

# MAVEN'S NOTEBOOK

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## UCANR Survey: Water system consolidations improve water quality, infrastructure

July 14, 2025  
By: UCANR



“Nino, the water’s not coming out right; something’s going on with the well.”

Those words – from Michael Prado Sr.’s goddaughter – are reflective of longstanding water concerns in Monson, a rural community of about 100 people in Tulare County.

Hand turns on a tap with water splashing out of a glass

The desire to improve water quality was the primary motivation for water systems to pursue consolidation projects, according to a survey conducted by UCCE specialist Kristin Dobbin. Photo by Jacek Dylag on Unsplash

“I was one of those people who just used to turn the faucet on and expected the water to come on – I didn’t know where it came from, or what was in it,” said Prado, a retired machine operator.

But during 29 years on the Community Services District (CSD) board of Sultana, a town four miles north of Monson, Prado became a self-described “water nerd” who learned about local water systems and the troubles faced by his neighbors. Monson historically has relied on private wells – some of which had high nitrate contamination levels. Then, during the drought of 2014-15, many of the wells ran dry and residents had to rely on bottled water or water tanks filled periodically by truck.

That's when Maria Herrera of Self-Help Enterprises, a community development organization serving the San Joaquin Valley, approached Prado about tying Monson into Sultana's water system that serves about 1,000 people, and giving Monson representation on the Sultana CSD board.

"I spoke to my board and it was a no-brainer," said Prado, who has served as board president of the Sultana CSD for the past 14 years. "We share the school with Monson; it's the Monson-Sultana School – the school was actually in Monson before it came to Sultana, so our board felt the need was urgent. Our kids were in that community, and we thought, 'You know what, let's bring them in.'"

The Sultana-Monson project – which included building new wells, laying piping and annexing Monson into the special district – was among those studied through a groundbreaking survey conducted by Kristin Dobbin, a University of California Cooperative Extension specialist in water justice policy and planning.

Dobbin is studying the consolidation of water systems, which can entail creating physical connections (such as pipelines) between water systems like in the Sultana-Monson project or administrative mergers that leave the physical infrastructure unchanged. About 250 consolidation projects have been completed across the state since 2015 – many of them in small, rural communities with tenuous access to safe and reliable drinking water.

"Water system consolidation has really become, in the last eight years, a top solution in California for addressing the chronic challenges facing smaller water systems," said Dobbin, who is based at the UC Berkeley Department of Environmental Science, Policy and Management.

### **Smaller communities pursue economies of scale through mergers**

Although the U.S. Environmental Protection Agency defines a small water system as serving fewer than 3,300 people (with "very small" systems serving fewer 500), many of the systems undergoing a consolidation serve only a couple hundred residents. At such a small scale, maintaining a water system is prohibitively expensive – and smaller communities often lack the technical capability and staffing to install and adequately maintain the infrastructure.

A two-page summary of water system consolidation survey results and more resources can be found at <https://www.kristindobbin.com/topics/consolidation>.

Consolidation aims to create economies of scale for the participating systems, which can help ensure a better quality, more sustainable water supply for all community members. To better understand the motivations – and results – of consolidation projects (both completed and in-progress), Dobbin sent a survey to 434 water systems across California in early 2024.

Remarkably, of the 78 systems that responded, 100% of them reported that their consolidation was a success, and 82% indicated their motivations for pursuing consolidation were fully addressed. The top reason for consolidating, reported by about two-thirds of respondents, was a desire to improve water quality – not surprising, given the state's tight regulation of water.

"There are lot of regulatory steps and potential penalties you're incurring, to incentivize you to get into compliance, so there's a lot of pressure for you to solve the problem," said Dobbin,

noting that common contamination concerns include arsenic, nitrates and 1,2,3-trichloropropane (TCP).

Significantly, 74% of respondents said they were seeing or expected water quality improvements from the consolidation effort. Dobbin also highlighted that half of the systems were motivated to pursue the mergers to address future water supply and quality issues, indicating managers' desire to secure their system from climate change-fueled impacts like drought and flooding.

"While we do see those regulatory pressures, we also see those forward-looking desires to reduce risk and futureproof systems – and that's a positive," Dobbin said.

Funding processes, long timelines present challenges for water systems  
In analyzing survey responses, Dobbin also noted some common roadblocks faced by the systems – namely, sufficient and timely funding for their efforts. Given California's emphasis on system consolidation as a preferred way to address water challenges, most of the projects received funding from the State Water Resources Control Board. But the bottleneck – and a challenge acknowledged by the board itself – has been the process of making those funds accessible to the systems.

It was certainly a hurdle for the Sultana-Monson project. Prado noted that, at the advice of their technical assistance provider, his community's CSD took out a bank loan to get their project started, rather than wait for the state to allocate the funds.

Despite the funding challenges and delays due to supply-chain disruptions during the pandemic, the pipeline connecting Monson to Sultana is complete and the system overall will benefit from more reliable and resilient water sources. But Monson residents are still waiting to connect their homes to the water system and to have their meters installed – nearly a full decade after the project was conceived.

Extended project timelines were another frequently mentioned challenge; for projects in implementation or construction, respondents reported that they already had been working on the consolidation for an average of nine years. One key factor to help expedite that work, Dobbin noted, is the role of technical assistance providers (TAPs) – often nonprofits or community-based organizations who help water systems apply for grants and fill out crucial paperwork, from financial statements to environmental impact reports.

"They're often an important lifeline for the smallest systems who don't have staff," Dobbin explained. "A lot of our smaller water systems don't have a general manager or a secretary; they instead have community volunteers – so these technical assistance providers play an important role in filling those gaps."

As just one example: 79% of water systems with TAP involvement reported improved water quality, whereas 56% of water systems without TAPs reported the same.

Researcher aims to take deeper look at system-consolidation case studies  
Dobbin pointed out that system consolidation is not a one-size-fits-all panacea for water challenges in California, but just one among a variety of options that need to be tailored to each unique community and circumstance.

“Our survey provides really good evidence that consolidation is an important solution set in the state and that it is beneficial,” she said. “So next we need to do that contextualizing – figuring out in what cases it is the best fit.”

In addition to studying long-term effects of consolidation on household water rates (in most cases, there appears to be an increase in rates in the short term, likely due to the need to cover infrastructure upgrades), Dobbin will be taking a deeper dive into representative case studies during the next phase of her research.

While the survey respondents were overwhelmingly positive about their consolidation projects, Dobbin suspects there may be some selection bias – with only “successful” systems electing to report their results. In the future, Dobbin also wants to find and research those “failed” projects to better understand the factors that make consolidation efforts more or less likely to succeed.

For Prado, however, the Sultana-Monson is already a success – even as Monson residents still wait to be connected into the consolidated system. In fact, Prado had this advice for any community considering helping a nearby town that is struggling with reliable, safe water supply.

“Please be a friendly neighbor and good Samaritan – whatever you want to call yourself – and help out with the water for a community in need,” Prado said.

“Water is life,” he added.

The California Water System Consolidation Survey is supported by a two-year Early Career Research Grant from the California Institute for Water Resources, a statewide institute of UC Agriculture and Natural Resources.

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