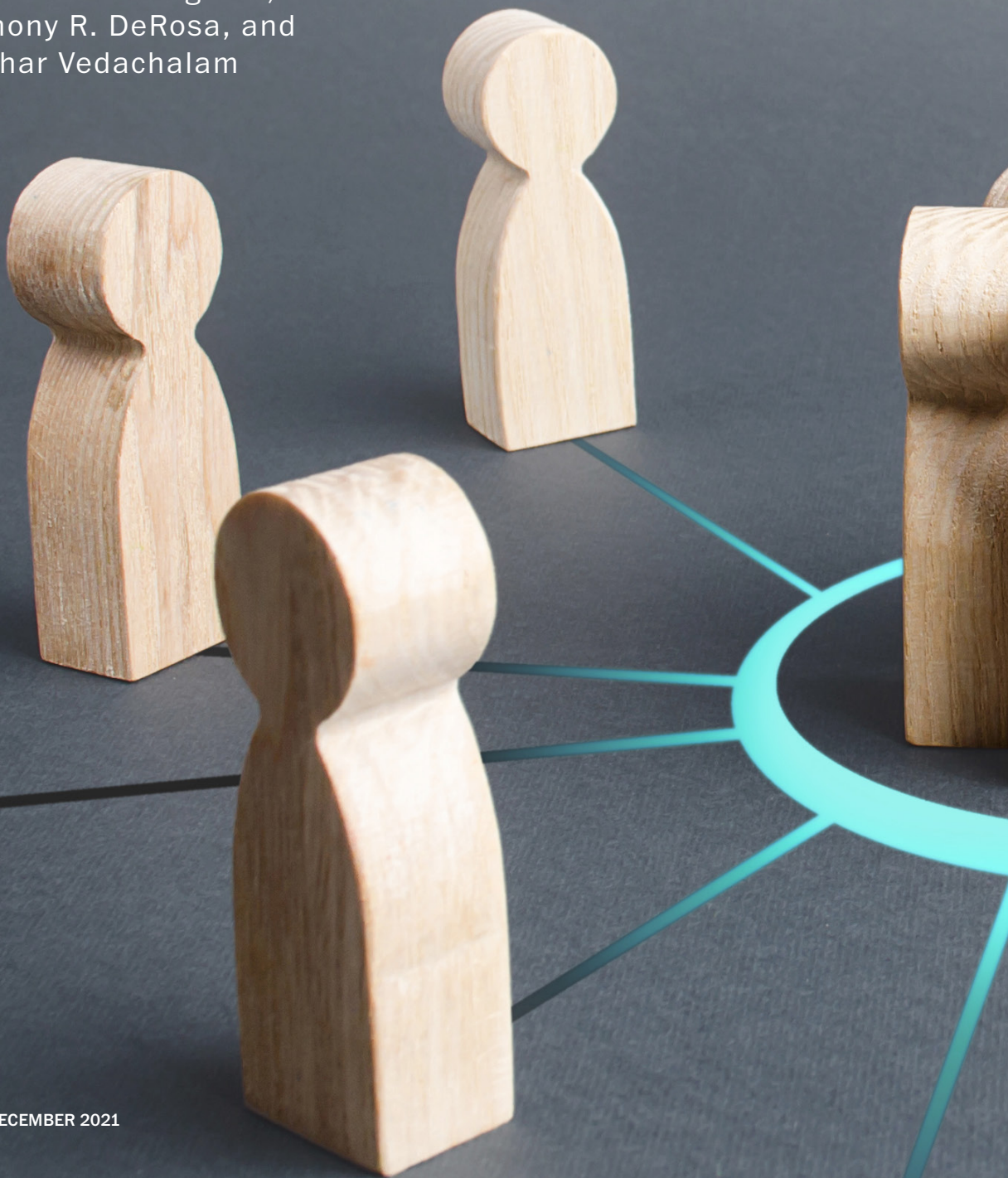


TOO SMALL TO SUCCEED: State-Level Consolidation of Water Systems

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Key Takeaways

US water utilities deal with significant challenges such as aging water infrastructure, climate change, staffing, and maintaining water quality.

Consolidation is an option for water systems to better meet compliance requirements and manage their water supplies.

A recent survey examined reasons for, barriers to, and alternatives to consolidation, as well as the nature of state involvement in the process.



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According to the American Society of Civil Engineers’ 2021 Report Card for America’s Infrastructure, the United States’ drinking water infrastructure was graded as a C-minus. Though improved slightly from previous years, this grade demonstrates that many water systems continue to struggle with aging and underfunded infrastructure. Further, what’s not captured in this grade and is equally important is the disproportionate impact this has on communities of color.

Nearly 90% of the 50,000 water utility systems in the United States serve fewer than 10,000 people, and more than half serve fewer than 500 people. These smaller systems are especially susceptible to the challenges of aging infrastructure, new treatment technology, changing water quality standards, staff and management capacity issues, financial management, and climate change.

Consolidation or regionalization of water systems is one path forward for utilities—in particular smaller ones—to improve their stewardship of water resources, especially if it results in safer and more affordable water and a system that is more resilient and sustainably managed. As shown in Figure 1, the US Environmental

Protection Agency’s (USEPA’s) Safe Drinking Water Information System (SDWIS) database has tracked more than 49,000 active water systems, with approximately 350 net deactivations annually over the past 20 years.

America’s Water infrastructure Act of 2018 included significant changes to the Safe Drinking Water Act, including a requirement that USEPA issue a regulation authorizing state primacy agencies to mandate restructuring assessments for public water systems that frequently violate health-based standards and that have unsuccessfully attempted, or are unable to attempt, feasible and affordable actions to comply with standards. In response to this mandate, USEPA is developing the Water System Restructuring Rule, which will define valid water system restructuring plans and mandatory restructuring assessments; the rule will also clarify when a plan must be based on an assessment. While that rule is being finalized, we have taken a closer look at the state of water system consolidation around the United States.

Research

In collaboration with the Association of State Drinking Water Administrators and Rural Community Assistance Partnership (RCAP), we conducted a survey of drinking water administrators across the United States in March 2021 to understand the role of consolidation in water system management. In particular, we looked at the following:

- Frequency of consolidation in each state
- The reasons that systems consolidate
- Barriers to consolidation
- Agencies involved in the consolidation process at the state level
- Planning, financing, or policy mechanisms that facilitate consolidation

In addition to the survey, to which 31 states and one territory responded, we conducted semistructured interviews with 10 state administrators and rural water associations to gain further insight on the frequency, policy, and perspectives on consolidation in their states, as well as insights on local examples of where consolidation has taken place.

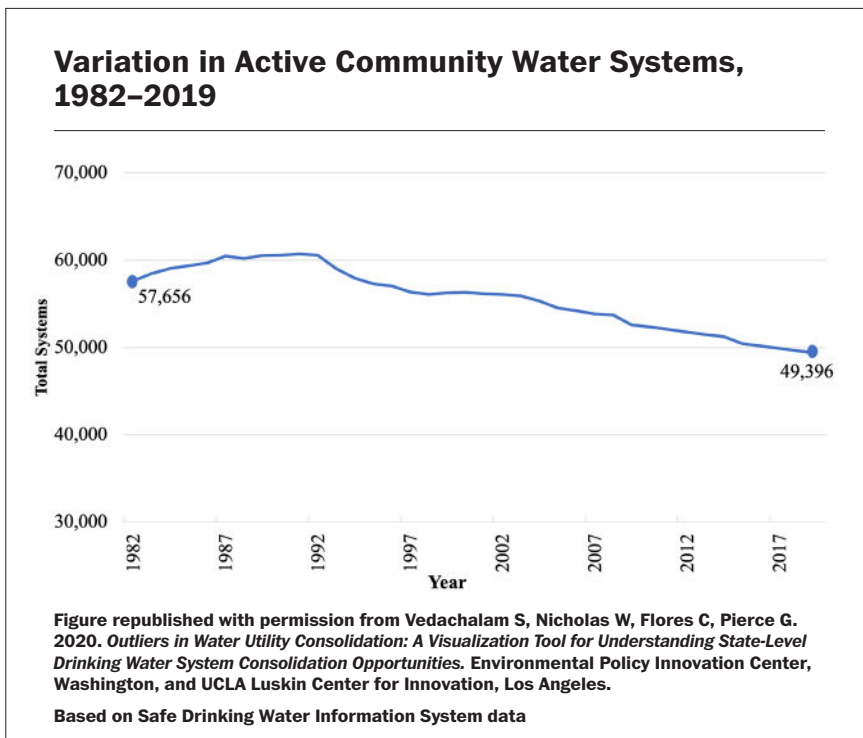


Figure 1

which systems may share operators or buy wholesale water from one another, but have not formally consolidated.

State-by-State Overview of Consolidation

Many respondents indicated that the states are best equipped to operationalize consolidation. Our conversations illuminated some common themes and in general, consolidation is widely seen as a necessary process to improve water quality and build greater sustainability into water management. In some cases, however, consolidation can be seen as controversial; any resistance should be addressed transparently before the consolidation moves forward. Our analysis shows that consolidation may be an opportunity for water systems to move away from a reactive style of management to become more proactive, resulting in improved water quality, increased public trust, and greater affordability.

In our survey, 70% of the respondents noted that water quality impairments, cost of maintaining their system, and keeping up with drinking water regulations were the primary reasons that motivate systems to consolidate. Sixty percent of the respondents noted that better service for customers would be an unlikely reason for consolidation efforts, suggesting this is not a key driver. Our interviews with state agency officials and rural water associations confirmed some of these findings. Water systems mainly consider consolidation when faced with the following:

- Financial loss
- Staff retirements and management issues
- Lack of a viable customer base
- Water pressure and quality issues

As an example of the fourth listed reason, a high-profile per- and polyfluoroalkyl substances (commonly known as PFAS) contamination case in Bennington, Vt., led to consolidation efforts between North Bennington and Bennington.

Legislative and Policy Mechanisms

Given the complex nature of water systems management, legislation varies greatly across US states. More than 75% of survey responses mentioned that state drinking water enforcement programs and prioritization of consolidation projects in the Drinking Water State Revolving Fund allocation have been instrumental in facilitating consolidations. An additional 40% of respondents point to regional planning efforts as also assisting the progress of consolidation. Survey and interview respondents flagged

specific statutes that have been enacted to facilitate consolidation, summarized in the following.

California

The Safe and Affordable Fund for Equity and Resilience program in California encourages water partnerships, including voluntary consolidation. The State Water Board maintains a list of water systems that fail to comply with drinking water standards on its Human Right to Water website portal. Starting in 2015, with the passage of SB88, the State Water Board can require certain water systems that consistently fail to provide safe drinking water to consolidate with (physically or managerially) or receive an extension of service from another public water system.

In 2016, the state passed another bill, SB1263, related to permitting new systems considering consolidation. In 2019, SB200 was signed into law to provide funding for, among other things, consolidation efforts to achieve the goal to “provide safe drinking water in every California community, for every Californian,” with a focus on disadvantaged communities and low-income households. Since 2015, SDWIS shows a decrease of 300 community water systems in California.

Kentucky

The springboard legislation for Kentucky’s water consolidation, regionalization, and partnership efforts was the passage of SB409 in 2000. This legislation enabled the Kentucky Infrastructure Authority to establish water management areas to encourage regionalization and consolidation efforts and prioritize funding. Today, the Division of Water, the Kentucky Infrastructure Authority, and the Public Service Commission work closely on consolidation efforts.

Kansas

In Kansas, two statutes have facilitated consolidation efforts: the Public Wholesale Water Supply District Statute (KSA 19-3545), which enables the creation of public wholesale water districts, and the Consolidation of Rural Water Districts Statute (KSA 82a-639), which enables counties to consolidate rural water districts.

West Virginia

West Virginia took a similar approach to that of California by adding Chapter 24, Article 2H, to the West Virginia Code in 2020, which enables the Public Service Commission to order measures, including acquisition, of distressed water systems. Those are defined as a water utility that “is in continual violation of regulations, fails to pay financial

obligations, or is no longer able to provide adequate, efficient, safe and reasonable utility services.” In this case, any party is able to contact the Public Service Commission and ask for the utility to be reviewed. The impetus for this was several struggling small mining towns with financially distressed utilities.

Agencies Involved in Consolidation

Three main groups are tasked with consolidation efforts at the state level: water systems, the primary funding agency, and the environmental department of that state. The funding agency most often involved is the department that oversees the state revolving fund program, and environmental departments are often the Department of Natural Resources or Department of Environmental Quality. Technical assistance providers, planning or economic development agencies, and public health departments may also be engaged during the process. Rural water associations are especially involved in consolidations that affect rural water systems. Independent agencies such as the California State Water Board, the West Virginia Public Service Commission, and the Kentucky

Infrastructure Authority are also actively involved with consolidation in those states. Very few states noted the involvement of community-led organizations and consumer advocacy groups in decisions related to consolidation, marking a missed opportunity to connect with the public and strengthen community trust in government and the local utility.

Barriers to Consolidation

Maintaining local control was cited as the main barrier to consolidation by 93% of survey respondents, which is why some states such as Kentucky point to voluntary consolidation as the most successful approach. Additional concerns cited by more than 85% of respondents are geography, distance to neighboring utilities, political barriers, issues of trust, and fear of increasing rates (Figure 3).

These sentiments were echoed in survey interviews. In rural states like Vermont and Montana, physical distance between utilities was mentioned specifically. State drinking water administrators and rural associations also noted the strong connection between consolidation and loss of autonomy and control, especially in situations in

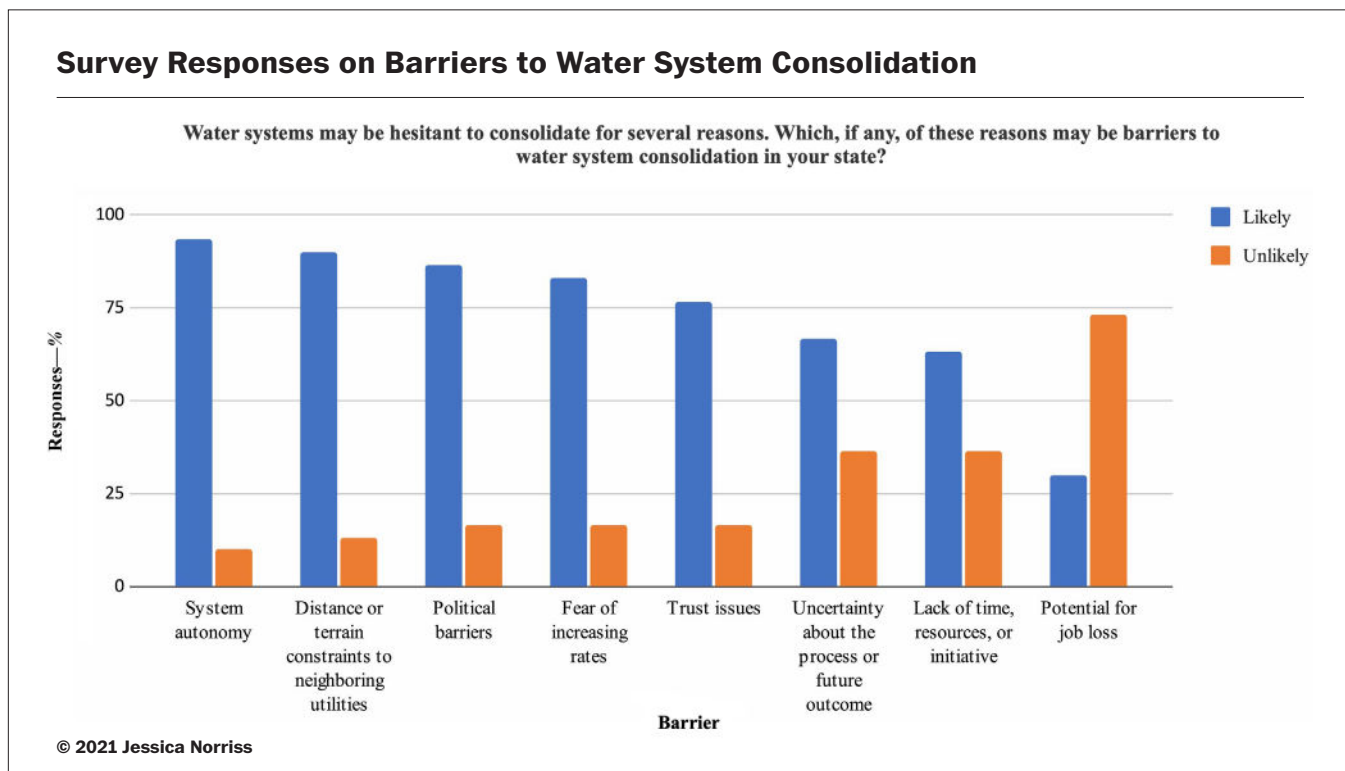


Figure 3

which consolidation is mandated. Many survey respondents, however, qualified this as a “widespread but unjustified fear” or said that the connection may be “real or perceived.” Additionally, water rights were identified as an additional barrier for consolidation in Montana. Only about one-fourth of the survey respondents highlighted the potential for job loss as a barrier to consolidation.

Physical or managerial consolidation requires significant time and resources. This could be due to the terrain or distance to a neighboring utility, or the infrastructure improvements necessary to get the system back into compliance. Administrators noted this process typically takes five to 10 years, needs dedicated personnel to see the project through, and can cost upward of US\$1 million.

Finally, there rarely are incentives for larger water systems to acquire smaller water systems through consolidation. Given that consolidation is often prompted by water quality violations, participants noted that there needs to be a stronger incentive structure or framework for neighboring (often larger) utilities to invest the time and resources to bring on the struggling system and return the water quality to compliance. Federal legislation to promote voluntary partnerships and provide a safe harbor for the larger system acquiring troubled water systems was introduced in the last Congress, but it did not receive a vote.

Alternatives to Consolidation

Consolidation is seen as necessary by some to achieve goals around improving water quality and management, but given the negative association and time- and resource-intensive nature of this process, there are other approaches states may take to yield similar outcomes. The main alternatives are (1) connecting to neighboring systems to buy water wholesale or (2) entering into shared-services agreements for operators or equipment. The former enables smaller systems to directly receive water from a larger system, which is known as consecutive connections. However, given that the smaller system purchasing the water might not be requesting water frequently, or may be located quite far from the water treatment plant, this may require booster treatment at the connection point and could still lead to water quality challenges. For instance, several consecutive systems may have trouble keeping their disinfection byproducts under permissible limits.

Shared-services agreements can take many forms but are most commonly known as regional collaborations or “collaborative partnerships.” In its simplest form, smaller water systems may share an operator that rotates through the different water systems throughout the

week, or neighboring systems will share equipment, lowering the cost of operations for each contributing system. In its most complex form, systems enter formal partnerships for sharing services, jointly apply for grants, and combine training initiatives. By linking systems in this way, leaders in Montana, Maine, Kansas, and New York have noted a larger focus on water resilience and coordination among participating utilities.

Differences Between Regionalization and Consolidation

While the focus in our research was primarily on consolidation, the issue of regionalization came up in several of our one-on-one conversations. Consolidation and regionalization reap many of the same effects and are similar in that both improve efficiency and resilience across the water sector. However, their implementation processes are a bit different. While consolidation occurs typically between fewer than five utilities, regionalization is on a larger scale and consists of several local water systems combining forces and working together through partnerships. RCAP outlines four forms of regionalization:

- **Informal cooperation.** Systems simply work together and pool resources without being contractually obligated to one another.
- **Contractual assistance.** Systems sign contractual agreements with each other.
- **Joint power agency.** Utilities form a separate legal entity that is responsible for performing a variety of functions.
- **Ownership transfer and consolidation.** Consolidation, which is the interconnection of two or more water utilities, can happen physically (i.e., connecting pipes) or managerially (i.e., connecting managerial or administrative functions).

Recommendations

The results of our survey, supplemented by our interviews with state authorities, highlight areas for further exploration and other factors for USEPA to consider through the Water System Restructuring Rule process.

Set Goals and Measure the Outcomes of Consolidation

In interviews, state administrators noted that little is known about the effects of consolidation on water quality, affordability, or consumer trust, which are important aspects of water system governance. The assumption that “if customers aren’t complaining, there must not be a problem” is not a sufficient strategy for determining actions, especially given the underlying power dynamics that could be at play

between disadvantaged communities and the utilities. It is therefore important that goals related to improved water quality, increased public trust, and greater water affordability are clearly stated and described before consolidation takes place. Goals then should be measured after consolidation to have a better idea of how to implement policies in the future.

Develop Comprehensive Systems to Track Consolidation

SDWIS is the primary database for tracking water systems, but the data do not currently capture several key components to evaluate consecutive connections, consolidation, or regionalization efforts (Norriss et al. 2021). SDWIS should be modified to include such fields as

- which utilities own or operate any given water system,
- which water systems may be connected to one another,
- distance to the closest neighboring system, and
- the entity from which water systems may purchase water.

This would enable state administrators, policymakers, and utilities to better understand the interconnectedness of water systems and the intricacies of how and where consolidation is taking place.

Advocate for Statewide Consolidation or Regionalization Strategies

The Water System Restructuring Rule would require states to establish a mandatory assessment process for water systems with repeated health-based violations. This has the potential to shift consolidation from being a one-off solution for struggling systems to a more comprehensive process in which states proactively plan where connection points should be and where connecting them is appropriate. This shift, from a reactive to a proactive approach, is also a critical chance to improve positive outcomes through more comprehensive planning and holistic management.

Recognize Power Dynamics and Environmental Injustices

Several instances of exclusionary policies or practices have resulted in smaller communities of color, with poor-quality infrastructure situated right next to larger and wealthier, predominantly white communities. Discussions on consolidation cannot be expected to naturally proceed in these situations. As noted in the survey, the inclusion of community-led organizations and consumer advocacy groups in decisions related to consolidation is rare. Historically excluded communities and households are particularly unlikely to voice their

opinions, unless special outreach efforts through trusted intermediaries are made in good faith. Furthermore, policies around consolidation must consider and address the environmental justice implications of disproportionate access to clean water.

Proactive Planning

In short, our research reveals that a patchwork of state-led efforts and policies around the United States yield variable results. Making this fundamental shift from reactive problem-solving to proactive planning that also addresses environmental injustices, building in positive public health and water quality goals that are measured after consolidation takes place, and replicating successful state-level strategies are all ways to ensure not only that consolidation continues, but that it happens on a larger scale. In doing so, we create more sustainable and resilient water systems. 🌱

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