AUGUST 2018

CALIFORNIA URBAN WATER AGENCIES

We Can Act NOW to Restore Safe and Reliable Drinking Water to Californians

More than a hundred thousand Californians are receiving drinking water from failing systems, which can be unsafe. CUWA and many other entities have studied the challenges of these systems, but because achieving progress has been slow, the struggle continues.

While the State assesses funding options, CUWA believes we can make **immediate progress** by informing and advancing new technical and institutional solutions.

Residents of a trailer park near Fresno are drinking water known to have unsafe water quality. (AP Photo/John Locher) (The Associated Press)

ADDRESS THE ROOT CAUSES OF FAILURE

Systems fail when local leaders are unable to keep up with new and existing requirements and challenges to provide high-quality water. Root causes include lack of technical knowledge, depleted groundwater basins due to overdrafting, not enough dedicated resources to manage or run the system, and/or an insufficient sustaining rate base.

BREAK THE CYCLE

Taking action to address failing systems, and preventing new systems from failing, can break the cycle of unsafe drinking water. Focusing initially on the small systems most severely impacted and serving the highest population will drive early progress and inform next steps.

We can break the cycle of failing systems and address root causes by taking action. Here's how:

1 IDENTIFY WHICH SYSTEMS TO ADDRESS FIRST

A phased approach to address small systems (<10,000 people served) provides the greatest early impact. Though more than 1,100 systems experienced water quality violations in the past five years, significant progress can be made by initially targeting a subset of the most at-risk systems.

2 DEVELOP A STRATEGY TO ACHIEVE COMPLIANCE

Implementing incremental institutional, technical, and operational changes makes it easier to get started quickly and address the full range of issues over time.

3 PREVENT NEW, UNSUSTAINABLE SYSTEMS FROM FORMING

It is possible to "stop the bleeding" by strengthening requirements and incorporating proposed new systems into a broader framework with sufficient rate base, technical capacity, and managerial capacity to be sustainable.

1 IDENTIFY WHICH SYSTEMS TO ADDRESS FIRST

Focus on the most severely impacted systems.

Of the 683,900 people served by small systems with one or more health-based violations over the last several years, 137,500 people are most severely impacted by persistent drinking water quality violations[1]. More than 10,000 of these people are affected by persistent violations of multiple contaminants. These systems present the greatest risks because many of them do not have sufficient resources to address violations.

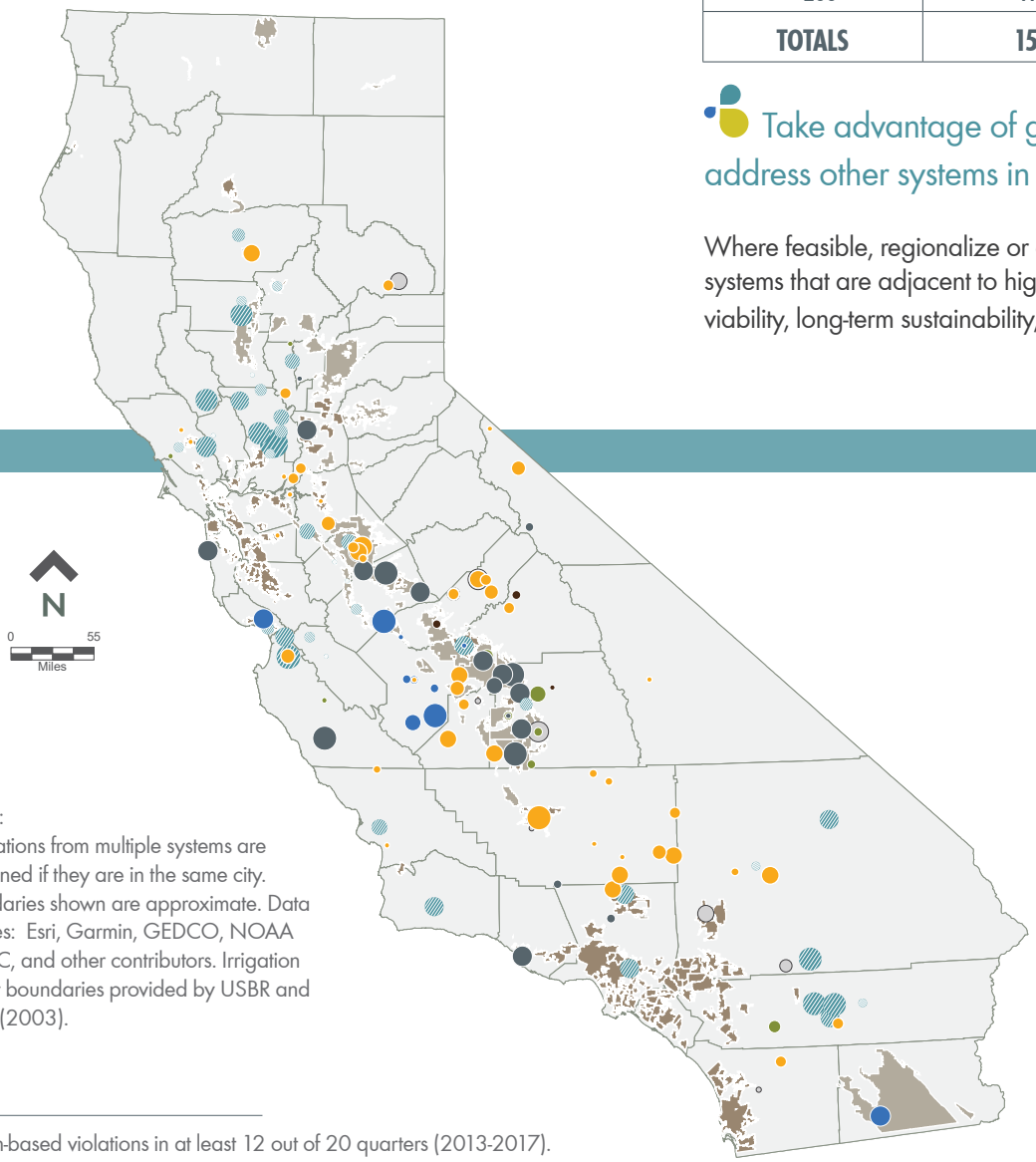
Of those systems, first address those serving the highest population for early impact.

More than 3/4 of the population affected by persistent violations can be addressed by assisting the largest 20% of the systems. Many persistent violations occur in systems with <200 connections. Bringing these systems into compliance may require more creative solutions and potentially higher per capita investments.

Number of Connections	Number of Systems with Persistent Violations	Population Impacted
≥200	33	111,700
<200	117	25,800
TOTALS	**150**	**137,500**

Take advantage of geographic proximity to address other systems in need.

Where feasible, regionalize or consolidate separate small systems that are adjacent to high-priority areas for economic viability, long-term sustainability, and economies of scale.



Notes:
Populations from multiple systems are combined if they are in the same city. Boundaries shown are approximate. Data sources: Esri, Garmin, GEDCO, NOAA NGDC, and other contributors. Irrigation district boundaries provided by USBR and DWR (2003).

LEGEND

Small system population impacted, by city

- 0 - 99
- 100 - 249
- 250 - 499
- 500 - 999
- 1,000 - 4,999
- 5,000 - 9,999
- 10,000 - 20,000

Constituent

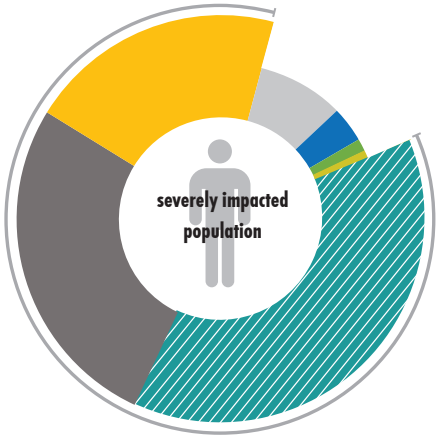
- Chromium VI[2]
- 1,2,3-TCP
- Arsenic
- TTHM
- Combined Uranium
- Nitrate
- HAA5

- Irrigation Districts
- Major Metropolitan Areas (population > 50,000)

[1] Health-based violations in at least 12 out of 20 quarters (2013-2017).

[2] CrVI is not included in the total population affected.

The best way to achieve timely progress is to initially concentrate on the most frequent water quality problems, such as 1,2,3-TCP and Arsenic. This approach can address more than 3/4 of the population[2] most severely impacted by health-based violations and is the quickest way to produce results. Lessons learned from implementation can be applied to the remaining systems so that access to safe water is restored in the most expedient and efficient manner possible.



2 DEVELOP A STRATEGY TO ACHIEVE COMPLIANCE

Build upon ongoing work by others to enable systems that return to compliance to remain in compliance.

Make institutional changes.

Small system operations and Board management cannot be "spare time" activities; they require more focused attention. Look for opportunities to group systems to eliminate redundant overhead and create more technical, managerial, and financial (TMF) capacity. A feasible base rate for a sustainable system is approximately 2,500 to 7,500 people[4], depending on local conditions; new entities may be needed to achieve this level.

Apply treatment technologies that are proven, cost-effective, and reliable.

Assess range of capital costs needed to address systems with persistent treatment violations and leverage existing sources of capital funding, such as SRF, WIFIA, and Proposition 1. In addition, explore new cost-effective, sustainable technologies - particularly those that can be customized or scaled to meet various needs, such as prefabricated treatment systems.

Develop a long-term strategy to support self-sustaining revenue.

Leverage expertise of municipal and private water providers, and support the use of traveling operators (e.g. circuit riders) for O&M assistance. Address long-term financial sustainability by assessing the range of O&M costs for systems and their ability to pay for ongoing activity without permanent reliance on an outside funding source.

Estimated Planning-Level Costs[5] for Construction, Operation, and Maintenance of New Treatment Systems in Severely Impacted Communities.

Contaminant	Treatment Improvements ($M)	Annual O&M Cost ($M)	Total Present Worth[6] ($M)	Total Present Worth per capita ($)	Monthly O&M cost per household ($)
1,2,3-TCP	8.4	1.4	24	370	5
Arsenic	8.5	1.2	23	460	6
TOTALS	**16.8**	**2.6**	**47**	**410***	**6***

* Weighted average

Notes:

- If the Chromium VI standard is set at 10 µg/L as proposed, an additional $390 million (total present worth) would be needed for further improvements.
- The cost of addressing systems with less persistent violations are not included.
- Costs assume systems remain separate.

[3] Potential future violation.

[4] "Small System Water Authority Act of 2018 (AB 2050) Overview of Supporting Funding Model," May 2018.

[5] Costs rounded. For cost assumptions, see www.cuwa.org.

[6] Total present worth is the current value of a future sum of money given a specified rate of return.

3

PREVENT NEW, UNSUSTAINABLE SYSTEMS FROM FORMING

Prevent new failures with more rigorous approval requirements for independent, small systems.

Despite the recent "stop the bleeding" legislation limiting permitting of new unsustainable public water systems, many new development projects continue without appropriate TMF capacity. Consider implementing stronger legislation to require standards of TMF capacity that support responsible development of new, sustainable water systems that can provide consistent, high-quality service to their customers.

Develop with the future in mind.

Encourage stronger coordination with land use planning authorities, Groundwater Sustainability Agencies (GSAs), and the Division of Drinking Water (DDW) on the formation of future water systems. New requirements, such as those under the Sustainable Groundwater Management Act (SGMA), will create additional constraints on accessing certain sources of water.

Increased State leadership can produce results

While the State has existing standards for TMF capacity, more needs to be done to facilitate transfer of local management for struggling systems to institutions and systems that can consistently deliver clean and safe water. Furthermore, making existing funds more easily available now to systems with persistent health-based violations can accelerate progress.

The State has demonstrated impactful leadership during the recent challenges of the drought and can apply that same leadership to break the cycle of unsafe drinking water. CUWA agencies are committed to partnering with the State and other entities to bring leadership and expertise to drive early progress.

Who is CUWA?

Established in 1990, California Urban Water Agencies (CUWA) is a nonprofit corporation of 11 major urban water agencies that collectively deliver drinking water to two-thirds of California's population. The water delivered by the 11 CUWA member agencies is a lifeline that supports California's urban populations and the bulk of the state's $2.7 trillion economy.

To learn more, visit www.cuwa.org