

Trends in California Water Systems Consolidation

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ISSUE

Small water systems are 13 times more likely to violate the Safe Drinking Water Act than large systems and are less resilient in the face of drought and other challenges resulting from the climate crisis. Low-income, rural, and indigenous communities bear the brunt of these consequences, thereby perpetuating inequality. Water system consolidation — or the merging of two or more previously independent water systems — presents one possible solution to many of these challenges.

To advance consolidations, California has developed financial incentives for larger water systems to absorb small systems, introduced new powers to mandate consolidation under specific circumstances, and invested significantly in Technical Assistance resulting in over than 200 completed projects with more underway. Understanding more about these efforts is an important first step towards ensuring that new policies and funding achieve the desired benefits. To this end, UC Berkeley and UCLA researchers compiled a novel dataset of consolidation projects completed between 2015 and 2021.

KEY FINDINGS

Water quality challenges and climate change impacts are driving consolidations. Among systems with data about motives for consolidation, 81% cited water quality compliance concerns. Climate change was the second most common motivating factor cited by more than 10%, including drought, fire, and landslide impacts.

Consolidations involve systems in very close proximity. The median distance between consolidations was 0.174 miles for physical consolidations and 0.751 miles for managerial consolidations. Only nine consolidations spanned more than three miles.

Consolidations are reaching high priority systems like Mobile Home Parks and schools. In addition to reducing the number of regulated water systems gen-

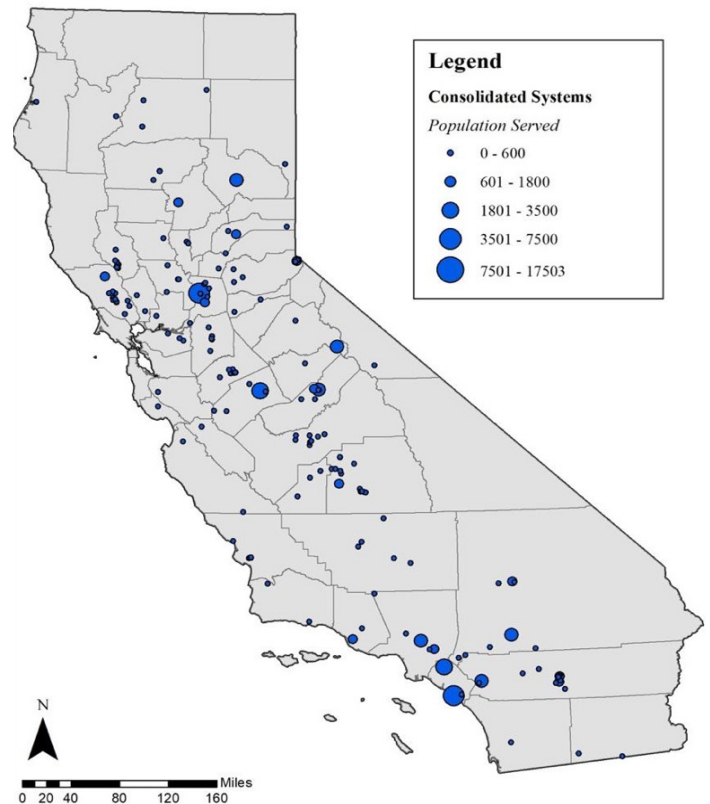


Figure 1. Consolidated systems 2015-2021 by population served.

erally, water systems serving schools and mobile home parks represent a particularly large share of consolidated systems compared to their statewide prevalence.

Both consolidated and receiving systems are generally very small. The median population served by a consolidated water system is just 120. One reason for this is the large number of non-Community Water Systems that have been consolidated (46%). Receiving systems, in turn, have a median population of 7,061. Forty-five percent of receiving systems serve under 5,000 customers.

Consolidations have the potential to increase representation in local water decision-making. Over 60% of consolidated systems are privately owned water systems without elected governing boards. In con-

trast, the most common type of receiving system are special districts (33%) followed by general purpose governments (primarily cities) (29%), which provide state-mandated standards of transparency and open channels of democratic participation. Thus, while Investor Owned Utilities (IOUs) made up a greater percentage of receiving systems than consolidating systems (26% vs. 11%), the overall trend is toward greater community representation post-consolidation.

Consolidated and receiving systems are demographically similar. On average, consolidated community water systems had a lower median household income

(MHI) than receiving systems (\$62,011 compared to \$70,092), both of which are lower than the statewide average. When comparing demographics between pairs of merged systems, however, MHI, racial composition, and average homeownership rates are nearly indistinguishable. In only about 20% of cases do merged systems differ significantly with respect to these considerations.

Low-resource communities are consolidating at lower rates. Compared to statewide averages, 25% of consolidated systems are low-resource communities whereas 49% are high-resource based on rates of homeownership, racial composition, and MHI.

Table 1. Key characteristics of consolidated and receiving water systems.

Statistic	Consolidated systems (n=206)	Unique receiving systems (n=143)
% Groundwater dependent	89%	61%
Median population served	120	7,061
% population that is non-Hispanic white	53%	54%
% of households renter occupied	37%	38%
Median Household Income (MHI)	\$62,011	\$70,092

POLICY IMPLICATIONS

We need to better understand the barriers to implementing priority consolidations and opportunities to address them. The high rates of consolidation among non-residential systems highlights socio-political challenges to community water system mergers that need to be better defined. Further, the demographic similarity between merged systems and the lower rates of consolidation among low-resource communities point to ongoing challenges leveraging consolidation specifically to rectify inequalities between communities including those resulting from racist planning and unequal investment. There is a clear need to better understand existing barriers to these types of priority consolidations and how they may be addressed. Comparing these findings with more recent projects completed under the new state SAFER program may help to understand the role of Technical Assistance and increased investment.

The types of consolidations promoted should be informed by the specific goals sought. Given the diversity of consolidations documented, there is likely also diversity in outcomes. For example, given the very small size of most consolidated systems, consolidation may not meaningfully increase economies of scale as is often assumed. Similarly, that most receiving systems are also groundwater dependent indicates the potential for ongoing water quality challenges. Further investigation of project outcomes could help policymakers promote system consolidation in more targeted ways based on community and state priorities.

Consolidation is not a viable solution for all struggling systems. Given that most consolidations occur between systems less than one mile apart. There is ongoing need to invest in other solutions for the many systems without close neighbors. While managerial consolidations may help bridge this gap, most managerial consolidations also occur between systems one mile apart or less.

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