California Water Institute

Special Report

“An Institutional Design for Organizing Disadvantaged, Rural and Small Community Drinking Water Systems and Other Related Services for Sustainability”

Prepared for the California Partnership for the San Joaquin Valley

Water Work Group and Board of Directors

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With assistance from:

Introduction

Disadvantaged communities (DAC)[[4]](#footnote-1) and small drinking water systems proliferate[[5]](#footnote-2) in both rural and urban areas throughout California, and they lack the technical, managerial, and financial (TMF)[[6]](#footnote-3) resources to supply their customers with safe, potable supplies. Certain areas such as the San Joaquin Valley and rural parts of Los Angeles County, including the Antelope Valley[[7]](#footnote-4), are examples of areas that are especially challenged with these conditions. Since Proposition 50[[8]](#footnote-5) was passed in 2002, numerous initiatives have been launched to address the safe and potable drinking water issues faced by DACs and small communities. While there has been some success, most DACs and small communities are still without safe water supplies or are not compliance with the requirements for proper operation of a system and there is no clear path forward to realize the day when all DACs, rural and small communities will have reliable, compliant and sustainable supplies or systems. Furthermore, California has adopted an aspirational law that mandates **“*The Human Right to Water”*** [[9]](#footnote-6) for all Californians. The availability of clean water for drinking is further complicated with the volatility of more intense droughts and floods that have been occurring in the past two decades. The problem begs for a serious organizational effort that provides more sustainable arrangements to address the long-term needs of these communities while maintaining their long-held social desire to remain “independent”[[10]](#footnote-7). This brief report outlines institutional opportunities for discussion and potential adoption that can offer the services and support that has eluded so many of these communities in their quest to attain sustainability. These communities are essential to the overall quality of life in California as they serve as a well-spring of human values and services such as working hard and sustaining the vast open areas of the California landscape. Urban areas cover 5%[[11]](#footnote-8) of the landscape while the remaining 95% is natural or dedicated to agriculture[[12]](#footnote-9). Preparing DACs, rural and small community infrastructure for the future is not just an option, it is necessary for California’s landscape well-being.

The goal of this report is to describe an institutional solution for DAC and small systems co-located in various regions in California by aggregating local or regional populations or connections with enough participants to permanently support the required administrative, operational and other functions proficiently. The proposed structure offers an opportunity to meet California water quality and public health requirements thereby assuring sustainability for each of the aggregated drinking water utility systems and other allied services where feasible.

The Problem

A major part of the problem is organizational. Current actions used to organize the solutions are both too centralized and decentralized. A significant centralized issue is funding sources. The funding processes other than what has been affordable by the systems themselves are with California agencies that are primarily in Sacramento. The processes are generally limited to triage (emergencies) or capital expenses only. Operation and maintenance of the results of the funded capital investments are still the responsibility of the recipients. The de-centralized issue is there are too many local systems who are not capable of long-term sustainability primarily because they do not serve a large enough population (the s***cale*** factor) to generate the revenue required to perform the operational and administrative functions necessary for long-term success. These de-centralized small entities also have significant difficulty with administering the financial processes of the centralized system. For example, many do not have the financial capacity to cover expenditures while awaiting the financial support awarded to them.

The question that remains is what institutional arrangements can be made to potentially address the issues above? Two most likely alternatives of how the ***scale*** issue can be addressed include the development of a “Joint Powers Authority” (JPA)[[13]](#footnote-10) or a comprehensive “Special District”[[14]](#footnote-11). There are existing examples of such area-wide organizations that successfully provide aggregation of water-related services[[15]](#footnote-12) including some general act County Water Districts (Calaveras[[16]](#footnote-13) ) that provide wide coverage of geographically separate drinking water and wastewater systems but there are still many other small public water systems within their boundaries that are not under their umbrella. There are also other efforts that accomplish the goal of sustainability that have been fostered by the State. Specifically, there are locations where “consolidation” has occurred when there is a local entity within relative proximity to several struggling small water supply entities and with some financing from the relevant agencies can absorb those satellite entities because it is reasonable to do so. Examples of such efforts include the City of Fresno Consolidation[[17]](#footnote-14) and the Sativa Project[[18]](#footnote-15). The usual over-riding driver of satellite consolidation is the larger entity can absorb the entities with little or no impact on their own regular customers while the absorbed organization can often end up with less cost to their customers as well as long-term sustainability. If there is a significant cost to the consolidating entity it is usually the capital cost and that can be negotiated with funding agencies.

Some of the key issues that can be addressed by an aggregation organization include the following:

* The low income of the residents within most rural and small systems generally precludes them from fully paying for the services provided, which then calls for the development of supplemental funding sources. To be as efficient as possible, aggregating stranded and inefficient services would result in less per unit overall overhead.
* The organizational strategy can also assist with other necessary services that are linked to or protective of investments in sustainable drinking water systems and local water resource management. Examples of these additional services include providing wastewater treatment, broadband services (often needed by water and wastewater treatment for operational control and monitoring), stormwater management, recycled water management, flood protection and, in rural areas when appropriate, domestic water well and septic tank management or replacement (covered by property owners’ small investment into “sinking funds”).

The Solution Summary

* Operation by a larger organization such as a “Joint Powers Agency” or “special district” offers the ability to reach a high level of competency capable of establishing trust with the served population by providing the needed services, especially by hiring local qualified candidates and providing appropriate education and training of executive staff, operational staff, and to the extent needed, keeping the resident population informed. Currently, the existing systems lack not only trained staff but often the elected, appointed or private oversight bodies struggle with a lack of understanding of their duties and responsibilities. These challenges, combined with customers who do not get adequate information, severely limit the ability to adequately address critical and long-term issues at the individual system level.
* Financial conditions at most of the rural and small systems are a significant challenge with many operating almost day-to-day with little or no capacity for catastrophic failures without significant outside assistance (read State or federal funds). With some start-up investment, a regional entity can commit to complete proper assessments[[19]](#footnote-16) which lead to full realization of the current needs and near-term investments required to develop fully compliant and sustainable systems. Any existing-system physical assessments could also be paid for by an external funding source along with the investment in the identified immediate needs. Once those expenses are covered, the pooled (s***caled***) the recipient aggregation organization is better equipped to develop more affordable operation and maintenance rates to better manage newer infrastructure with best practices. Up-front pooled services also should include conducting the physical assessment to identify age-dated infrastructure that has remaining life for inclusion in ongoing asset management and capital improvement plans (EPA offers the **C**heck-**U**p-**P**rogram for **S**mall **S**ystems[[20]](#footnote-17) software for this function). Once capital is attained for the initial assessments, immediate improvements and upgrades, only operations and maintenance costs will likely remain as the main financial assessment and calculation but likely at a much more affordable consumer expense. Later, when additional system replacements must be added based on expired usable life (capital improvements schedule from CUPSS), the costs can come from a pooled replacement fund, embedded in the operation and maintenance (O&M) fund, a much easier mechanism than each individual entity having to invest in replacement costs on their own. The JPA or special district, by having pooled income, can also mitigate some of the ongoing capital costs with pooled investment strategies (**L**ocal **A**gency **I**nvestment **F**unds[[21]](#footnote-18) and related investment programs) for public agencies. Pooled investment could also include more affordable catastrophic events and risk management insurance.

Organizational improvements also include the need for trained representative leadership that can provide proper stewardship as well as address the concerns of other local leaders who may have concerns about loss of their community’s voice. In fact, of all the recommendations incorporated in this report the most important one is to make sure the individual communities do not lose their identity by organizing an institution that usurps local control, even if any such new authority is considered to have a fair representation design. The critical element of the new aggregated entity is that it should be a ***service organization*,** with members joining to experience the opportunity for reduced costs from aggregated services potentially listed in a “menu” developed by the new entity. The menu would include drinking water systems as a core, but other related services such as wastewater disposal could be of value as well. However, a second critical organizational issue is that to be successful, the new entity needs a critical level of participation with the minimum service encompassing a critical mass of drinking water systems in the target area. Without a core of contracted agencies at the scale needed to gain service cost averaging, the entity cannot survive. To avoid developing a system of still too small or parochial regional entities, a larger geographic scope should also be a requirement for funding. The smallest scale should be a shared surface and/or groundwater watershed or subbasin that provides the fundamental water sources and uses. The ideal arrangement would be County boundaries because they cover all the unincorporated areas which can bring in the largest scope of potential services besides drinking water systems (such as stormwater, flood protection, domestic wells and septic tank servicing). Whether the County Board leadership themselves participate or not would be a local decision (in fact they may choose to divest themselves of some of their current related agencies, such as “county service areas”, as a prudent and more sustainable method for success of those existing organizations) but any new aggregated agency would still benefit from a close association with related County agencies.

Development of a path forward for providing DACs and Small Communities at the State level with an assured and sustainable drinking water supply primarily lies with the State Water Resources Control Board (Waterboard) Divisions of Drinking Water (DDW) and Finance working with stakeholders and allied agencies, particularly the Department of Water Resources (DWR) and, in rural areas, perhaps the Department of Food and Agriculture (CDFA). Since the s***cale*** issue may be best addressed regionally, besides drinking water, a regional entity could address wastewater treatment, stormwater management, flood protection and where feasible, water recycling. The lead governmental entities for developing and implementing policy to address these additional issues could be a joint effort by the Waterboard, Regional Water Quality Control Boards (RWQCB), and DWR. As an example of a fully joint local approach for addressing San Joaquin Valley and Los Angeles County DAC and small system water issues, the leads could be the Waterboard DDW and Finance and the Central Valley or Los Angeles RWQCB along with the local the County Boards of Supervisors and County departments of public or environmental health and water resource management.

Finally, central to policy development for sustainability would be whether a voluntary development of shared water resources by DACs and small systems within specific areas of need should be an early focus, or should the focus be on the development of wholesale water suppliers and management within areas of DAC and small system drinking water needs together with a much more robust integration with regional water source suppliers. This conversation needs a facilitated approach and should not interrupt or alter any aggregation efforts but must be part of the strategic regional water management discussions.

Also, inherent and mentioned frequently herein is the need for external funding sources. Existing State and federal funding have been used for triage and some more long-term utility improvements, but the shortfall has still been staggering[[22]](#footnote-19). While the concept embedded in this re-organization proposal is for self-sustaining funding, startup will still be a challenge. There have been past “bond” funds available and federal investments with match requirements. Coordinated bundling of these opportunities will be important potential future sources for this effort. However, to encourage any aggregated institutional strategy, it would be crucial to incentivize such aggregation with preferential funding over individual system investments except for unanticipated true catastrophic failures. In other words, since the aggregated entity lets you keep your system under your control and provides compliance with all requirements, including fiduciary requirements, the individual system allocations from the external funding entities will be contractually bound to be managed by the aggregate entity.

Summary

* Safe, sustainable drinking water supplies are not available for many DAC and small system residents, nor does it appear that they will be available soon using current processes.
* The provision of safe drinking water supplies to DAC and small system residents requires a responsible fiscal and administrative governance process.
* The s***cale*** of any entity providing aggregated utility services is an important factor of that entity being able to achieve a sustainable and fiscally responsible service. A key to achieving ***scale*** is to combine several DAC or small systems within a logical service area into a single utility service agency and to provide management services for drinking water as a necessary core but to potentially include wastewater, stormwater, flood water protection, domestic wells, septic tanks and, where feasible, recycled water.
* The issue of the approach for implementing an effective governance structure for DAC and small systems within logical designated service areas must be resolved but include acknowledging the issue of community identity yet also have sufficient participation to gain the anticipated aggregation benefits of reduced costs.
* Leadership, education and communication strategies from top to bottom and bottom to top are a key element of any successful process.

Recommendations

The path forward for providing DAC, rural and small communities with assured and sustainable drinking water and other related services is best addressed by the local formation of an area-wide JPA or legislated special district along with the support of the Waterboard system, DWR, CDFA (in rural areas), relevant federal agencies and stakeholders in the key areas of logical regional aggregation units. The California Partnership for the San Joaquin Valley has reviewed and concurs with this approach (cover letter attached).

1. Sarge Green is a water management specialist with the California Water institute and Center for Irrigation Technology at Fresno State University. He has been with the University since 2008. [↑](#endnote-ref-1)
2. Maria Kennedy is a disadvantaged community consultant and project manager for multiple water and wastewater projects in various parts of Southern and Central California. [↑](#endnote-ref-2)
3. Karl Longley is an emeritus Dean of the School of Engineering at Fresno State and served as a member and the Chair of the Central Valley Regional Water Quality Control Board for over 25 years. [↑](#endnote-ref-3)
4. [DWSRF DAC Definitions Report October 2022 Updates\_FINAL\_508.pdf (epa.gov)](https://www.epa.gov/system/files/documents/2022-10/DWSRF%20DAC%20Definitions%20Report_October%202022%20Updates_FINAL_508.pdf) [↑](#footnote-ref-1)
5. [a Map of small water systems serving 10,000 or fewer people (SWRCB... | Download Scientific Diagram (researchgate.net)](https://www.researchgate.net/figure/a-Map-of-small-water-systems-serving-10-000-or-fewer-people-SWRCB-2016-record-of_fig2_358546329) [↑](#footnote-ref-2)
6. [Assessing and Building the Technical, Managerial, and Financial Capacity of Your Wastewater Utility - Environmental Finance Center Network (efcnetwork.org)](https://efcnetwork.org/assessing-and-building-the-technical-managerial-and-financial-capacity-of-your-wastewater-utility/#:~:text=The%20US%20Environmental%20Protection%20Agency%20%28USEPA%29%20expresses%20the,provide%20a%20way%20to%20analyze%20strengths%20and%20weaknesses.) [↑](#footnote-ref-3)
7. [Op-ed: AV residents face more than their fair share of drinking water problems (theavtimes.com)](https://theavtimes.com/2020/04/30/op-ed-av-residents-face-more-than-their-fair-share-of-drinking-water-problems/) [↑](#footnote-ref-4)
8. [Proposition 50 Funding for Public Water Systems | California State Water Resources Control Board](https://www.waterboards.ca.gov/drinking_water/services/funding/Prop50.html) [↑](#footnote-ref-5)
9. [Human Right to Water | California State Water Resources Control Board](https://www.waterboards.ca.gov/water_issues/programs/hr2w/) [↑](#footnote-ref-6)
10. Olga Morales, RCAC, personal communication with Green, Kennedy and Longley

    https://drive.google.com/drive/folders/1eGprSoWULlPIwo0CNJVbjE7TQfg5iecZ?usp=sharing [↑](#footnote-ref-7)
11. [America’s Most Urban States | Newgeography.com](https://www.newgeography.com/content/005187-america-s-most-urban-states#:~:text=While%20California%20has%20the%20densest%20urbanization%2C%20it%20is,average%2C%20but%2022%20states%20have%20larger%20urbanization%20percentages.) [↑](#footnote-ref-8)
12. [Agricultural\_Loss\_and\_Conservation.pdf (ca.gov)](https://www.cdfa.ca.gov/agvision/docs/Agricultural_Loss_and_Conservation.pdf) [↑](#footnote-ref-9)
13. [Codes Display Text (ca.gov)](https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=GOV&division=7.&title=1.&part=&chapter=5.&article=1.) [↑](#footnote-ref-10)
14. There is no existing California Water Code general act division (§20500-76501) that covers this proposal, the closest is a County Water District but those agencies still have limitations inherent in the governing codes. A special district in this case would have to be a special act of the California Legislature or additions to the general acts in the Water Code. [↑](#footnote-ref-11)
15. San Luis and Delta-Mendota Water Authority, a JPA, operates major delivery facilities for both agricultural and urban water agencies ([San Luis & Delta-Mendota Water Authority – Using Water Wisely (sldmwa.org)](https://sldmwa.org/) and the specially legislated district Bay Area Water Supply and Conservation Agency (BWSCA -[Bay Area Water Supply & Conservation Agency (bawsca.org)](https://bawsca.org/), [Codes Display Text (ca.gov)](https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=WAT&division=20.5.&title=&part=&chapter=&article=) [↑](#footnote-ref-12)
16. <https://www.ccwd.org/> [↑](#footnote-ref-13)
17. <https://www.californiawater.org/2022/04/30/city-of-fresno-department-of-public-utilitiesregional-consolidation-feasibility-study/> [↑](#footnote-ref-14)
18. Sativa report https://drive.google.com/drive/folders/1eGprSoWULlPIwo0CNJVbjE7TQfg5iecZ?usp=sharing [↑](#footnote-ref-15)
19. Ibid, see 3 [↑](#footnote-ref-16)
20. [Check-Up Program for Small Systems (CUPSS) Asset Management Tool | Building the Capacity of Drinking Water Systems | US EPA](https://19january2021snapshot.epa.gov/dwcapacity/check-program-small-systems-cupss-asset-management-tool_.html#:~:text=CUPSS%20is%20a%20free%2C%20easy-to-use%2C%20asset%20management%20tool,persons%29%20and%20medium-sized%20systems%20new%20to%20asset%20management.) [↑](#footnote-ref-17)
21. [LAIF (ca.gov)](https://www.treasurer.ca.gov/pmia-laif/laif/index.asp) [↑](#footnote-ref-18)
22. [California clean water solutions will cost $11.5 billion - Los Angeles Times (latimes.com)](https://www.latimes.com/environment/story/2024-06-26/california-clean-water-solutions-will-cost-11-5-billion) [↑](#footnote-ref-19)