

Data documentation for 2023 California Community Water System institutional type update

I. Base data

This data set builds directly on the original [Organizational structure and institutional types of community water systems in California](#) data set published in October 2021 by Dr. Kristin Dobbin and Dr. Amanda Fencel which reflects active Community Water Systems in California as of December 2018 (referred to herein as 2018 data). You can find this data on Dryad under the following DOI: <https://doi.org/10.25338/B8NS7Z>. The methods and data sources for this original work are described in detail in the 2021 Utilities Policy publication "[Institutional diversity and safe drinking water provision in the United States](#)". We encourage you to read this work before working with the data.

II. Overview of changes

With this updated and revised data set we not only aimed to provide an updated snapshot of the organizational and institutional structures of active California Community Water Systems but also to improve the accuracy and granularity of the data as we have further developed our understanding of these topics through this and other projects.

Towards these ends we have made the following changes:

- Removed deactivated water systems and systems no longer classified as Community Water Systems (CWS) as of March 29, 2023 using California's Drinking Water Watch database.
- Added CWS that have been permitted since January 2019 or have been re-designated as a CWS since that time through March 29, 2023 using California's Drinking Water Watch database.
- Added 108 CWS located within California that are regulated by the U.S. EPA Region 9 due to their location/service on Tribal lands as of Quarter 4 2022 using Federal SDWIS¹.
- Consolidation of dependent county district types (County department - other and county sheriff) into type "county" with subtypes (see below).
- Consolidation of Mutual Water Company and Homeowners Association types into type Mutual Benefit with subtypes (see below).
- Splitting of previous "private other" type into Private - Ancillary (with subtypes) and Private - Unknown (see discussion below)
- We have added 3 new types to our list to reflect increased diversity amongst newly added systems.
 - School District

¹ EPA (2022) [SDWIS Federal Reports Advanced Search](#). Queried for EPA Region 9 Primacy and Tribal primacy which yielded a mix of water systems run by Tribal governments and some run by private entities.

- Tribal Government - owned and operated by an American Indian Tribe²
- County Sanitary District
- Reviewed institutional type designations and corrected where necessary based on new documentation using the similar methods but with improvements as described below.
- Added subtypes for several institutional types to better describe the diversity in governance arrangements within types and their relative frequencies across the state:
 - Public system types: County, County sanitation district, county waterworks districts, special act district, state and federal
 - Private system types: IOU, Private - Ancillary, Mutual Benefit, and Private - Unknown.

See below for more details and discussion.

III. Detailed accounting of select changes and methods

III.a - Improved methods for identifying mutual benefit systems and addition of mutual benefit subtypes

The mutual benefit category is used for mutual benefit/cooperative corporations and associations. The unifying characteristic of this type is that they are membership based, primarily on the basis of landholding. These systems are assumed to be non-profit and many are registered as tax-exempt; however, obtaining tax exempt status requires additional paperwork on the part of the system and was not a condition of their inclusion in this category.

CWS in this category have primarily been identified through a database search and review of IRS records on exempt corporations³ and/or a business search from the California Secretary of State registry⁴.

We added several subcategories of Mutual Benefit systems including Mutual Water Company (MWC), HomeOwners Association (HOA) and Unknown/Other.

- If a system is registered as tax exempt with the IRS, their exemption type/subsection is used to classify their subtype (501(c)(12) for mutuals and 501(c)(4) or 501(c)(7) for HOAs.
- If a system is registered under a name which includes “Mutual”, “Mutual Water

² EPA (2023) [Tribal Public Water System Supervision Program](#); EPA (2023) “Federal environmental laws authorize EPA to treat *eligible federally recognized Indian tribes* in a similar manner as a state (TAS) for implementing and managing certain environmental programs” [Tribes Approved for Treatment as a State \(TAS\)](#)

³ IRS (2023) Exempt Organizations Business Master File Extract (EO BMF) <https://www.irs.gov/charities-non-profits/exempt-organizations-business-master-file-extract-eo-bmf>;
IRS (2023) Tax Exempt Organization Search <https://apps.irs.gov/app/eos/>

⁴ Secretary of State (2023) Business Search. <https://bizfileonline.sos.ca.gov/search/business>

Company” or “Mutual Water”⁵ and they are registered with SOS as a mutual benefit, we have classified them as a Mutual Water Company (MWC) even if they are not registered with the IRS as a 501c(12).

- If a water system name includes “HOA” or “Owners Association” or “property association” and is registered with the SOS as a mutual benefit corporation we classify them as an HOA.
- For those systems that are not registered with the IRS and do not include those terms in their name but are registered as mutual benefit corporations with the SOS we have labeled their subtype as Unknown/Other, or HOA, only if appearing on the list of active HOAs from the California homeowners associations (https://california-homeowners-associations.com/california_counties_list.php?a=return).
- If a system name is registered with the secretary of state as both HOA and MWC we are labeling them MWC.
- For the small number of these systems that do not show up on either the IRS or SOS database, we used websites (where available), open corporates and Consumer Confidence Reports from the Safe Drinking Water Information System (SDWIS) to make a determination where possible.
- Where a system does not appear on any of these databases and no documentation on organization or governance is found online, systems are classified as type unknown rather than in the mutual benefit type even if we suspect the system is organized as a mutual benefit unless either the terms “Mutual”, “Mutual Water Company” or “Mutual Water” are included in the system name in SDWIS in which case we use mutual benefit subtype mutual water company or the terms “property owners association” or “homeowners association” are used in the water system name in SDWIS in which case we use mutual benefit subtype HOA.
- Systems registered as stock corporations, which are also membership-based corporations, were included in the Mutual Benefit category. If their names included “mutual” “mutual water company” or “mutual water”, the subtype assigned was MWC. If a system name did not include these terms, we included them in the Mutual Benefit category with the subcategory of “unknown/other”. In several cases a system was registered as a stock corporations under one registry and as a mutual under another. In these cases, we included these systems as MWCs.
- Based on these methods, mutual benefit systems with the subtype of unknown/other could be either a MWC or a HOA and we simply lack the documentation to determine the exact structure, or they could be another less common type of mutual benefit corporation or nonprofit association such as Common Interest Development Corporation.

III.b - Improved methods for identifying Mobile Home Parks that run their own CWS

Mobile Home Parks (MHPs) are often owned by an individual or incorporated entity, and many run their own water systems for residents. As defined in the California Health and Safety Code a MHP is a “tract of land where two or more lots are currently or were previously rented/leased

⁵ Inclusive of the official water system name in the California Drinking Water Watch database and the corresponding corporate/association name registered with either the Secretary of State or IRS.

to accommodate manufactured homes, mobile homes, or recreational vehicles”⁶ as well as lots that are held out for rent or lease⁷. The California Housing and Community Department’s (HCD) develops, adopts, and enforces state regulations for privately owned mobile home and special occupancy parks. Special occupancy parks include recreational vehicle (RV) parks, temporary RV parks, incidental camping areas, or tent camp areas.

Two previous efforts have sought to identify water systems that are owned/operated by a Mobile Home Park (MHP). A 2017 paper found 383 out of 2976 CWSs, or 13% of CA systems, were MHPs as of August 2016 (Pierce & Gonzalez, 2017). We similarly found 375 of 2867 (13%), as of December 2018, (see Dobbin and Fencel 2021).

To update this initial set of 375 systems, we combined searches based name matching between the water system name and the mobile/RV park name with address-based cross-referencing from HCD’s inventory⁸ of 5,231 MHPs and RV parks. This database, however, does not distinguish between mobile home parks and special occupancy parks.

We adopted a similar approach to Pierce and Gonzalez (2017), searching among the ‘private ancillary’ water systems for names that include “trailer,” “park,” “mobile,” “estates”, and added “RV”, “resort” and “ranch” and then manually checked to confirm that each was a MHP. For systems that appear to have both types of land use or occupancy, we assigned MHP when it was clear there was at least some amount of permanent, long-term residents. Many of the newly assigned MHP systems in this 2023 update were previously classified as “private-other” in the 2018 dataset (published 2021). Additionally, a handful of MHP water systems that are added in this version of the dataset are under EPA region 9 primacy because of their location on Tribal land.

III.c - Improved methods for identifying and classifying Investor Owned Utilities and addition of subtypes

The California Public Utilities Commission (CPUC) has oversight over California’s investor-owned water utilities (IOUs), which the CPUC lists online⁹. The methods for identifying an IOU did not change from 2018 categorization, but we have revised some system types based on sales, and added subtypes based on their Class distinctions¹⁰. Different CPUC rulemaking applies between Class A and other systems. For example, class A sized systems have to apply for rate changes every three years through a formal CPUC proceeding while smaller utilities do something similar through *informal* proceedings¹¹.

The CPUC lists 93 regulated water utilities which actually reflects approximately 222 unique PWSIDs that are an IOU. The difference in counts is mostly driven by the few Class A IOUs

⁶ Cal. Health and Safety Code §§ 18200-18700

⁷ HCD (2023) [Mobilehome Parks](#).

⁸ HCD (2023) C&S OS- Search for Mobilehome/RV Parks [Available online](#). Downloaded 02.28.23

⁹ CPUC (2023) [Water Division](#): list of systems “[Alphabetically](#)”.

¹⁰ CPUC (2019) [REGULATED WATER UTILITIES \(From 2019 Annual Reports\)](#)

¹¹ CPUC (2023) [What is a General Rate Case? Formal Proceedings - Large Utilities](#).

operating 34-49 unique CWSs each.

- **Class A systems have > 10,000 service connections:** CalAmerican Water Company, CalWater Service Company, Golden State Water Company, Great Oaks Water Company, Liberty Utilities, San Gabriel Valley Water Company, San Jose Water, Suburban Water Systems
- **Class B systems have < 10,000 but more than 2,000 service connections:** there are only 3 class B systems, Alisal Water Corporation (Alco), Bakman Water Company and Del Oro Water Company. Del Oro is associated with many unique PWSIDs.
- **Class C systems have more than 500 but less than 2,000 SCs.**
- **Class D systems have < 500 service connections**

After our initial classifications, we sent our dataset to the CPUC Water Division- which identified that two previously listed IOUs had been sold, and one that was consolidated with a City Water Department¹². The CPUC told us that they currently regulate 57 Class D Utilities. Some of these (18) are not CWS and thus not in our database. They are likely what California defines as “state smalls” – or systems with < 15 connections; 2 IOUs don’t supply potable water.

III.d - Splitting of “private-other” type into private-ancillary and private-unknown

Previously we had created a catch all category for private systems that were not investor owned utilities (IOUs), Mutual Water Companies (MWCs), homeowners associations (HOAs) or Mobile Home Parks (MHPs). In many instances, but not all, these were ancillary private water systems tied to commercial facilities or operations or some other primary business purpose.

To improve clarity and consistency in this type classification we split the category into two: **Private - Unknown** and **Private - Ancillary** systems. **Private - Ancillary** systems are discussed below. **Private - Unknown** systems represent those systems for which we are unable to find any documentation about how the system is organized or governed. On this basis we assume such systems are privately managed/owned but due to missing documentation we are unable to assign the system to any of the other privately owned types in the new classification system: Mutual Benefit, IOU, or private ancillary.¹³ In many cases these systems appear to be serving single-family residential communities. We suspect that many of these systems are operating as mutual benefit systems (potentially informally or with official corporate/association status that lacks documentation for whatever reason). Some may also be operating as undetected Investor Owned Utilities and therefore unregulated by the CPUC. It is of course possible, however, that some of these systems are private ancillary facilities or mobile home parks.

III.e - Methods for classifying ancillary subtypes

To better understand the universe of privately run systems whose primary business function is *not* providing potable water to customers, we further classify private water systems by their ancillary function. Beecher et al. (2020) provide a detailed explanation of Ancillary systems

¹² Personal communication 3/22/23

¹³ As far as we can determine, under California law, these three categories should be exhaustive of the overarching possibilities for the organization of privately owned and operated California water systems.

which guides our use here: “For ancillary systems, water service is a secondary to a primary activity that is not understood as a public utility service, that is, the enterprise’s financial resources are derived from something other than the provision of water service. The US EPA has defined an ancillary system as one for which “providing potable water is not the entity’s primary business... Instead, these systems provide water as an ancillary function of their principal business or enterprise. Examples include mobile home parks, schools, hospitals, prisons, and commercial businesses” (USEPA, 1997 CWSS, p. 6).” As described above, we treat MHPs separately. Here we see a range of ancillary subtypes, based on their primary activity. Ancillary water systems often lack a clear governing body, and their potable water service provision activity is secondary to these other primary business activities:

Ancillary Subtype	Definition
Agricultural_Industrial	Primary activity is an agricultural or industrial business, with an ancillary water system to serve on-site employees, including providing housing for residential employees like farmworkers.
Education_Retreat	Primary activity is providing educational, religious or spiritual services through schools and ‘retreat’ centers. These businesses may have a short term and/or long term residential component that requires providing potable water.
Healthcare_Eldercare	Primary activity is healthcare (including mental health, rehabilitation, privately owned hospitals etc), residential treatment facilities for minors (within and outside the social services/foster system), assisted living for individuals with disabilities, and residential senior/nursing home/retirement facilities. While these are all under the ‘private ancillary’ category, some of these facilities may in fact be non profit organizations, and others appear to be contracted by local/state government.
Housing	Primary activity is providing housing rather than the potable water for the housing (the ancillary business). This category includes apartment buildings, complexes, and other sites where there are multiple properties owned by a single individual or company for rent. This might also include some complexes that serve farmer workers, but off-site from an agricultural enterprise.
Recreation_Tourism	The primary activity for this private business is recreation, in that they operate campgrounds, resorts, and other properties that include a range of temporary housing facilities for rent like rooms in hotels or motels, cabins, cottages, yurts, and dry camp spots. The recreation category is inclusive of what the California HCD calls “Special occupancy parks”, which are parks for “a recreational vehicle park, temporary recreational vehicle park, incidental camping area, or tent camp” and are distinct from Mobile Home Parks (MHPs) with permanent, residential populations.
Other_Commercial	This is a catchall category for other primary business categories, outside those separated above, where water service is still secondary to the primary activity. Inclusive of desalination facilities like Poseidon in San Diego.

III.f - Adding subtypes for select public entity types

For a handful of publicly owned institutional types, we decided it was beneficial to add an additional level of classification to describe diversity in either the population served by the water system (for ancillary public systems) or the derived authority/board of directors composition (for independent special districts. These institutional types and the assigned subtypes are described in the table below. Subtype determinations were made on the basis of information available both on Drinking Water Watch (e.g., CCRs, SDWIS water system contact emails) and through google searches.

Primary Type	<i>Subtypes and definitions</i>
Federal	Military - e.g. Army, Navy, Air Force or Coast Guard facilities Recreation_Tourism - e.g. national park system, campgrounds in national forests etc. Other - Any non military and non recreation related water systems
State	Carceral - e.g. CalFire conservation/fire camps, Dept. of corrections health care and psychiatric facilities, state prisons Education_Retreat - e.g. California State Universities, University of California campuses Recreation_Tourism - -e.g. state parks and recreation areas Healthcare_eldercare - State-run medical related facilities. Includes facilities run by the CA Department of Developmental Services, for example.
County	Carceral - e.g. County Sheriff Dept., detention centers Housing - e.g. affordable housing properties owned by the county, group homes, foster youth housing Healthcare_Eldercare; e.g. local government run healthcare, eldercare or disability care centers Other - Any facilities not captured by the above three subtypes
Special Act District	Independent - Independent special act districts with a governing board independently elected apart from other local government County - Dependent special act districts where the governing board is the same as the county board of supervisors City - Dependent special act districts where the governing board is comprised on a city council
County Sanitation District¹⁴	Independent - Independent special district where governing board is independently elected apart from other local governments County - Dependent special district where governing board is the local board of supervisors
County WaterWorks District¹⁵	County (Governing board is the Board of Supervisors)

¹⁴ Other subtypes that are possible but not observed include: city and mixed local government (similar to JPAs)

¹⁵ Other subtypes that are possible but not observed include: city

IV. Disclaimer:

As is evidenced by the procedures detailed herein, the classification of water system institution types and subcategories is not straightforward. There are ambiguities inherent to the categories we use. We have done our best to be clear about our rationale and decision-points, however, we stress there are not only different ways to classify these systems than we have done here, but also subjectivities in how specific systems are classified. Moreover, our classifications are only as good as existing publicly available documentation. This is particularly true of the “private - unknown” category where systems without public documentation have been placed (see discussion above).

V. Contact for corrections, questions, and suggestions:

If you notice an error in the type or subcategories of our data or have any questions or suggestions regarding this data, please contact Dr. Kristin Dobbin at kdbobbin@berkeley.edu.

VI. References, further reading, and resources:

- Beecher, J., Redican, K., & Kolioupoulos, M. (2020). (Mis) Classification of water systems in the United States. Available at [SSRN 3627915](https://ssrn.com/abstract=3627915).
- Dobbin KB, Fencel AL (2021) Institutional diversity and safe drinking water provision in the United States. *Utilities Policy* 73:101306. <https://doi.org/10.1016/j.jup.2021.101306>
- Dobbin, K., McBride, J. and Pierce, G. (2022) Designing Consolidation Projects- Considerations for California Communities. *UCLA Luskin Center for Innovation*. Available online: <https://innovation.luskin.ucla.edu/wp-content/uploads/2022/10/Designing-Water-System-Consolidation-Projects.pdf>.
- Pierce, G., & Gonzalez, S. R. (2017). Public drinking water system coverage and its discontents: the prevalence and severity of water access problems in California's mobile home parks. *Environmental Justice*, 10(5), 168-173. <https://doi.org/10.1089/env.2017.0006>