program is unnecessary because 'we are not Flint, Michigan."** Once they understood the differences between action levels for AB 2370, AB 746 and water systems in general, however, the vast majority questioned why the schools program and water systems did not adopt a lead standard at least as protective of public health as envisioned for childcare centers. Parents and community members in particular were then more concerned about understanding which entities were involved in the legislation and where to obtain culturally-relevant information regarding their rights under the legislation.

One of the main differences between AB 2370 and AB 746 is that drinking water systems are responsible for the testing in schools, whereas the centers themselves are responsible for testing in CCCs. This brought up concerns about the additional burden a new program will place on already-strained child care centers, which typically have little or no designated facilities staff (as opposed to schools and water systems), much less expertise on plumbing issues.

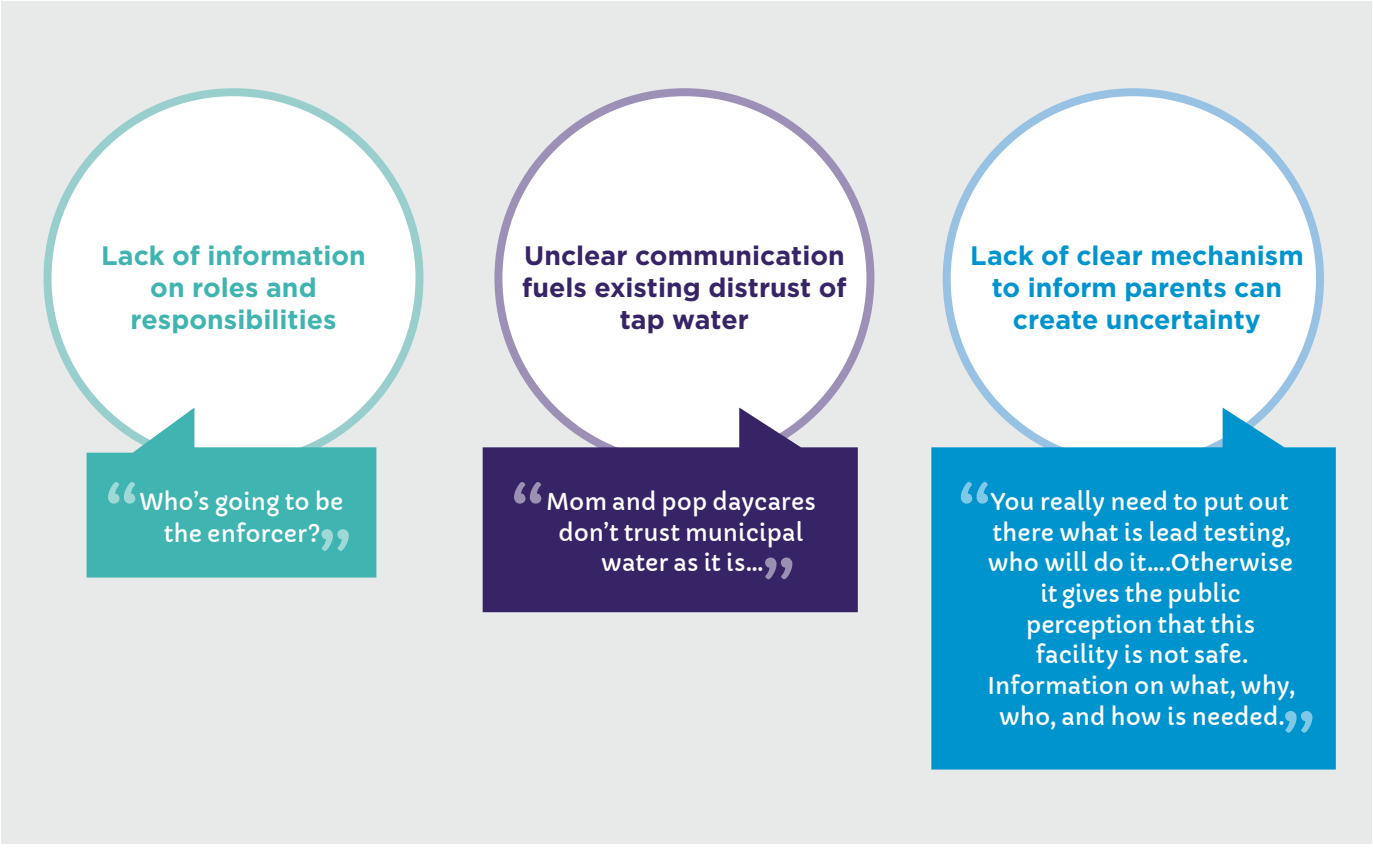
Aside from the costs associated with the program and lack of funding, other burdens identified include locating a qualified sampler, understanding the process for reporting to regulatory agencies, interpreting results, creating a corrective plan and putting it into action, and identifying the best ways to communicate findings to parents. While state agency draft guidelines or guidance address some of these concerns, much of the burden remains on CCCs to acquire knowledge and proactively act on behalf of their children in a realm in which they feel they lack sufficient expertise. As one child care provider stated, **"Will we be left to read the results? How do we interpret the results? We need someone to walk me, talk me through it, the new requirements."**

> "Will we be left to read the results? How do we interpret the results? We need someone to walk me, talk me through it, the new requirements"
>
> – South LA Child Care Provider

3. Common Concerns About Program Design and Implementation

There were several common concerns about program design and implementation, although this topic also produced the widest variety of stakeholder comments. While the lead information flyer, draft sampling guidelines issued by the Water Board and PIN issued by the CDSS addressed some questions, many questions remained unanswered by the resources provided to date, even after the outset of the potential compliance period started in January 2020. The most common concerns related to the exact procedures required for lead testing and remediation as well as how centers were expected to pay for these services.

Overall, participants expressed a need for clarity on which centers are required to test their water and if all water usages and taps need to be tested. As well as a general concern over who would undertake enforcement and oversight of compliance based on the legislation, participants raised concerns about who should do sampling and how, who will assist centers determine when there is a problem, who will report back sampling results to CDSS or the Water Board, what steps centers will need to take for remediation, and what will the timeline will be for these activities.



Most stakeholders expressed a need for more information on the expected cost of hiring third-parties to sample, test, and perform remediation if needed. In the absence of a formal role for water systems in program implementation, the burden for choosing and paying for third party samplers and testers falls on centers—tasks which require a high degree of technical sophistication to get right, as one water expert noted **"There's an opportunity to create a support network. A place where centers can get information, etc. because some of these things you can't just google".**

> "We don't even understand about how much this is going to cost us to address the issue"
>
> – South LA Child Care Provider

Estimates from some major water systems involved in the AB 746 schools program suggest the cost of testing for each facility would be a minimum of several hundred dollars, and perhaps multiples of that depending on the number of tap points in a facility. Estimates on the cost of remediation vary widely depending on the intervention needed. Simply replacing a plumbing end fixture (i.e., faucet) can cost less than testing itself, whereas replacing pipes or connecting features may be considerably more.[30] Regardless, most stakeholders at the convenings suggested that centers could not reasonably be expected to bear any additional cost burden due to the lead testing program.

4. Desire for More Formal Stakeholder Engagement and Public Participation in Program Design and Implementation

The convening also revealed the widespread desire for a formal stakeholder engagement process and opportunities for public participation in state agency guidance and program design. **Agencies involved in developing and implementing a program based on AB 2370 have not yet developed a sufficiently-robust and inclusive public participation process. The lack of a well-advertised, formal process has limited the input of child care centers and child care advocates in the formulation of agency directives and guidance.**

> "The [participation] is convoluted, it is different from other processes; send emails, send letters; go on record"
>
> – Environmental Advocate

Attendees at our convenings and the public venues where we spoke were largely unaware of the details of AB 2370 and did not know of the existing public stakeholder group. Consequently, across all convenings, participants raised concerns about the lack of meaningful engagement with child care

centers during the program design process. Childcare advocates and providers also expressed willingness to engage with agencies to inform the development of the program to help ensure successful implementation but were concerned about the lack of a clear public participation process to do so. As one participant noted, **"it is different from other processes; send emails, send letters; go on record."**

Convening participants also stated the need for more translation and distribution of existing guidance materials for English-alternative speaking communities. The fact that the basic lead risk flyer had not been translated at the time of the convenings and the limited capacity for non-English engagement with the agencies was worrisome. Further, participants stated the need for **"literature in language that is simple to understand for parents and is inviting to read."**

5. Universal Need for More Technical Assistance Tools and Funding to Ensure Program Success

The last major finding was a universally-recognized need for more technical assistance tools and funding for centers beyond those stipulated in the authorizing legislation in order to make program implementation a success.

For technical assistance, participants noted the need for more targeted information on how to select samplers and plumbers, and expressed confusion on conflicting guidance about the potential mediating role water systems can play in connecting CCCs with third party samplers and testers. They also noted a desire for a platform or network to enable information sharing among child care centers to shed light on currently unknown costs associated with sampling, remediation and implementation processes. For instance, various providers and advocates noted **"there's an opportunity to create a support network"**. This could be a place where **"centers can get information, etc. because some of these things you just can't google."** There was also interest in **"form[ing] a partnership with directors of centers to better inform parents and community members."**

Most pressingly, everyone recognized the need for more access to financial resources to offset the cost of testing, remediation planning, and action, not to mention reporting to agencies and parents. The $5 million currently allocated to be distributed to a subset of centers was seen as insufficient to reach those in need. Stakeholders requested more concrete information on other potential or likely funding streams which might be secured by the state or the County to support implementation.

Policy Recommendations

Based on our findings, we make several recommendations to help establish a robust lead testing and remediation program in child care sites.

1. **Given their unique capabilities and experience, water systems would ideally be involved in directly performing sampling and testing in child care centers, as in the schools program.**

2. **In the absence of a formal role for water systems in program implementation, more guidance should be given by the Water Board or contractors to child care centers on how to choose third-party testers and plumbers and the expected costs of these services.**

The schools program obligates water systems to perform sampling and arrange testing, and many of these systems also advise schools on remediation strategies. Given that systems are not currently asked to play this role in the implementation of the childcare centers program, either one of the state agencies or a network of non-profit contractors must be engaged to provide consistent and detailed assistance to centers. This support must go beyond written materials to provide direct consultative support.

3. **In light of implementation delays in the schools program, clearer compliance goals should be set and reported by CDSS for the childcare centers program to ensure that all centers have their facilities tested in a timely manner.**

Compliance with the schools program was not timely in many cases, even though schools are often better resourced than childcare centers and they had the support of water systems in implementation. The state should lay out more detailed, potentially staggered, numerical goals for all childcare centers to comply with AB 2370. This appears feasible given that the state of North Carolina recently announced a similar law but with mandatory compliance within one year, and with the support of centers themselves.[31]

4. **Similarly, centers that identify lead exceedances need more direct assistance from state agencies or their contractors in order to quickly return to full compliance in a cost-effective manner, rather than just being instructed to do so.**

This recommendation could be supported by providing modest funding and state support to develop and sustain a center and parental educational campaign, perhaps run through the California Child Care Resource & Referral Network which already has substantial experience in effective communication with centers.

Important components of this campaign would include best practices from states and cities that have implemented similar programs.[32] These best practices usually include a communications plan to inform parents before testing begins, when results are in, and after remediation to avoid misperceptions that water is not safe or that centers are trying to hide problems.[33]

> "Centers need guidance developed for them before requirements go out to them"
>
> – Child Care Advocate

5. **To ensure drinking water equity in California, the same higher standards of testing and actionable lead levels proposed for childcare centers should be employed in the school lead testing program, as well as adopted for testing in family child care homes.**

This specific recommendation was voiced by several stakeholders. In light of confusion regarding different standards and timelines for these three at-risk populations—despite the overarching legislated Human Right to Water—the most straightforward path seems to be unifying program procedures over time. This would include requiring testing in home settings, a step which state officials have specified as a goal but which has not yet been formally pursued. If deemed impossible or ill-advised to unify standards, the state should give explicit, health-based reasoning for maintaining different standards.

6. **To ensure water affordability and public health in urban areas such as Los Angeles, parallel education and training measures should be undertaken to ensure that the program does not increase tap water mistrust where trust is merited. This is all the more essential during crises such as presented by COVID-19.**

Mistrust of tap water in community settings is a concern prevalent among many Angelenos. Roughly 20% of households in the greater Los Angeles metropolitan area believe their tap water is "unsafe for drinking or cooking" (See Figure 5).[34] The first goal of AB 2370 is to reduce lead exposure in drinking water in ECE settings. An important secondary goal, given current levels of tap water mistrust in Los Angeles, must be to enhance trust in drinking water in ECE settings when merited. If poorly or partially implemented, however, AB 2370 could lead to more distrust in tap water, even in settings where such concern is unmerited. For instance, one child care provider noted that **"...for one of my sites, parents wanted to bring bottled water once they got the [lead] flyer; the local water agency had also sent information about water problems so it didn't help".**

As mentioned above, the R&R network may be poised to assuage broader concerns about tap water raised by implementation requirements in CCCs. Institutions such as the University of California Nutrition Policy Institute or environmental justice non-profits experienced in providing technical assistance to communities to address water quality concerns vvmay need to be brought into this process.

> "...for one of my sites, parents wanted to bring bottled water once they got the [lead] flyer; the local water agency had also sent information about water problems so it didn't help"
>
> – Child Care Center Director

7. **In light of the limited public engagement to develop draft directives to date, CDSS should make opportunities for formal stakeholder engagement and public participation more evident and lay out a concrete timeline for public comments and implementation.**

A chorus of stakeholders signaled a need for a more robust formal consultation plan about the process of program development and compliance tracking. The current mechanisms used by agencies to put out information to centers do not reach their entire intended audience, as they largely rely on Child Care Licensing Program (CCLP) PINs delivered online through the licensing website or via email. However, nearly all providers and advocates we spoke to had not received or reviewed the PINs. Further, the PINs related to AB 2370 are only available in English and Spanish.

> "How do we get Provider Information Notices?"
>
> – South LA Child Care Provider

This current communication and participation gap might be met by a combination of engagement activities, including, but not limited to:

- highlighting program development discussions and decisions at agency meetings made available (and communicated widely) to the public,
- holding agency public workshops, potentially regionally throughout the state,
- developing a formal technical advisory group for program development,
- more routinely releasing state guidelines with formal public comment and agency response processes,
- beyond CDSS' more routinely releasing state guidelines with formal public comment and agency response processes, and
- beyond CDSS' existing webpage, creating and broadly advertising well-designed, designated and search engine-friendly webpages with program updates and contact information on agency websites.

8. **The state legislature and counties should provide substantially more funding for testing, interim water, and long-term remediation beyond the existing $5 million grant program and any U.S. EPA supplement. Funding could be allocated either through existing public sources such as Water Board SAFER funding and LA County Measure W, or through designated new sources.**

Above all else, additional funding will be key to ensuring program success. The $5 million of currently available statewide funding is, for reasons of practicality, only offered to a certain subset of centers, and may be used up by one-time testing for less than half of the centers alone. If CCCs experience results similar to the over 10% of Californian schools and childcare centers in other states that identified lead issues above 5 ppb, the need for funding may be 5-10 times the current availability. This leaves out the need to fund recurrent testing, or meet the eventual goal of near zero ppb.

Funding for the program could potentially be allocated from the $130 million annually made available through the state's new Safe and Affordable Drinking Water Fund (SB 200) or the $300 million made available annually to Los Angeles County for its Safe, Clean Water Program (Measure W). Given that lead testing in childcare centers is not central in either of these efforts, and given the existing competition for various uses of these funding sources, significant allocation from either seems unlikely. Any allocation would be helpful to kickstart compliance.

What seems necessary, however, is more substantial, designated funding by the California legislature now that the compliance period for AB 2370 is underway. This recommendation was echoed by several stakeholders instrumental in the passage of AB 2370, who saw this bill as setting the stage for further state funding.

Despite the challenges of securing additional funding, especially in the current covid-19 crisis environment, a clear legal mandate and moral imperative exists to support the identification and elimination of lead problems in drinking water which young children in California rely on. Without this support, California is unlikely to fully realize the vision of AB 2370 to improve children's life outcomes.

Endnotes

[1] SWRCB Media Release. 4 May 2020. "$5 million Allocated for lead testing in California Child Care Centers."

[2] SWRCB. 16 Oct 2019. Informational item regarding testing and remediation of lead in drinking water at licensed child care centers. Board meeting session, Division of Drinking Water and Division of Financial Assistance.

[3] CDC. (2013). "Childhood Lead Poisoning." *Childhood Lead Poisoning Prevention*.

[4] Lanphear, B. P. (2015). "The impact of toxins on the developing brain". *Annual Review of Public Health, 36*, 211-230.

[5] CDC (2019). "Childhood Lead Poisoning Prevention: At Risk Population." Childhood Lead Poisoning Prevention. Available at: https://www.cdc.gov/nceh/lead/prevention/populations.htm

[6] Council on Environmental Health (2016). "Prevention of Childhood Lead Toxicity". *Pediatrics*, 138(1).

[7] National Toxicology Program. (2012). NTP Monograph: Health Effects of Low-Level Lead.

[8] CDC (2019).

[9] CDC (updated 2020). "Childhood Lead Poisoning Prevention: Sources of Lead."

[10] Council on Environmental Health (2016).

[11] Triantafyllidou S, Edwards M. (2012). Lead (Pb) in tap water and in blood: Implications for lead exposure in the United States. *Crit Rev Environ Sci Technol*. 42(13):1297–1352.

[12] Shannon M, Graef JW. (1989). Lead intoxication from lead-contaminated water used to reconstitute infant formula. *Clin Pediatr (Phila)*. 28(8):380–382.

[13] Hanna-Attisha, M., LaChance, J., Sadler, R. C., & Champney Schnepp, A. (2016). Elevated blood lead levels in children associated with the Flint drinking water crisis: a spatial analysis of risk and public health response. *American Journal of Public Health*, 106(2), 283-290.

[14] Council on Environmental Health (2016).

[15] EdSource is an independent, nonpartisan, not-for-profit organization whose mission is to clarify complex education issues and to promote thoughtful policy. Savidge, N. and D. J. Willis. (2018). "Lead problems in water linger at Los Angeles schools, despite years of testing and repairs."

[16] Rumpler, J., and E. Dietz. (2019). "Get the Lead Out; Ensuring Safe Drinking Water for Out Children at School". *Environment America Research & Policy Center & Calpirg Education Fund.*

[17] Lee, D. L. (2020). Status of Beverages Served to Young Children in Child Care After Implementation of California Policy, 2012–2016. *Preventing Chronic Disease*, 17.

[18] Kant, A. K., & Graubard, B. I. (2010). Contributors of water intake in US children and adolescents: associations with dietary and meal characteristics—National Health and Nutrition Examination Survey 2005–2006. *The American journal of clinical nutrition*, 92(4), 887-896.

[19] Wolstein, J., & Babey, S. H. (2018). Sugary Beverage Consumption Among California Children and Adolescents. *UCLA Center for Health Policy Research*.

[20] Currently being revised for the first time, but the substance and timing of the revision remains unclear, despite the urgency of the situation as demonstrated in Flint and elsewhere.

[21] For instance, see Vedachalam, S. 2018. Lead in Drinking Water: Post-Flint Media Coverage and Evolving Laws in the Northeast-Midwest Region. Northeast-Midwest Institute Report, 46 pp; Cradock et al. (2019). Study – Early Adopters: State Approaches to Testing School Drinking Water for Lead in the United States.

[22] Rumpler, J., and E. Dietz. (2019).

[23] See http://publichealth.lacounty.gov/lead/AboutUs.htm

[24] SWRCB. (2020). *Lead Sampling of Drinking Water in California Schools*. Accessed 30 March.

[25] SWRCB. (updated April 2020). "Lead Sampling of Drinking Water in California Schools."

[26] It is difficult to derive an accurate share of schools tested as private K-12 institutions are given the opportunity to opt-in and report under AB 746 as well as schools that requested testing but were not required to. Further, we could not identify a reliable count of schools in Los Angeles County. Using a variety of lists, we estimate there to be around 3,000 educational institutions that include private, public and charter K-12s as well as alternative education centers, child care centers, and special education facilities. We estimate roughly 2,800 private, public and charter K-12s according to the Los Angeles County Locations/Points of Interest (LMS Data), version January 2016, another version of this list includes roughly 3,095. However, the California Department of Education California School Dashboard Navigator version 2018 only reports 2,227 schools in the County. It is unclear which types of schools are reported in the Dashboard.

[27] It is unclear how childcare facilities in other states such as Arizona, which has tested over 1,000 facilities for lead in drinking water, would fare using a standard of 5-ppb as an action level. Using the federal regulatory standard of 15-ppb, Arizona found a very low prevalence of problems, but again 15-ppb is not close to any health-based standard.

[28] See snapshot brief on the UCLA Luskin Center for Innovation website https://innovation.luskin.ucla.edu/wp-content/uploads/2020/05/Reducing_Lead_in_Drinking_Water_in_Californias_Childcare_Facilities-Snapshot_Brief.pdf

[29] Water Boards. 15 Nov 2019. Guidance for Sampling for Lead in Drinking Water at Licensed Child Day Care Centers (Licensed CCC).

[30] Peter Roquemore (2019). "Stopping the Drain on Household Budgets: Addressing Tap Water Mistrust through Affordable Premise Plumbing Investments." UCLA Luskin Center for Innovation. Masters thesis prepared for the California Municipal Utilities Association.

[31] North Carolina Department of Health and Human Services. (2019). New Rule Requires Testing of Water for Lead Contamination at Child Care Centers.

[32] For instance, 120WaterAudit has created a series of webinars and resources guides for testing in child care facilities outlining best practices learned from program design and implementation projects they have assisted jurisdictions with.

[33] Redmon, J. H., Levine, K. E., Aceituno, A. M., Litzenberger, K., & Gibson, J. M. (2020). "Lead in drinking water at North Carolina child care centers: Piloting a citizen science-based testing strategy." *Environmental Research*, 109126.

[34] Pierce, G., Gonzalez, S. R., Roquemore, P., & Ferdman, R. (2019). "Sources of and solutions to mistrust of tap water originating between treatment and the tap: Lessons from Los Angeles County". *Science of The Total Environment*, 694, 133646.

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