CALIFORNIA
Water Boards

SAFER DASHBOARD
USER GUIDE

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CONTENTS

SAFER DASHBOARD USER GUIDE I

INTRODUCTION 3

NAVIGATING THE DASHBOARD 3

Statewide or Regional View 3

1. Filter Options 4
2. Map Display & Search Options 5
3. About the SAFER Systems 6
4. Drivers of Risk & Risk Indicator Performance 6
5. List of Water Systems 7
6. Clear Filters & Export Data Buttons 7

Statewide or Regional View - Risk Categories 7

Individual Water System View 9

1. Water System Details 10
2. Failing and At-Risk Status 11
3. Risk Assessment Category Risk 12
4. Failing Criteria Met 12
5. Risk Indicator Performance 14
6. Water System Location 15
7. Back and Export Buttons 15

DATA REFRESH RATE 15

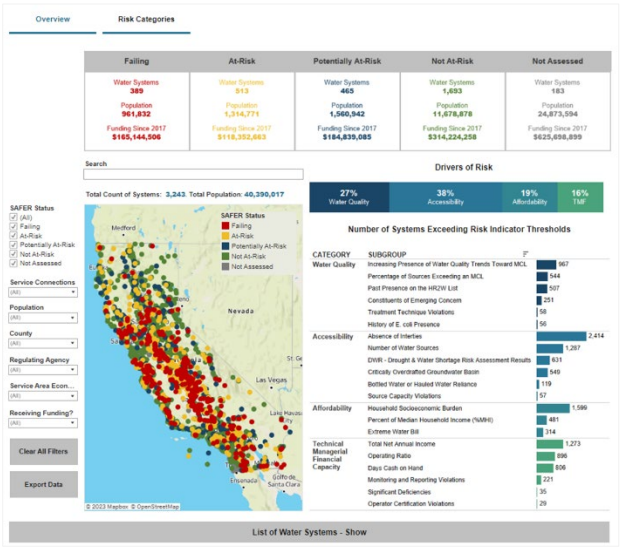
Failing Water Systems 15

Risk Assessment Results 16

CATEGORY RISK DETERMINATION 16

ACCESSING THE DATA 16

INTRODUCTION



In 2022, the State Water Board released the web-based SAFER Dashboard. The SAFER Dashboard displays the current list of Failing water systems and the results of the Risk Assessment for public water systems. This is a core component of the State Water Board's annual Drinking Water Needs Assessment.

The Dashboard displays risk drivers for public water systems. The Dashboard includes source data from the State Water Board, the Department of Water Resources, and the Office of Environmental Health Hazard Assessment. The Dashboard is used by internal staff and members of the public to identify and explore Failing and At-Risk public water systems and how they perform in the following risk categories: water quality, accessibility, affordability, and TMF (technical, managerial, and financial) capacity. The Dashboard displays summary statistics of the number of Failing and At-risk public water systems in different risk categories and shows users the locations of these systems. Users can apply filters to view regional or system-level statistics.

Learn more about the Risk Assessment for public water systems in the methodology Appendix.[1]

NAVIGATING THE DASHBOARD

The SAFER Dashboard can be viewed in the State Water Board's website at the URL below:

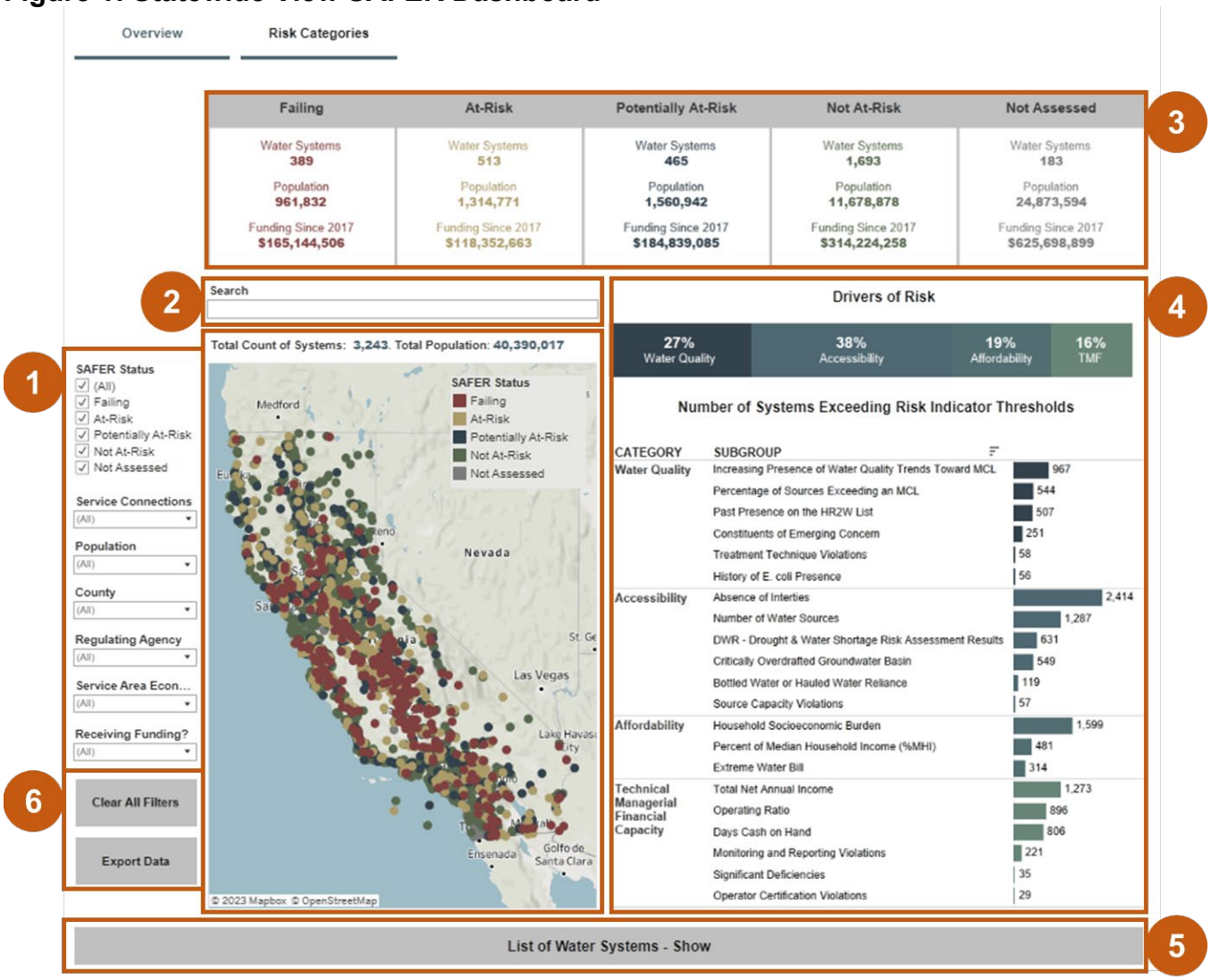
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/saferdashboard.html

STATEWIDE OR REGIONAL VIEW

By default, the SAFER Dashboard displays the full statewide dataset of Failing water systems and the results of the Risk Assessment. Figure 1 and the sections below provide an overview of the information and functionality currently available in the statewide view.

[1] Appendix: Risk Assessment Methodology for Public Water Systems
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/needs/2024/2024risk-assessment-pws-methodolgy.pdf

Figure 1: Statewide View SAFER Dashboard



1. FILTER OPTIONS

Users can filter the SAFER Dashboard to change the data summaries displayed. Users can select multiple filters at a time using the drop-down menu options on the left side of the Dashboard. Table 1 summarizes the filter options currently available.

Table 1: Filter Options in the SAFER Dashboard

Filter Option	About
SAFER Status[2]	Whether a water system is Failing, At-Risk or Potentially At-Risk of failing, Not At-Risk of failing, or Not Assessed.

[2] Failing criteria is summarized in the Drinking Water Needs Assessment and detailed online at the link below. The criteria used to determine At-Risk, Potentially At-Risk, and Not At-Risk water systems is detailed in Appendix A of the annual Drinking Water Needs Assessment report.
Failing Criteria: https://www.waterboards.ca.gov/water_issues/programs/hr2w/docs/hr2w_expanded_criteria.pdf

Filter Option	About
Service Connections	The total number of service connections served by the water system.
Population	The total estimated population served by the water system.
County	The primary County where the water system is physically located.
Regulating Agency	The State Water Board District Office or Local Primacy Agency that is responsible for regulatory oversight of the system.
Service Area Economic Status	The disadvantage community statis of the water system, determined with U.S. Census median household income (MHI) data. "Disadvantaged community" or "DAC" means the entire service area of a community water system, or a community therein, in which the MHI is less than 80% of the statewide annual MHI level.[3] "Severely disadvantaged community" or "SDAC" means the entire service area of a community water system in which the MHI is less than 60% of the statewide MHI.[4]
Receiving Funding?	Indicates if the water system has received technical assistance, planning and/or construction funding from the State Water Board since 2017. This information is provided by the State Water Board's Division of Financial Assistance.

2. MAP DISPLAY & SEARCH OPTIONS

Users can use the search box to look-up a water system. Users can enter either a water system's name or a Public Water System ID (PWSID) number to search the list of active community water systems and schools.

Note: To clear the search box and re-set the map, the user must select the entered text, delete it, and hit enter with your keyboard within the search box.

The map will display the systems that meet the filtered criteria (1) or the water system the user has looked-up using the search box. The color of the point location represents the current SAFER Status of the water system. Above the map is a summary of the total number of systems meeting the filter criteria and the total population served by those water systems.

[3] Health & Saf. Code, § 116275, subd. (aa).
[4] Water Code § 13476, subd. (j)).

3. ABOUT THE SAFER SYSTEMS

The top of the SAFER Dashboard contains a breakdown summary of information regarding the systems that fall into the SAFER Status categories: Failing, At-Risk, Potentially At-Risk, Not At-Risk, and Not Assessed. As filters are applied to the Dashboard, the displayed numbers will automatically update to reflect the systems meeting both the SAFER Status criteria and the applied Dashboard filter criteria.

Table 2: SAFER Systems Data Summary

Summary Data by SAFER Status	About
Water Systems	Total count of water systems meeting the criteria for each SAFER Status.
Population	Total population served of the water systems meeting the criteria for each SAFER Status.
Funding Since 2017	Total amount of technical assistance, planning and construction funding provided by the State Water Board since 2017. This information is provided by the State Water Board's Division of Financial Assistance.

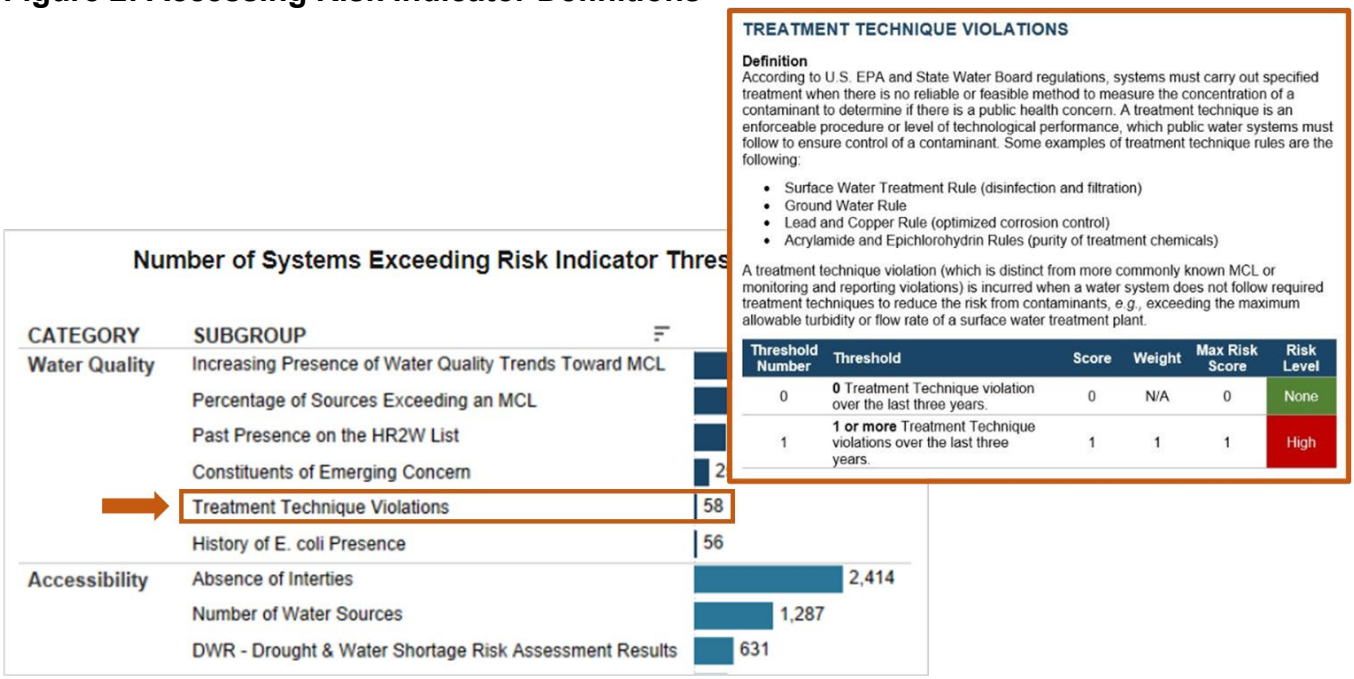
4. DRIVERS OF RISK & RISK INDICATOR PERFORMANCE

The right-side of the SAFER Dashboard displays the summary of water system performance in the Risk Assessment. The 'Drivers of Risk' chart indicates which risk categories the water systems displayed in the Dashboard accrued the most risk points in. The chart and the percentages will update automatically when filters are applied and/or is the user searches for a particular water system.

The 'Number of Systems Exceeding Risk Indicator Thresholds' bar chart displays the total number of water systems that meet the lowest risk criteria for each displayed risk indicator. The chart will update automatically when filters are applied and/or is the user searches for a particular water system.

Learn More: Users can click on a risk indicator title to open a new web-browser tab with the risk indicator definition and risk threshold criteria (Figure 2).

Figure 2: Accessing Risk Indicator Definitions



5. LIST OF WATER SYSTEMS

Selecting the 'List of Water Systems' button at the bottom of the SAFER Dashboard will Show and Hide the list of water systems that are meeting the applied filter criteria (1) or search box fields (2).

6. CLEAR FILTERS & EXPORT DATA BUTTONS

Selecting the 'Clear All Filters' button will de-select and re-set the filter options on the left side of the Dashboard (1). *Note*: This button will NOT clear the search box fields (2). To clear the search box, the user must select the entered text, delete it, and hit enter with your keyboard within the search box.

The 'Export Data' button will open a pop-up window with options for how to download the data displayed in the Dashboard. *Note*: This feature in the Dashboard is known to have issues. Users are encouraged to use the links above the Dashboard to access the data in a more user-friendly format.

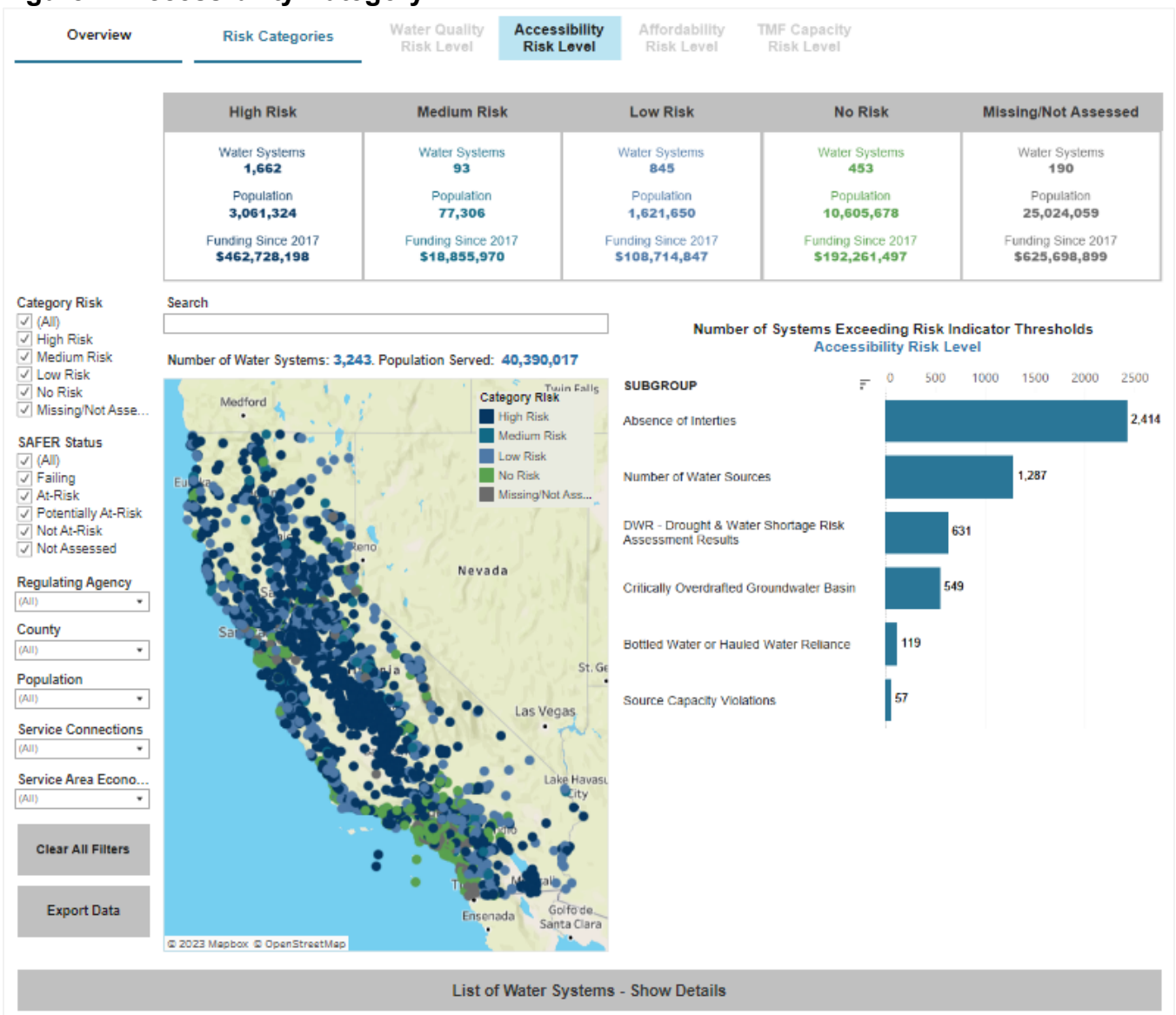
STATEWIDE OR REGIONAL VIEW - RISK CATEGORIES

The SAFER Dashboard statewide and regional view can be narrowed down to each risk category by clicking on 'Risk Categories' button at the top of the Dashboard: Water Quality; Accessibility; Affordability; and TMF (technical, managerial, and financial) Capacity (Figure 3).

Figure 3: Risk Categories

Users can select their desired Risk Category and the SAFER Dashboard will automatically refresh to display the statewide view of how water systems have performed within that category. The filter options, search box, and display features function the same as they do on the Overview view. The only NEW feature is the ability to view and filter by a system's performance in the risk category (to left filter option).

Figure 4: Accessibility Category



INDIVIDUAL WATER SYSTEM VIEW

The SAFER Dashboard also displays detailed information about individual water systems. To navigate to the individual water system view, users should click on the corresponding dot-location in the map (Figure 5).

Figure 5: Individual Water System View

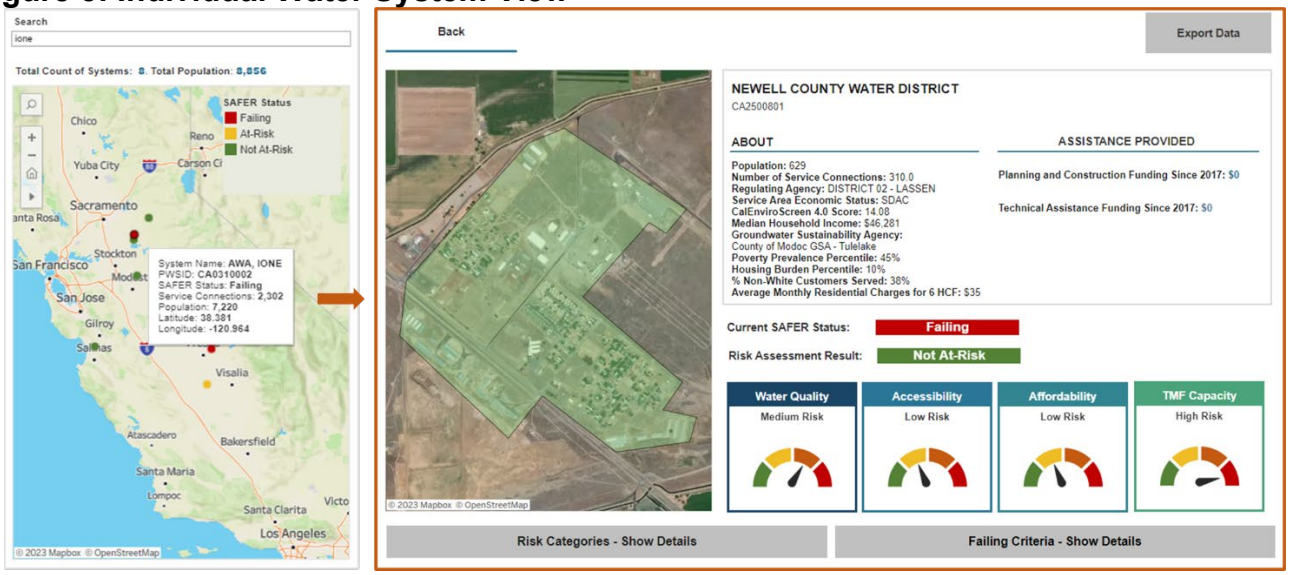
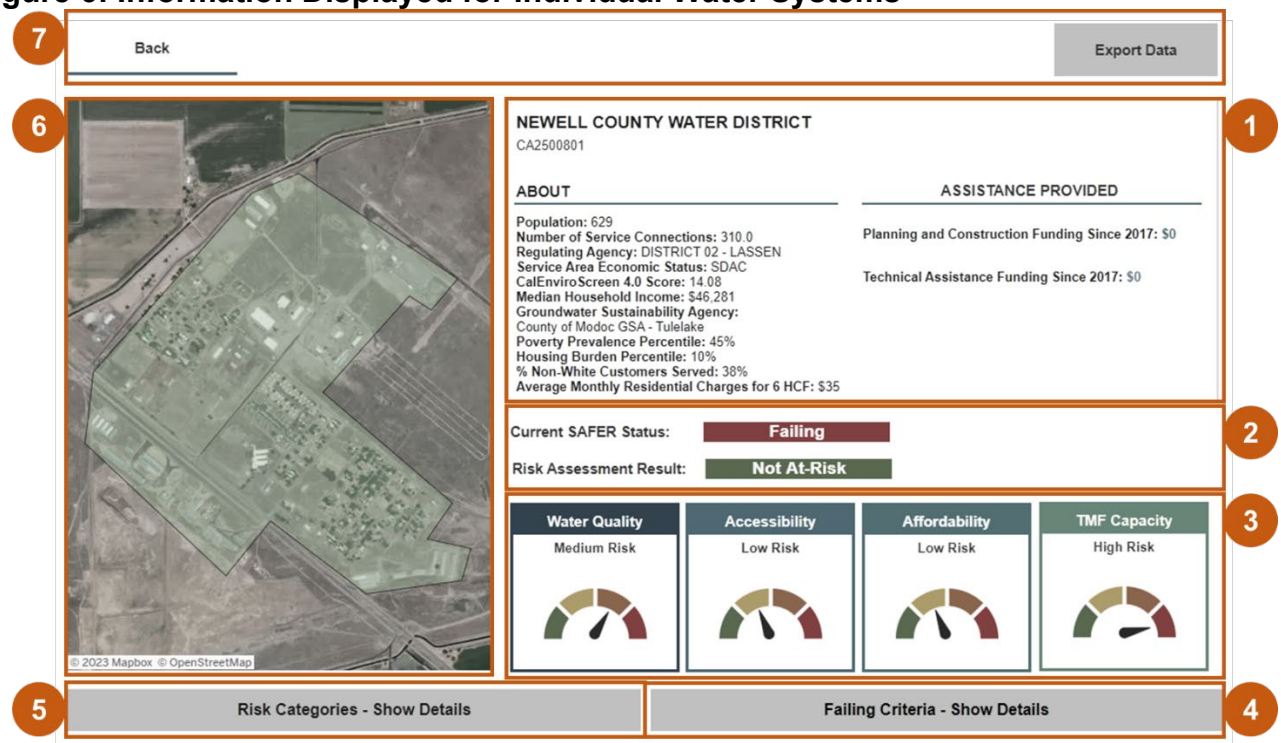


Figure 6 and the sections below provide an overview of the information and functionality currently available in the individual water system view.

Figure 6: Information Displayed for Individual Water Systems



1. WATER SYSTEM DETAILS

The profile page for individual water systems displays information about the system's location, size, demographics, State Water Board assistance received etc.

Table 3: Water System Details

Water System Information	About
Water System Name	The water system's name
Public Water System ID (PWSID = CA#######)	The unique identifier assigned by the State Water Board to individual water systems. The PWSID is used for the state and federal data and information tracking purposes.
Population	The total number of service connections served by the water system.
Number of Service Connections	The total estimated population served by the water system.
Regulating Agency	The State Water Board District Office or Local Primacy Agency that is responsible for regulatory oversight of the system.
Service Area Economic Status	The disadvantage community statis of the water system, determined with U.S. Census median household income (MHI) data. "Disadvantaged community" or "DAC" means the entire service area of a community water system, or a community therein, in which the MHI is less than 80% of the statewide annual MHI level.[5] "Severely disadvantaged community" or "SDAC" means the entire service area of a community water system in which the MHI is less than 60% of the statewide MHI.[6]
CalEnviroScreen 4.0 Score	CalEnviroScreen is a screening methodology that can be used to help identify California communities that are disproportionately burdened by multiple sources of pollution. Scores range from 0 to 100, with 100 representing high pollution burden and 0 low pollution burden.
Median Household Income	Median household income (MHI) is determined for a water system using American Community Survey data for household income. Community water system boundaries typically do not align with census boundaries where per capita income data is regularly collected. To assign an average median household income to a community water system spatially weighted income data is aggregated by

[5] Health & Saf. Code, § 116275, subd. (aa).
[6] Water Code § 13476, subd. (j)).

Water System Information	About
	census block group within the water system service area. Learn more in Appendix E of the annual Needs Assessment report.
Groundwater Sustainability Agency	The Groundwater Sustainability Agency the water system's location is associated with.
Poverty Prevalence Percentile	Measures the percent of the population living below two times the federal poverty level and can be represented reliably at the census block group, tract, and county level.
Housing Burden Percentile	Measures the percent of households in a census tract that are both low income (making less than 80% of the Housing and Urban Development (HUD) Area Median Family Income) and severely burdened by housing costs (paying greater than 50% of their income to housing costs).
% Non-White Customers Served	The estimated percentage of population served by the water system that is non-white. U.S. Census and water system service area boundaries are used to calculate this value.
Average Monthly Residential Charges for 6 Hundred Cubic Feet (HCF)	The most common residential drinking water charges for 6 hundred cubic feet (HCF) of water per month. This data is collected annually from water systems.
Planning and Construction Funding Since 2017	Indicates the estimated total amount of State Water Board grant and/or loan planning and/or construction funding the water system has received since 2017. Planning and construction funding is allocated to water systems directly. This information is provided by the State Water Board's Division of Financial Assistance.
Technical Assistance Funding Since 2017	Indicates the estimated total amount of State Water Board technical assistance funding that the water system has benefitted from since 2017. Technical assistance funding is allocated to designated technical assistance providers that work directing with a water system. This information is provided by the State Water Board's Division of Financial Assistance.

2. FAILING AND AT-RISK STATUS

The individual water system profile page displays the current SAFER Status of the water systems and how the system is performing in the Risk Assessment. The SAFER Status can be one of four options as defined in Table 4.

The water system's Risk Assessment performance is based on the most current Risk Assessment methodology and data available. See Appendix A of the annual Needs Assessment report to learn more about the current methodology and the section below on the refresh rate of the Risk Assessment results. If a water system is system's SAFER Status is

currently Failing, the Risk Assessment result will indicate what the systems SAFER Status will be once it comes off the Failing list.

Table 4: SAFER and Risk Assessment Status

Status	About
Failing	Failing water systems are those that are meeting current Failing criteria as defined by the State Water Board.[7]
At-Risk	Water system's At-Risk of failing. Systems are designated At-Risk based on their performance across multiple risk indicators in the Risk Assessment as defined in the Drinking Water Needs Assessment.[8]
Potentially At-Risk	Water system's Potentially At-Risk of failing. Systems are designated Potentially At-Risk based on their performance across multiple risk indicators in the Risk Assessment as defined in the Drinking Water Needs Assessment.
Not At-Risk	Water system's Not At-Risk of failing. Systems are designated Not At-Risk based on their performance across multiple risk indicators in the Risk Assessment as defined in the Drinking Water Needs Assessment.
Not Assessed	Water systems that are currently not Failing and not included in the Risk Assessment analysis.[9]

3. RISK ASSESSMENT CATEGORY RISK

The Risk Category dials display how water systems are performing within each category of the Risk Assessment. Sections below detail the methodology used to determine category High, Medium, Low, or No Risk.

4. FAILING CRITERIA MET

Users can click on the 'Failing Criteria' Hide and Reveal button at the bottom of the SAFER Dashboard to display information about a system's Failing SAFER Status if the system is currently Failing Figure 7.

[7] Failing criteria is summarized in the Drinking Water Needs Assessment and detailed online at the link below. Failing Criteria: https://www.waterboards.ca.gov/water_issues/programs/hr2w/docs/hr2w_expanded_criteria.pdf
[8] The criteria used to determine At-Risk, Potentially At-Risk, and Not At-Risk water systems is detailed in Appendix A of the annual Drinking Water Needs Assessment report.
[9] Large community water system with greater than 30,000 service connection or more than 100,000 population served are not included in the Risk Assessment and will not have a Risk Assessment result.

Figure 7: Failing Details

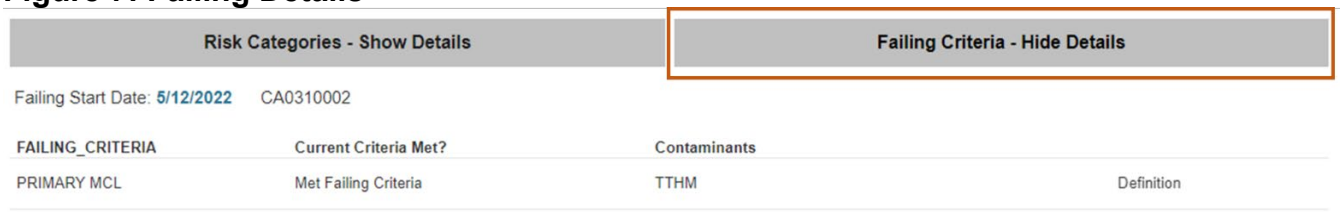
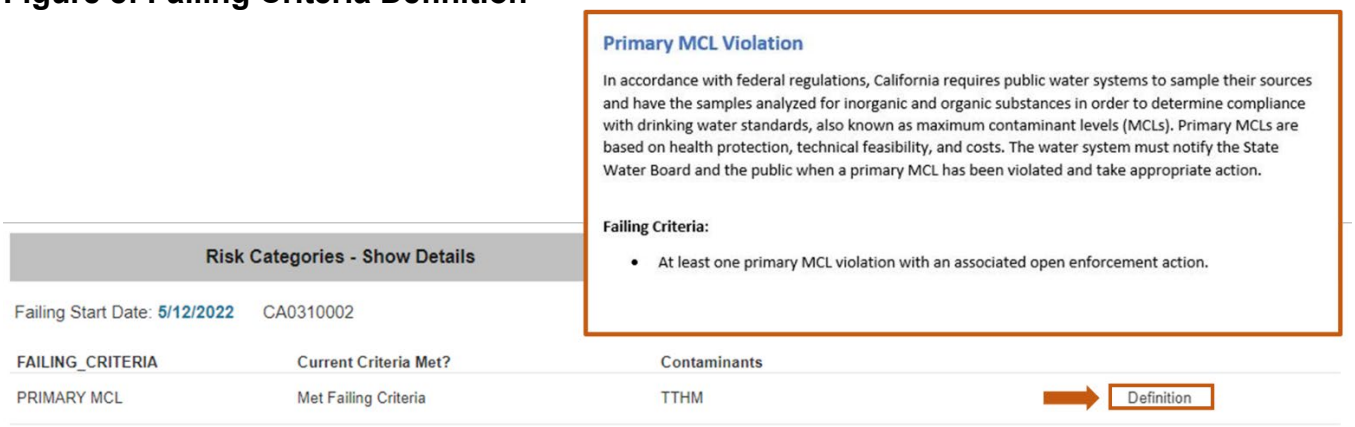


Table 5: Failing Details

Displayed Information	About
Failing Start Date	The data the water system began meeting the Failing criteria and was added to the Failing list. If a system id Failing because they are meeting multiple Failing criteria, the Start date will represent the oldest criteria met.
Failing Criteria	The Failing criteria the water system is meeting as defined by the State Water Board.[10] A system can be on the Failing list for more than one criterion met.
Contaminants	The contaminants associated with the Failing criteria met. A water system can have multiple contaminates associated with a Failing criteria met.
Definition	Clicking on the word “Definition” will open a new web-browser tab with the definition and details for the associated Failing criteria (Figure E8).

Figure 8: Failing Criteria Definition



[10] Failing criteria is summarized in the Drinking Water Needs Assessment and detailed online at the link below.
Failing Criteria: https://www.waterboards.ca.gov/water_issues/programs/hr2w/docs/hr2w_expanded_criteria.pdf

5. RISK INDICATOR PERFORMANCE

Users can click on the 'Risk Categories' Hide and Reveal button at the bottom of the SAFER Dashboard to display information on how the water system has performed for all the Risk Assessment indicators (Figure 9).

Figure 9: Risk Categories

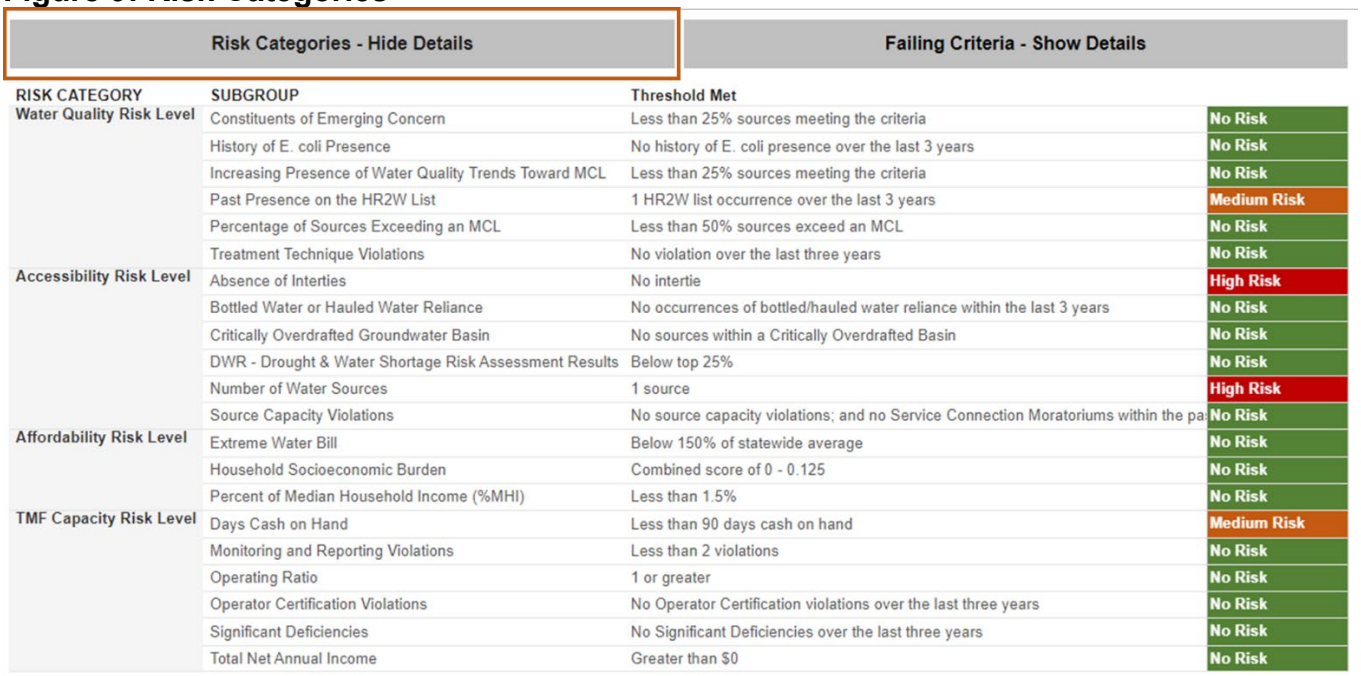
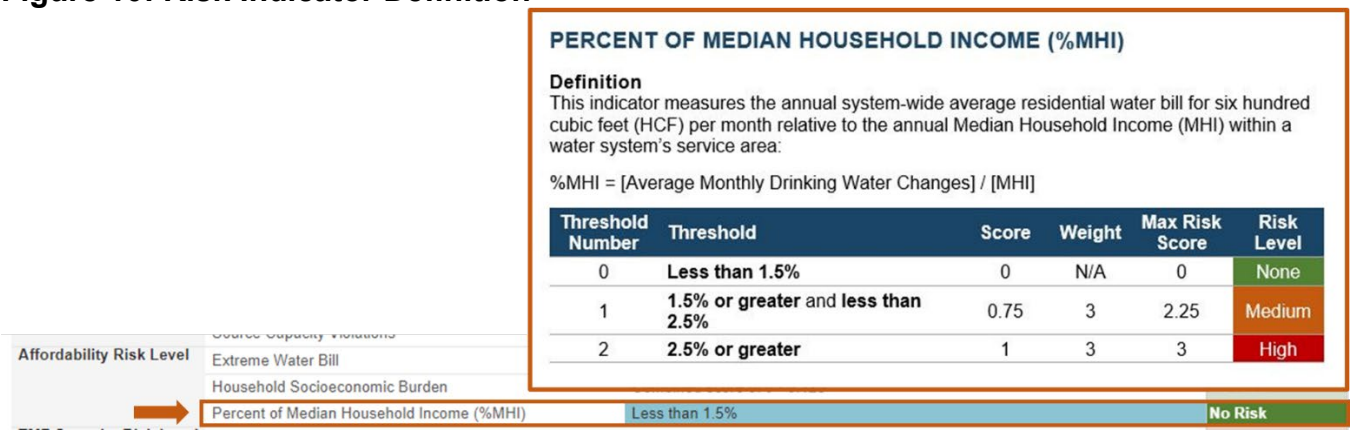


Table 6: Risk Category Details

Displayed Information	About
Risk Category	The category of indicators in the Risk Assessment. Categories include: Water Quality, Accessibility, Affordability, and TMF (technical, managerial, and financial) Capacity
Subgroup	This is the individual risk indicator within the category. Click on the name to learn more (Figure 10).
Threshold Met	How the water system performed for each individual risk indicator. Each threshold corresponds to a risk level which is based on a calculation of risk points. Click on the name of the risk indicator to learn more (Figure 10).
Associated Risk Level	The level of risk associated with the threshold met for each individual risk indicator. Click on the name to learn more (Figure 10).

Learn More: Users can click on a risk indicator title to open a new web-browser tab with the risk indicator definition and risk threshold criteria (Figure 10).

Figure 10: Risk Indicator Definition



6. WATER SYSTEM LOCATION

The individual water system profile page will display the water system's service area boundary. If the State Water Board does not have the water system's service area boundary, it will display an estimated point location on the map. This data is from the State Water Board's System Area Boundary Layer (SABL) dataset.[11]

7. BACK AND EXPORT BUTTONS

The 'Back' button at the top of the SAFER Dashboard will navigate the user back to the Statewide View of the SAFER Dashboard. The 'Export Data' button will open a pop-up window with options for how to download the data displayed in the Dashboard. *Note*: This feature in the Dashboard is known to have issues. Users are encouraged to use the links above the Dashboard to access the data in a more user-friendly format.

DATA REFRESH RATE

The SAFER Dashboard displays data from many different sources that is collected and analyzed at different frequencies. The sections below provide a summary of the data refresh rate.

FAILING WATER SYSTEMS

The Failing list of water systems is updated **daily** in the SAFER Dashboard before noon. The Failing list of water systems is generated by reviewing all new and historical violation and enforcement data for active community water systems and non-community schools and identifying which systems are currently meeting the Failing criteria.[12] Systems that are meeting the criteria are listed as Failing in the Dashboard, those that are not Failing will have their

[11] California Drinking Water System Boundaries
https://gispublic.waterboards.ca.gov/portal/home/item.html?id=fbba842bf134497c9d611ad506ec48cc
[12] Failing Criteria:
https://www.waterboards.ca.gov/water_issues/programs/hr2w/docs/hr2w_expanded_criteria.pdf

results from the Risk Assessment displayed: At-Risk, Potentially At-Risk, Not At-Risk, or Not Assessed.

RISK ASSESSMENT RESULTS

The Risk Assessment results and corresponding performance for individual risk indicators are updated in the SAFER Dashboard on a **quarterly** basis. Important to note that some risk indicators are dependent on data that is not collected or updated more than once a year. For example, 'Days Cash in Hand,' is dependent on water system reporting through the electronic Annual Report (eAR). This indicator will stay constant throughout the year unless a data change request is made or when new eAR data becomes available. Other risk indicators, like 'Percentage of Sources Exceeding an MCL,' have new data submitted to the State Water Board on a monthly basis. These indicators will be updated quarterly and may impact a water system's aggregated performance in the Risk Assessment.

CATEGORY RISK DETERMINATION

The SAFER Dashboard displays in multiple locations the Risk Category performance for water systems. **This performance designation is for the SAFER Dashboard only and does not have a direct role determining the Risk Assessment results for water systems.** The purpose of the Category Risk level determination is to allow SAFER Dashboard users to assess relative risk per category. Table 7 details the normalized risk score ranges used to determine Category Risk levels. The thresholds used for the risk levels were determined based on an analysis of how systems were performing in the category and comparing category scores to Failing and At-Risk water system performance within the category. Refer to Appendix A of the annual Drinking Water Needs Assessment to learn more about how risk points are accrued within each Category.

Table 7: Risk Scores per Category and Risk Levels

Risk Category	High Risk	Medium Risk	Low Risk	No Risk
Water Quality	$0.6 \leq n$	$0.45 \leq n < 0.6$	$0 < n < 0.45$	0
Accessibility	$0.64 \leq n$	$0.49 \leq n < 0.64$	$0 < n < 0.49$	0
Affordability	$0.8 \leq n$	$0.65 \leq n < 0.8$	$0 < n < 0.65$	0
TMF Capacity	$0.64 \leq n$	$0.49 \leq n < 0.64$	$0 < n < 0.49$	0

ACCESSING THE DATA

A hyperlink for a user-friendly excel spreadsheet is accessible at the top of the Dashboard screen. It contains a snapshot in time of the Risk Assessment results and the Failing list.