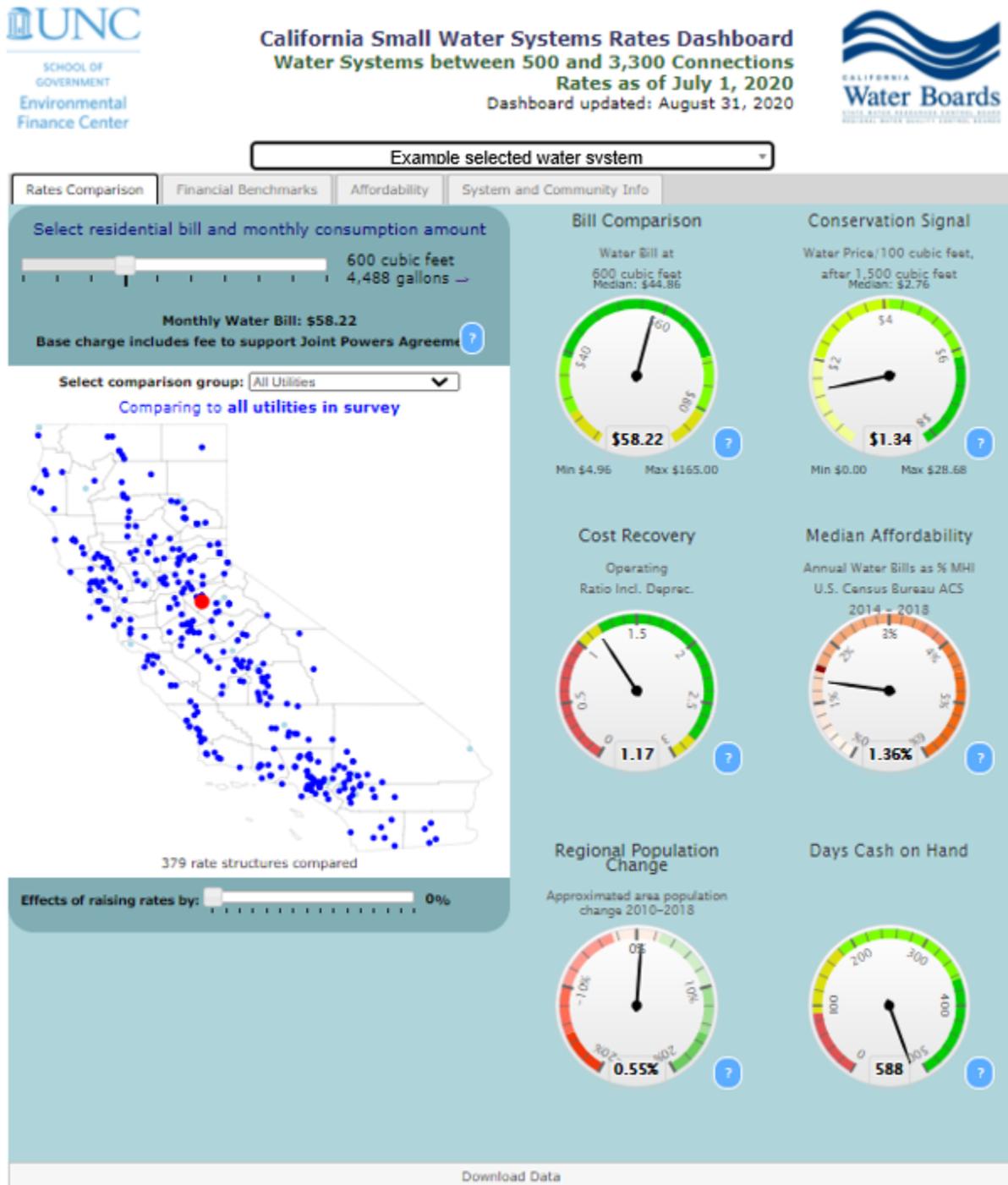


# Introducing the California Small Water Systems Rates Dashboard

Benchmarking July 2020 water rates and other financial and performance data of community water systems serving between 500 and 3,300 connections throughout the State of California



The dashboard is free to use and open to the public at [California Small Water Systems Rates Dashboard](http://efc.sog.unc.edu/CAdashboard): <http://efc.sog.unc.edu/CAdashboard>.

*Note: not compatible with Internet Explorer and older versions of Microsoft Edge.*

## What is the Dashboard?

The California Small Water Systems Rates Dashboard (dashboard) is an online information-sharing resource with an interactive interface that allows users to compare or benchmark residential rates, financial, and system performance data of community water systems serving between 500 and 3,300 connections. The dashboard utilizes an interactive interface that visualizes information via easy-to-understand graphics. The visualization allows the user to gain a multi-faceted understanding of the water system's financial health and performance. The dashboard is already populated with data for each water system and no data inputs are required. Simply select your water system to view its information on the displayed indicators.

This dashboard was commissioned by the California State Water Resources Control Board (SWRCB, or State Water Board) as a pilot dashboard and resource for small community water systems. Feedback is being solicited from users to consider future developments. The dashboard was created by the Environmental Finance Center at the University of North Carolina, Chapel Hill (EFC at UNC), working with the UCLA Luskin Center for Innovation, during the spring and summer of 2020. The California Small Water Systems Rates Dashboard is similar to other Rates Dashboards created by UNC for water systems in other states.

## What is its primary purpose?

The dashboard provides information that may be useful to water system managers, governing bodies, technical assistance providers, and other organizations in making decisions that affect the financial management of the water system.

Tracking a water system's financial health is a valuable management and decision-making tool. Benchmarking rates, affordability, financial capacity, and system performance metrics can help a water system measure and understand its strengths and identify potential areas of concern. For instance, benchmarking a water system's financial cost recovery metric can illustrate whether a system's low water rates, relative to other similar-sized systems' rates, may be adversely affecting its long-term financial stability. Monitoring key performance indicators, or how they compare to other water systems, allows decision-makers to assess current financial performance, determine whether rates or financial policies need to change, and plan for future growth and development of the enterprise. This kind of financial planning is integral to building a sustainably-managed utility that is able to protect public and environmental health and provide reliable service.

## How do I access it? How much does it cost?

The dashboard is free to use and open to the public at [California Small Water Systems Rates Dashboard](http://efc.sog.unc.edu/CAdashboard): <http://efc.sog.unc.edu/CAdashboard>. Features of the dashboard may not be compatible with Internet Explorer or older versions of Microsoft Edge. Recommend using alternative or updated browsers.

## Who should use the California Small Water Systems Rates Dashboard?

Everyone is welcome to use the dashboard. Examples of who might find the dashboard particularly useful for decision-making purposes include, but not limited to:

- Managers and staff of water systems to benchmark their rates and financial performance during budgeting season
- Local officials and governing board members to quickly assess the water system's performance and rates affordability while considering requests to adjust rates

- Customer service and public communications staff at water systems to communicate with their customers and media to enhance transparency
- State and federal agencies and technical assistance providers to understand the context of water systems to better target their assistance
- Organizations that provide capital funding to water systems to assess communities' ability to take on debt
- Members of the media, researchers, and the general public to learn about their water systems' performance and rates

### Which water systems are included in this dashboard?

Community water systems in California that serve between 500 and 3,300 connections and that either charge water rates or have available financial data are included in this dashboard.

### What data are included?

The dashboard was created with data that were available during the summer of 2020. Not all data were available for every water system on the dashboard. Data include:

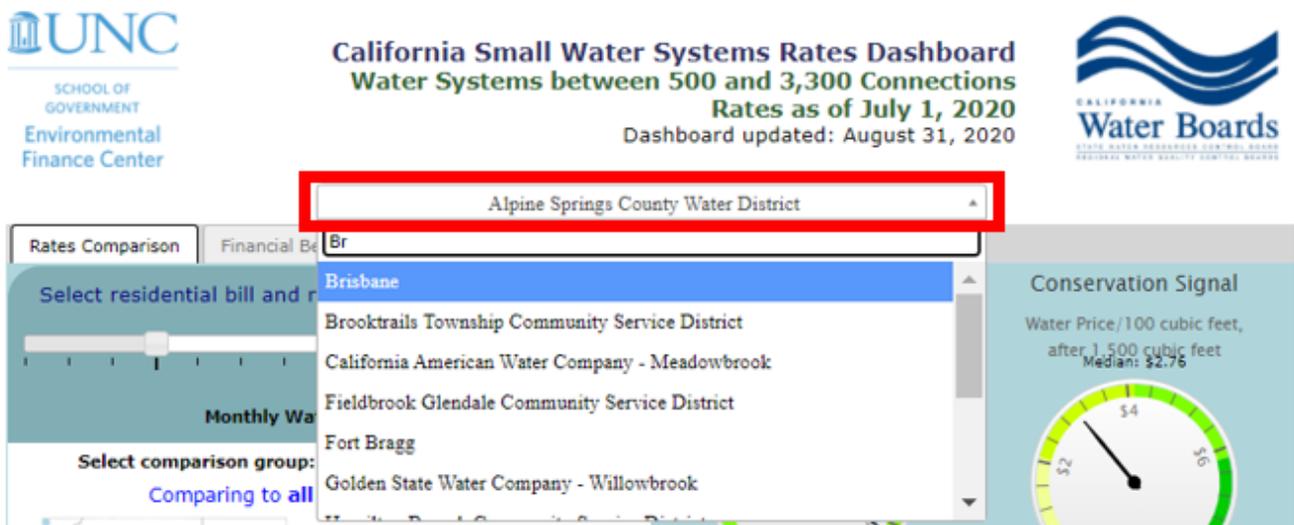
- **Residential water rates and rate structures** charged to customers as of July 2020. Rates and rate structure details were extracted from rate sheets provided by the water systems to the EFC at UNC and from water systems' public websites.
- **Financial data** from Enterprise Funds' audited financial statements for Fiscal Year 2018, the last year for which data were available. Financial data were extracted from local governments' audited financial statements, annual reports filed by privately-owned systems to the California Public Utilities Commission, and from the Cities Annual Report database compiled by the State Controller's Office by the UCLA Luskin Center for Innovation.
- **Water system characteristics** compiled in the Safe Drinking Water Information System
- The number of regulatory **water quality and monitoring violations** from July 1, 2017 through June 30, 2020 compiled by the California Water Boards
- **Socioeconomic (including income and poverty) and population data** on households and individuals residing in the Census Place (town or city) or County that is closest to or encompasses the water system's service area, using the latest available from the U.S. Census Bureau (2014-2018 5-year American Community Survey)
- The **number of metered connections** compiled by the California Water Boards
- **Compliance status with the Human Right to Water** requirements as of July 30, 2020, compiled by the California Water Boards

As indicated, the financial and rates data were compiled by researchers from the UCLA Luskin Center for Innovation and the Environmental Finance Center at the University of North Carolina, Chapel Hill. In addition, socioeconomic data were compiled by the researchers from the U.S. Census Bureau, not from data used by the State Water Resources Control Board. Data on water systems' compliance status with the Human Right to Water requirements, number of metered connections, and water system violations data for a three-year period were provided by the State Water Resources Control Board.

The data compiled for this pilot dashboard represent a one-time dataset. Updating the dashboard and integrating with rates, financial and other data compiled by SWRCB may be considered in the future.

## How do I use it? (Selecting the inputs)

1. Go to the [California Small Water Systems Rates Dashboard](http://efc.sog.unc.edu/CAdashboard):  
<http://efc.sog.unc.edu/CAdashboard>.
  - a. Features of the dashboard may not be compatible with Internet Explorer or older versions of Microsoft Edge. We recommend using alternative or updated browsers.
2. Click OK to display the dashboard.
3. Underneath the title, click on the dropdown menu and select the name of the water system you wish to display. You can type in a portion of the water system's name to filter the dropdown, alphabetical list of water systems.



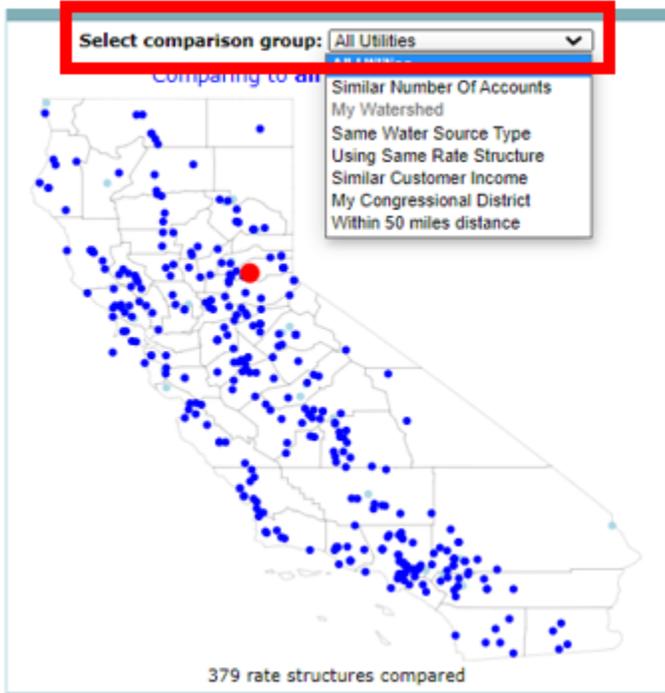
4. Move the slider under "Select residential bill and monthly consumption amount" to the monthly consumption amount for which you want to compare the monthly water bill.



- a. The dashboard defaults to consumption points in hundreds of cubic feet (ccf). If you wish to select a consumption point in thousands of gallons instead, click the small arrow next to the word "gallons" and you'll be switched to an identical dashboard using 1,000 gallons instead of ccf.



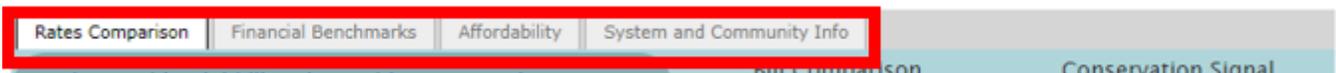
- By default, your selected water system's rates will be compared to all other water systems in the dashboard. If you wish to narrow the comparison group, click on "Select comparison group" and select the criterion by which you want to narrow the selection. There are a few choices, all of which are pre-programmed into the dashboard based on the water systems' characteristics. The map will display the number of and which water systems yours is being compared to based on the selected comparison group.



- You could simulate the effects of raising the water system's rates by up to 150% by moving the slider on the bottom left.
  - Simulating a water rate increase also models an increase in revenues, less an assumed price elasticity, affecting the Cost Recovery metric. Because of the complexity of rate structures and the unknown true precise price elasticity, modeling revenue increases from rate increases are speculative, and this dashboard function should not be used in place of an in-depth rate study or analysis. However, this function provides an immediate, at-a-glance snapshot of potential effects of raising rates on multiple metrics.



- Choose between four tabs at the top to view different metrics.



- Click on any of the blue and white question marks  to open a box that explains that metric, often including instructions on how to interpret its visualization and/or how the metric was calculated.

## What do each of the metrics mean? (The outputs)

The dashboard automatically displays and visualizes metrics based on your selected inputs above. The metrics appear in four tabs. The metrics are listed below with a brief description. **More details on each metric are available on the dashboard** when you click on the blue and white question mark  next to the metric in question.

### On the RATES COMPARISON tab



**Bill Comparison:** The water system's monthly-equivalent residential water bill for the selected monthly consumption amount is shown as the dollar amount in the box and represented by the needle. The ranges of all of the selected comparison group's water systems' bills are represented by yellow and green colors around the dial. The middle dark green zone reflects the middle half of the systems' bills (the interquartile range: between the 25<sup>th</sup> and 75<sup>th</sup> percentiles). The low-end yellow zone reflects the lowest 10% of bills being charged within the comparison group. The high-end yellow zone reflects the highest 10% of bills being charged within the comparison group. The minimum, median, and maximum amounts charged within the comparison group are displayed outside the dial.

**Conservation Signal:** The volumetric price at a high residential consumption point is one of many pricing signals a water system may use to incentivize residential water use conservation. The volumetric price (\$/hundred cubic feet, or \$/1,000 gallons) for the next unit of consumption above 1,500 cubic feet or above 10,000 gallons is shown as the dollar (per unit) amount in the box and represented by the needle. The ranges of all of the selected comparison group's water systems' volumetric prices at that high consumption amount are represented by the colored bands around the dial. The minimum, median, and maximum

volumetric prices charged within the comparison group are displayed outside the dial.

**Cost Recovery:** This is the total operating revenues divided by the total operating expenses of the water system's fund during Fiscal Year 2018. Total operating expenses, following standard accounting principles, include expenses for operations, maintenance, and depreciation, but excludes debt service and future capital costs that are not captured in depreciation. In other words, the annual depreciation value of existing assets are included in this metric (estimating what would need to be set aside each year to replace the asset), while principal and interest payments on existing debt and reserves being set aside for future capital expenditures are not included.

A ratio of less than 1.0 indicates that total operating revenues collected in the fiscal year were insufficient to cover the costs of day-to-day operations and to replace the value of the assets that depreciated during the year. A ratio of just over 1.0 might still not provide all of the revenues needed to cover operations, maintenance and future capital costs, because future costs for rehabilitation and replacement exceed past costs that are being depreciated, and additional costs such as debt service and costs for new infrastructure are not included in this metric. The higher this ratio, the more likely the water system will be able to fund its long-term operations sustainably.

**Median Affordability:** This is the percent of median household income that the residential water bill at the selected consumption amount represents, commonly known as “percent MHI”. It demonstrates the financial burden of water bills at the selected consumption point on a household whose income is at the median within the Census Place or County. The higher this metric is, the more financially burdensome the water rates are to households with close to that income.

The median household income is determined from the U.S. Census Bureau for the Census Place (city or town) or County that is closest to or that encompasses the water system’s service area. It is not the median household income as computed by the State Water Board within your water system’s specific service area that is used to determine eligibility for funding assistance.

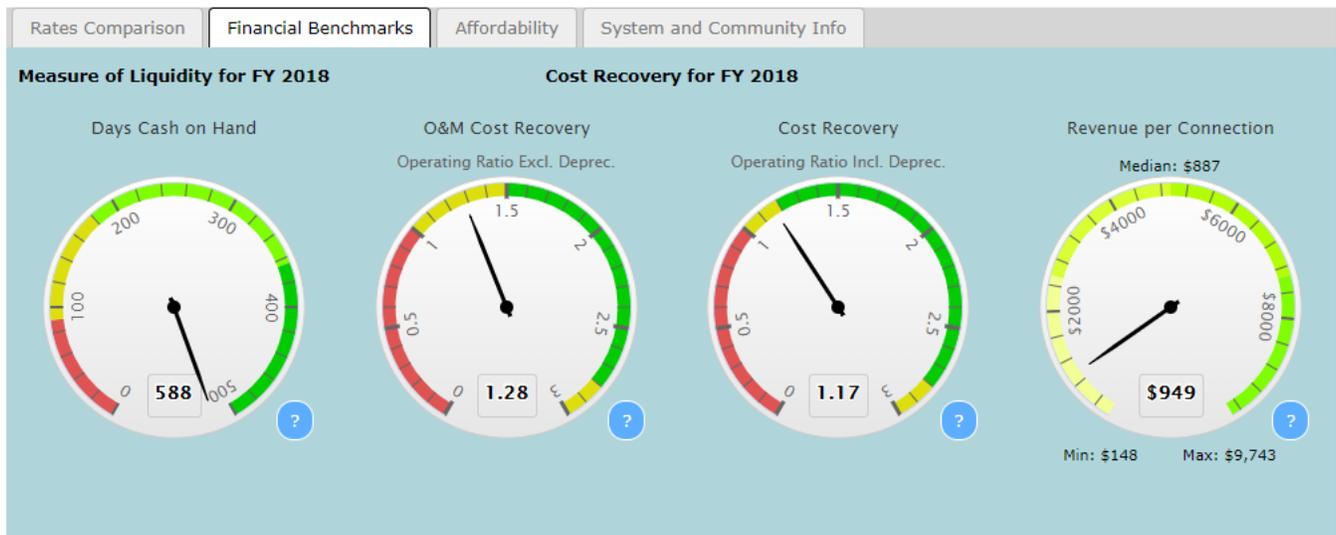
Percent MHI is one of many metrics used to assess affordability of water rates, but should not be used in isolation. Additional affordability metrics are displayed under the Affordability tab. These metrics are similar to metrics being assessed by SWRCB, although the income values may differ depending on the community or service areas being assessed.

**Regional Population Change:** The eight-year percent change in population in the Census Place or County from 2010 to 2018. A positive percentage reflects population growth, while a negative percentage reflects population decline. Because water system costs do not change proportionally to population growth or decline, a water system serving an area with a declining population may face greater challenges over time in generating sufficient revenues to cover its expenses.

The population estimates used for this metric are derived from the U.S. Census Bureau for the Census Place or County that is closest to or encompasses the water system. The change represents a population change at a nearby regional level, but is not specifically measuring the water system’s service population change. The trend in regional population change is useful to approximate long term changes in demographic conditions in and around the water system that may, ultimately, affect the growth (or decline) in service connections for the water system.

**Days Cash on Hand:** This is the sum of unrestricted cash and investments of the water fund at the end of Fiscal Year 2018 relative to that year’s average daily operations and maintenance costs. It measures the number of days the water system could pay for daily expenditures from unrestricted cash saved up in reserves, with no revenue coming in. The higher the number, the more protected the water fund is against revenues declines and shocks.

## On the **FINANCIAL BENCHMARKS** tab



**Days Cash on Hand:** Described above.

**O&M Cost Recovery:** Similar to the Cost Recovery metric described above, although this version of the metric focuses only on the daily operations and maintenance (O&M) expenses without depreciation. Specifically, this metric is calculated as the total operating revenues divided by the total operating expenses *excluding* depreciation of the water system's fund during Fiscal Year 2018. Total operating expenses excluding depreciation are the expenditures used for daily operations and maintenance only, but excludes debt service and all present and future capital costs and needs. A ratio of less than 1.0 indicates that total operating revenues collected in the fiscal year were insufficient to cover the costs of day-to-day operations and maintenance, creating a budget deficit that must be covered by reserves or other revenue sources during FY2018.

**Cost Recovery:** Described above.

**Revenue per Connection:** This is the total operating revenues in Fiscal Year 2018 divided by the estimated number of service connections. Usually, the number of service connections is close to the number of billing accounts, and this metric approximates the average revenues collected per account. The higher the revenue per connection (or per account), which is directly influenced by the water rates, the more financial resources the water system can use to pay for its costs. The minimum, median, and maximum revenues per connection collected by the water systems in the dashboard with Fiscal Year 2018 financial data are displayed outside the dial.

## On the AFFORDABILITY tab



**Affordability to Lower Income Customers:** Similar to the Median Affordability metric described above, although this version of the metric focuses on the financial burden of monthly water bills of 6 hundred cubic feet of consumption on a household whose income is at the lowest 20<sup>th</sup> percentile within the Census Place or County. Thus, this metric assesses the financial burden of water rates on households of lower income in the community, rather than households at the median income. The higher the percent of income spent on 6 ccf water bills in the community, the more financially burdensome the water rates are to low income households.

The 20<sup>th</sup> percentile household income is determined from the U.S. Census Bureau for the Census Place (city or town) or County that is closest to or that encompasses the water system's service area. The income distribution of households in the Census Place or County may not be exactly reflective of the income distribution of the water system's customers, but is an approximation.

**Median Affordability:** Described above. In this tab, this metric is calculated for water bills at 6 ccf, not at the consumption amount selected on the "Rates Comparison" tab.

**Hours at Minimum Wage for 6 ccf:** This is the number of hours a person making minimum wage would need to work in order to pay a water bill for 6 hundred cubic feet in one month. It measures the financial burden of water bills for lowest wage households. The minimum hourly wage is the state's \$12.00/hour or a local government's higher minimum wage, current as of July 2020. The higher the number of hours a person making minimum wage must work to pay for a 6 ccf water bill, the greater the financial burden on the lowest wage households.

**Demographic Information:** this table identifies the Census Place or County used in calculating metrics dependent on Census data. The table also displays various socioeconomic data from the 2014-2018 5-year American Community Survey from the U.S. Census Bureau to provide information about the conditions that households within or near the water system are experiencing that may affect their ability to pay for water service.

**On the SYSTEM AND COMMUNITY INFO tab**

Rates Comparison	Financial Benchmarks	Affordability	System and Community Info
<b>Water System Characteristics Obtained from SDWIS and the CA Water Board</b>			
PWSID	CA		
Community Water System Name			
Primary Water Source Type	surface water		
Number of Monitoring Violations 2017-2020	0		0
Number of Water Quality Violations 2017-2020			0
Service Population	3,836		0
Number of Connections	1,835		0
Percent of Connections that are Metered			0
Compliance Status with the Human Right to Water watchlist in 2020	Potentially At Risk		0
<b>Community Characteristics Obtained from the Census Bureau</b>			
Service Area			
Population 2018	3,811		
Population 2010	3,790		
Population Change	0.55%		

**Water System Characteristics:** this table identifies the community water system and its characteristics, including its primary water source type, estimated service population, and estimated number of connections as of early 2020. The number of monitoring violations and number of water quality violations reflect the total number of regulatory violations of the community water system from July 2017 through June 2020. The data are compiled in the Safe Drinking Water Information System and by the California Water Boards.

The percent of connections that are metered is estimated from the total number of metered connections (compiled by the California Water Boards) divided by the total number of connections for the community water system listed in the Safe Drinking Water Information System.

Compliance status with the Human Right to Water requirements is assessed by the SWRCB as of July 30, 2020. For more information about the Human Right to Water, see [Human Right to Water Portal](https://www.waterboards.ca.gov/water_issues/programs/hr2w/): [https://www.waterboards.ca.gov/water\\_issues/programs/hr2w/](https://www.waterboards.ca.gov/water_issues/programs/hr2w/).

**Community Characteristics:** this table displays the 2010 and 2018 population estimates for the Census Place or County that is associated with the water system. The population estimates are extracted from U.S. Census Bureau data. The percentage change in population from 2010 to 2018 is displayed, providing an approximation of a regional population change (described above), but might not reflect the water system’s actual service population change.

## **The information displayed about my water system is incorrect or some of the data are missing. How do I correct or provide that data?**

The dashboard displays water rates as of July 2020 and financial data from Fiscal Year 2018. If any of these data are incorrect or are missing on the dashboard, please email the data to the EFC at UNC at [efc@sog.unc.edu](mailto:efc@sog.unc.edu) with a subject heading “Correction to the California Small Water Systems Rates Dashboard” by November 30, 2020.

## **I don't see my water system on the dashboard. How do I add it?**

This dashboard only includes community water systems in California that serve between 500 and 3,300 service connections that provided rates and/or financial data for display during the summer of 2020. Over 90% of the state's community water systems of that size that charge water rates are included in the dashboard. If your community water system is of that size and is not included on this dashboard, it may be that financial data and a rate sheet were not received during the data collection period, or clarifying questions went unanswered. Please provide your July 2020 water system's rates, FY2018 financial data, and water system PWSID to the EFC at UNC at [efc@sog.unc.edu](mailto:efc@sog.unc.edu) by November 30, 2020, with a subject heading “Addition to the California Small Water Systems Rates Dashboard”.

This version of the dashboard is used as a pilot for the State of California, and additions to the dashboard of water systems outside the scope of the dashboard won't be allowed at this time. However, please communicate your desire to be included in future iterations of the dashboard (for any water system size) by emailing the SWRCB at [SAFER@waterabords.ca.gov](mailto:SAFER@waterabords.ca.gov).

## **Will the dashboard continue to be updated? How do I submit more up-to-date data on my water system?**

This version of the dashboard is used as a one-time pilot for the State of California. There are currently no plans to update the dashboard in the immediate future. The State Water Board would like feedback from water systems and the public on whether the dashboard should be updated and maintained in the future. Please see above for providing feedback.

In order to ensure comparability of data across water systems at the same point in time, this version of the dashboard will not be updated with more recent data from water systems included on the dashboard.

## **How can I learn more about the California Small Water Systems Rates Dashboard and how it can help me?**

There is a free webinar scheduled for October 30, 2020, between 9:00am – 11:00am PDT. Registration for webinar workshop: [Pilot Financial Dashboard](https://waterboards.zoom.us/webinar/register/WN_8Yp1KvmXTDKSctJnL9SwNA): [https://waterboards.zoom.us/webinar/register/WN\\_8Yp1KvmXTDKSctJnL9SwNA](https://waterboards.zoom.us/webinar/register/WN_8Yp1KvmXTDKSctJnL9SwNA).

During this webinar, the Environmental Finance Center at UNC will demonstrate how to use the dashboard, explain the metrics, and how to interpret the results and use them in making financial decisions for your water system. The webinar will be recorded and posted at [SAFER website](https://bit.ly/SAFER_Website) ([bit.ly/SAFER\\_Website](https://bit.ly/SAFER_Website)) for later viewing.

Alternatively, if a community water system you work with or work for serves fewer than 10,000 people (which includes the vast majority of the water systems in this dashboard) and you would like assistance in understanding its metrics, and how you can use the results in decision-making, you may schedule a time to discuss one-on-one with the EFC at UNC before

the end of March 2021. Please email Stephen Lapp at [slapp@sog.unc.edu](mailto:slapp@sog.unc.edu) and specify you would like a California Small Water Systems Rates Dashboard discussion for your water system.

### **How do I provide feedback on the California Small Water Systems Rates Dashboard?**

Please send your feedback to [SAFER@waterboards.ca.gov](mailto:SAFER@waterboards.ca.gov) at the California State Water Resources Control Board during the public review period from October 30, 2020 through November 30, 2020. **Please submit your comments by November 30, 2020.**

After that date, please contact the EFC at UNC directly at [efc@sog.unc.edu](mailto:efc@sog.unc.edu).