

SAFER: Proposed Changes to the 2022 Drinking Water Needs Assessment

February 2, 2022
9:00 am – 12:00 pm
Remote participation only



Meeting Logistics

Kristyn Abhold
Division of Drinking Water
Needs Analysis Unit

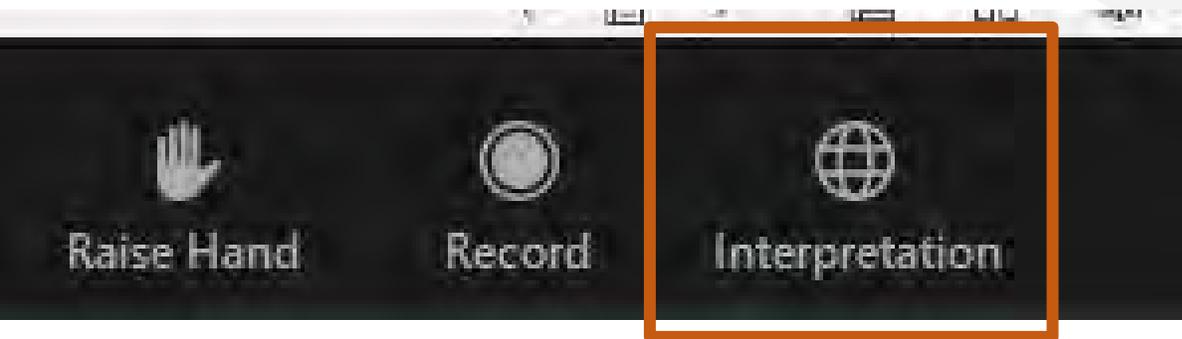


Water Board's Mission Statement

Preserve, enhance, and restore the quality of California's water resources and drinking water for the protection of the environment, public health, and all beneficial uses, and to ensure proper water resource allocation and efficient use, for the benefit of present and future generations.

Choose Your Language

- We have an English and Spanish Channel



Ways to Participate

- 1. Watch ONLY:** Visit video.calepa.ca.gov
- 2. Email:** Submit a comment or ask a question that will be read aloud, send an email to: safer@waterboards.ca.gov
- 3. Q&A:** Submit a question using the Q&A feature at the bottom of your Zoom Screen. You can UPVOTE any question you would like answered.
- 4. Raise Hand:** Attendees will be given the opportunity to provide verbal comment or ask questions, if you're interested in this option, please raise your virtual hand when the time is right.

- Please wait for your name to be called.
- Public comments are 3 minutes each.

Audience Poll Question 1

Are you familiar with the **Drinking Water Needs Assessment**?

- Yes
- No

2021 Drinking Water Needs Assessment: <https://bit.ly/3mAz2yK>

Respond to survey here: <https://forms.office.com/g/XZjxD53bLA>

Audience Poll Question 2

Have you read the recently released white paper: ***“Proposed Changes for the 2022 Drinking Water Needs Assessment”***?

- Yes, I read the whole thing
- Yes, I skimmed it
- No, but I plan to
- No, I don't intend to read it

Access the white paper here: <https://bit.ly/3g8npgi>

Respond to survey here: <https://forms.office.com/g/XZjxD53bLA>

Agenda

- 1 SAFER PROGRAM
- 2 RISK ASSESSMENT FOR PUBLIC WATER SYSTEMS, SSWSs, & DOMESTIC WELLS
- 3 DROUGHT INFRASTRUCTURE COST ASSESSMENT
- 4 AFFORDABILITY ASSESSMENT
- 5 NEXT STEPS



2012 - Human Right to Water (HR2W)

Water Code Section 106.3, the State statutorily recognizes that:

“every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.”





Failing Water Systems: Human Right to Water (HR2W) List

State Water Board has been tracking failing water systems that meet HR2W criteria since 2017.

HR2W criteria was expanded in Spring 2021 beyond water quality violations.

Learn more:

https://www.waterboards.ca.gov/water_issues/programs/hr2w/

Expanded Criteria for Failing Water Systems: HR2W List

Criteria	Before 3.2021	After 4.2021
Primary MCL Violation with an open Enforcement Action	Yes	Yes
Secondary MCL Violation with an open Enforcement Action	Yes	Yes
E. Coli Violation with an open Enforcement Action	No	Yes
Treatment Technique Violations (in lieu of an MCL): <ul style="list-style-type: none"> • One or more Treatment Technique violations (in lieu of an MCL), related to a primary contaminant, with an open enforcement action; and/or • Three or more Treatment Technique violations (in lieu of an MCL), related to a primary contaminant, within the last three years. 	Partially	Expanded
Monitoring and Reporting Violations (related to an MCL and TTs): <ul style="list-style-type: none"> • 3 Monitoring and Reporting violations (related to an MCL) within the last three years where at least one violation has been open for 15 months or greater. 	No	Yes

SB 200 and the SAFER Program

In 2019, to advance the goals of the Human Right to Water “HR2W”, California passed Senate Bill 200, which enabled the State Water Board to establish the **Safe and Affordable Funding for Equity and Resilience (SAFER) Program**.



Safe and Affordable Drinking Water Fund



Data Collection & Analysis



Consolidation & Regional Solutions



Administrators



Technical Assistance & Capacity Building

Needs Assessment Components



Risk Assessment

Community Water Systems; K-12 Schools; SSWS, & DWs



Cost Assessment

HR2W & At-Risk Systems and Domestic Wells



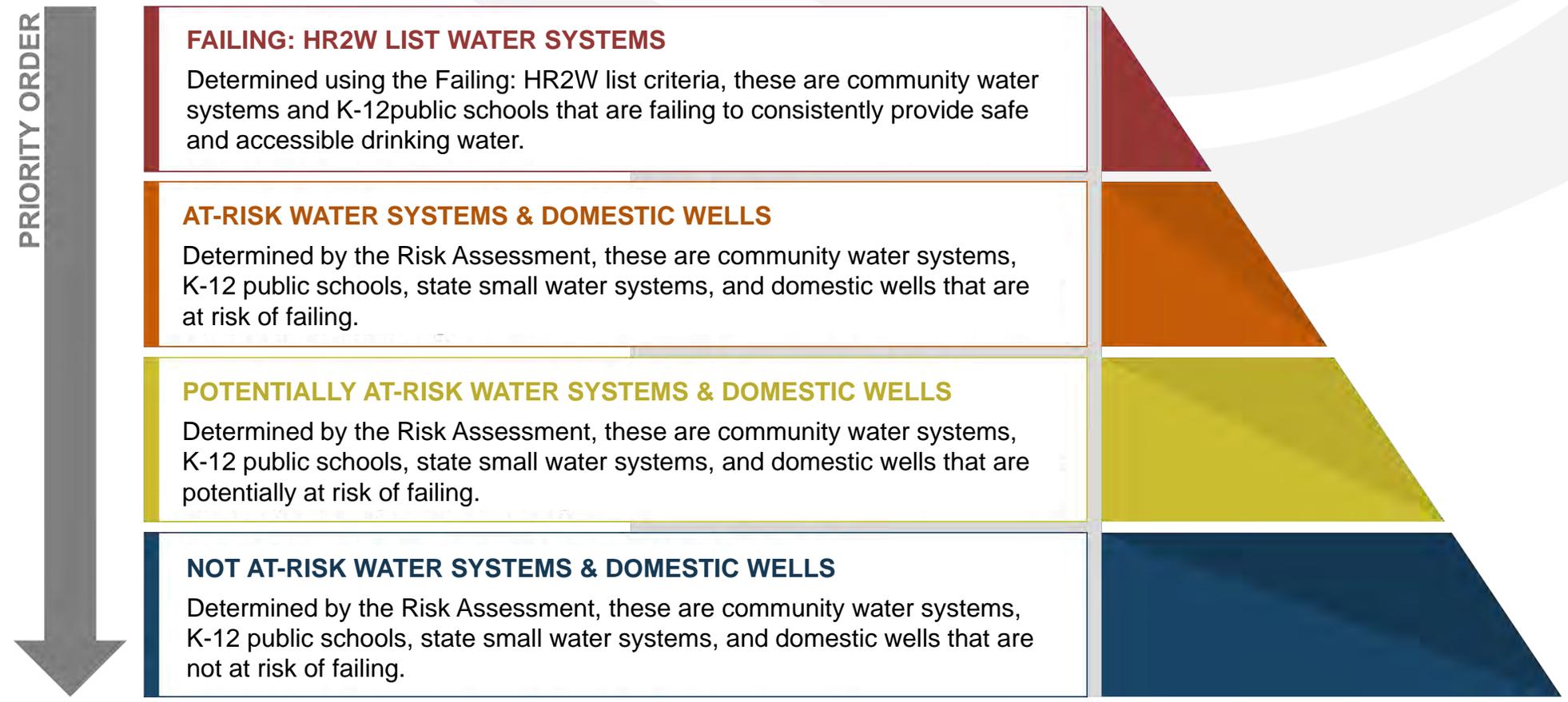
Affordability Assessment

DAC/SDAC Community Water Systems

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

SB 200 and the Needs Assessment

The Drinking Water Needs Assessment helps inform prioritization of SAFER resources: funding, technical assistance, consolidation outreach, administrators etc.



Access the Full 2021 Needs Assessment Report

The screenshot shows the California Water Boards website. At the top, there is a navigation bar with icons for Board, Programs, Drinking Water, Water Quality, Water Rights, Notices, and Water Boards, along with a search icon. Below this is the main content area titled "California Drinking Water Needs Assessment".

Needs Assessment Core Components:

- Risk Assessment:** Represented by a circular icon with a triangle and a circle.
- Cost Assessment:** Represented by a circular icon with a dollar sign and arrows.
- Affordability Assessment:** Represented by a circular icon with a dollar sign and a document.

In 2019, to advance the goals of the Human Right to Water "HR2W", California passed Senate Bill 200, which enabled the State Water Board to establish the Safe and Affordable Funding for Equity and Resilience (SAFER) Program. Foremost among the tools created for SAFER is the Safe and Affordable Drinking Water Fund. The Fund provides up to \$130 million per year through 2030 to enable the State Water Board to develop and implement sustainable solutions for underperforming drinking water systems. The annual Fund Expenditure Plan prioritizes projects for funding, documents past and planned expenditures, and is "based on data and analysis drawn from the drinking water Needs Assessment."

For more information on SAFER, visit the [Safe and Affordable Fund for Equity and Resilience \(SAFER\) website](#).

2021 Drinking Water Needs Assessment

2021 Drinking Water Needs Assessment Results

- Final Report
 - Executive Summary
 - Request Water System Data Change
- 04.09.2021 Press Release
- 04.13.2021 Presentation (coming soon) [Register Here](#)
- 04.13.2021 Webinar Recording (coming soon) [Register Here](#)

SAFER: Needs Assessment Results, Thursday, 25th March 2021, 9:00 a.m. – 12:00 p.m. PDF
 The Webinar has been rescheduled on Tuesday, April 13, 2021, 9:00 a.m. – 12:00 p.m. [PDT Register Here](#)

- Revised Notice | Aviso Revisado

Quick Links

- Capacity Development
- SAFER Program
- SAFER Funding
- Human Right to Water Information
- Human Right to Water Map
- UNC Small System Rates Dashboard
- Public Drinking Water General Information

Contact

Kristyn Abhold
 Kristyn.Abhold@waterboards.ca.gov

Translation

If you need assistance with this webpage in Spanish, please contact Mandy Roman at (916) 341-5265 or at LanguageServices@waterboards.ca.gov.

Si necesita asistencia en español con esta página web, puede contactar a Mandy Roman al (916) 341-5265 o en LanguageServices@waterboards.ca.gov.

Access report here:
<https://bit.ly/3mAz2yK>

Learn more about the Needs Assessment here:
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/needs

2021 Needs Assessment Outcomes

FY2020-21 **\$650 million** in extra drinking water infrastructure funding

Expanded consolidation authority for At-Risk water systems

2021 SAFER Program Accomplishments & Activities

In 2021 the State Water Board's SAFER Program has supported:

Activity	# of Communities & Households	Individuals Benefiting
Short-Term Solutions <i>Repairs, bottled and hauled water</i>	426	27,731
Long-Term Solutions <i>Construction, consolidation, water is now safe</i>	81	189,396
Planning <i>Help with funding applications and feasibility studies</i>	171	135,887
Total:		353,014

SAFER Drinking Water Strategy for State Small Water Systems and Domestic Wells

Key Components:

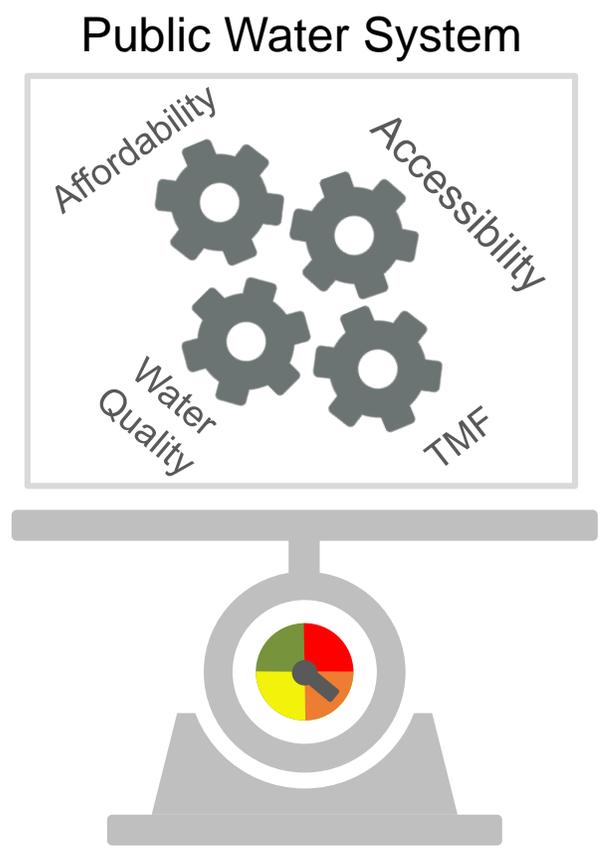
1. Centralized domestic well and state small water system data
2. Funding for counties to develop programs to address local needs
3. Implementing a regionalization pilot
4. Implementing a Point-of-Use/Point-of-Entry pilot

More information will be available soon at www.waterboards.ca.gov/safer

Proposed Changes: Risk Assessment for Public Water Systems



Risk Assessment for Public Water Systems



RISK ASSESSMENT METHODOLOGY



RISK INDICATORS

Quantifiable measurements of key data used to assess a water system's risk of becoming non-compliant with water quality standards.



RISK INDICATOR THRESHOLDS

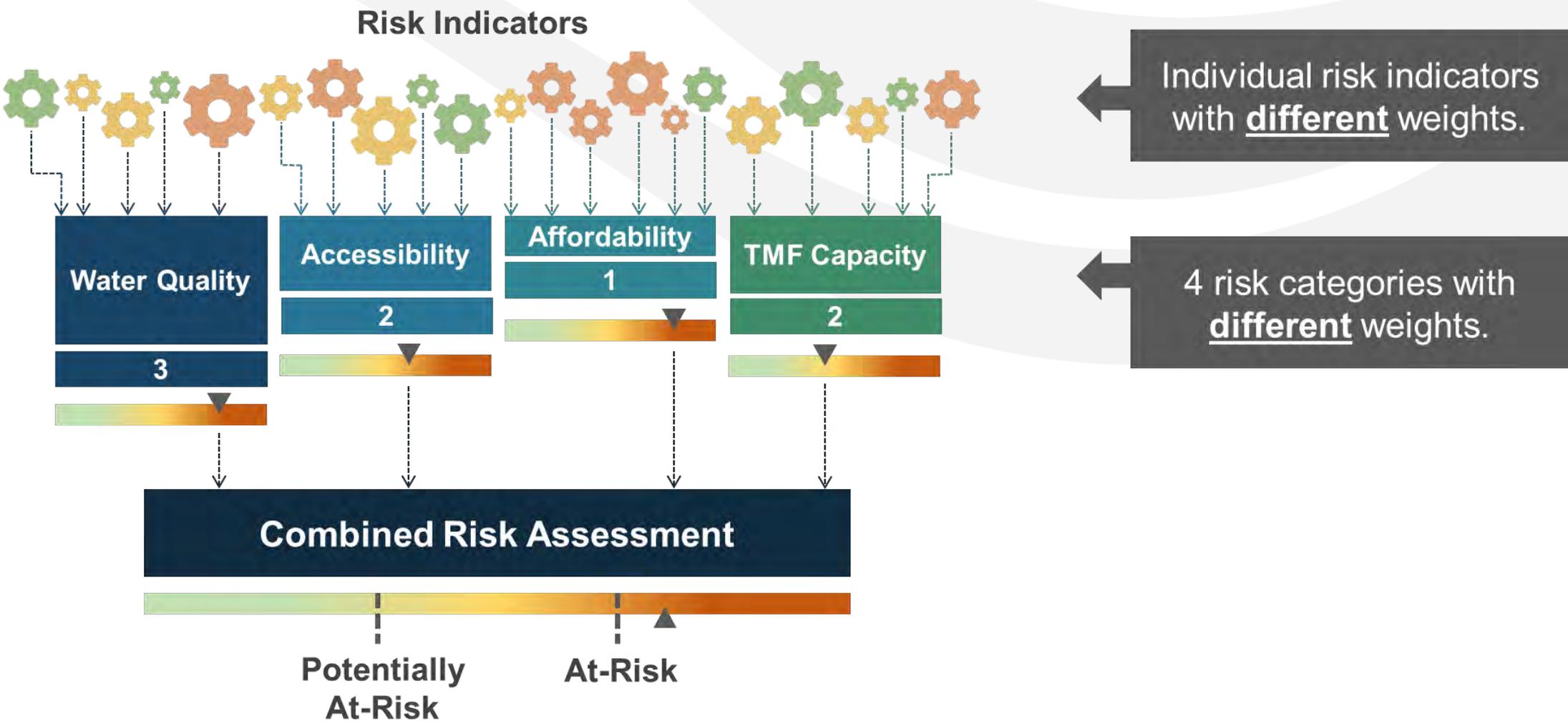
Values associated with a risk indicator that designates when a water system is more at-risk of becoming non-compliant with water quality standards.



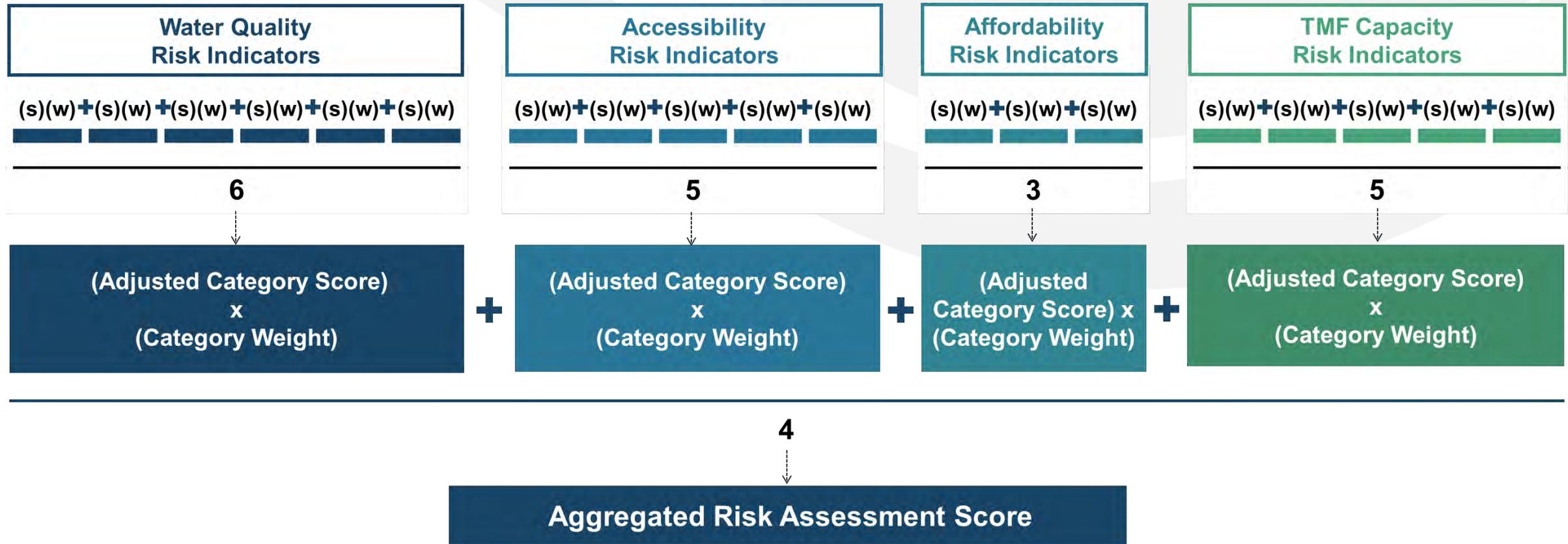
WEIGHTS / SCORES

Application of weight to each risk indicator and indicator category – some are more critical than others in contributing to overall risk.

Aggregated Risk Assessment with Indicator & Category Weights



Aggregated Risk Assessment Calculation Methodology Example



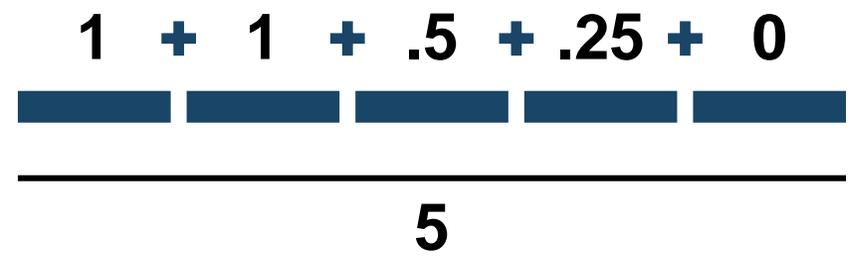
Adjusting for Missing Risk Indicator Data

A system may have failed to report necessary data or the system may not have data to report.

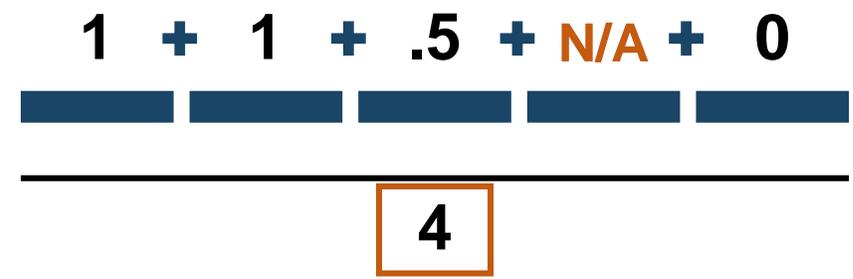
The Risk Assessment removed any value for a missing risk indicator and re-distributed the scores/weights to risk indicators within the same category which did have valid values.

The same approach was used for risk indicator categories as well.

**Risk Indicator Category
With No Missing Indicator**



**Risk Indicator Category
With Missing Indicator**



The Expanded Inventory: Public Water Systems

2021 Risk Assessment was applied to CWSs with 3,300 connects or less and k-12 public schools. Wholesalers were excluded.

2022 Risk Assessment will be applied to *all* CWSs and K-12 schools. Wholesalers will be excluded, and military bases will be excluded from the financial risk indicators. **Allows for better performance tracking across all CWSs (Failing, At-Risk, Not At-Risk).**

Currently:

- 15 (4%) Failing: HR2W list systems with 3,300 connections or more.
- Population served by 15 systems is 606,000, 67% of total population served by all Failing systems.

2021 Risk Assessment Criteria: Results for Large Systems

- Conducted baseline analysis utilizes 2021 risk indicators.
- Of the 13 large systems on the Failing: HR2W list: 2021 Risk Assessment predictive power is 85%.

2021 Assessment Results	All Large Systems	<u>Not</u> Failing: HR2W List Systems	Failing: HR2W List Systems
At-Risk	34 (9%)	26	8
Potentially At-Risk	38 (10%)	35	3
Not At-Risk	319 (82%)	317	2
TOTAL:	391	378	13

Important Note: Large Water Systems

The State Water Board is refining how to assess large public water systems with 3,300 service connections or more.

The State Water Board is considering a number of adjustments to how certain risk indicators are calculated to accommodate for system size and complexity, especially in the Water Quality risk category. Therefore, preliminary results for systems with 10,000 connections or more have been removed from the spreadsheet.

Large systems are encouraged to review the underlying raw data in the public spreadsheet for accuracy.

2021 Risk Indicators

The State Water Board utilized 19 risk indicators for the 2021 Risk Assessment.

WATER QUALITY

E. Coli Presence

Increasing Presence of
Water Quality Trends
Towards MCL

Treatment Technique
Violations

Past Presence on the
HR2W List

Maximum Duration of High
Potential Exposure (HPE)

Percentage of Sources
Exceeding an MCL

ACCESSIBILITY

Number of Sources

Absence of Interties

Water Source Types

DWR – Drought & Water
Shortage Risk
Assessment Results

Critically Overdrafted
Groundwater Basin

AFFORDABILITY

% Median Household
Income

Extreme Water Bill

% Shut-Offs

TMF CAPACITY

of Service Connections

Operator Certification
Violations

Monitoring and Reporting
Violations

Significant Deficiencies

Extensive Treatment
Installed

Proposed 2022 Risk Indicator Changes

The State Water Board proposed removing **5** risk indicators and adding **8** new indicators.

WATER QUALITY

- E. Coli Presence

- Increasing Presence of Water Quality Trends Towards MCL

- Treatment Technique Violations

- Past Presence on the HR2W List

- ~~Maximum Duration of High Potential Exposure (HPE)~~

- Percentage of Sources Exceeding an MCL

- Constituents of Emerging Concern

ACCESSIBILITY

- Number of Sources

- Absence of Interties

- ~~Water Source Types~~

- DWR – Drought & Water Shortage Risk Assessment Results

- Critically Overdrafted Groundwater Basin

- Bottled or Hauled Water Reliance

- Source Capacity Violations

AFFORDABILITY

- % Median Household Income

- Extreme Water Bill

- ~~% Shut-Offs~~

- % of Residential Arrearages

- Residential Arrearage Burden

TMF CAPACITY

- ~~# of Service Connections~~

- Operator Certification Violations

- Monitoring and Reporting Violations

- Significant Deficiencies

- ~~Extensive Treatment Installed~~

- Income

- Operating Ratio

- Days Cash on Hand

Proposed Risk Indicator Changes: Water Quality

WATER QUALITY

No Change:	<ul style="list-style-type: none">• E. Coli Presence• Increasing Presence of Water Quality Trends Towards MCL• Treatment Technique Violations• Past Presence on the HR2W List• Percentage of Sources Exceeding an MCL
Removing:	<p>Maximum Duration of High Potential Exposure (HPE)</p> <ul style="list-style-type: none">• The complicated nature of how this risk indicator is calculated and determined was difficult for stakeholders and water systems to understand.
Adding:	<p>Constituents of Emerging Concern</p> <ul style="list-style-type: none">• Important to identify water systems that could potentially come out of compliance if certain constituents of emerging concern were to be regulated by a primary and/or secondary MCL.

Proposed Risk Indicator: Constituents of Emerging Concern (CEC) (1/5)

Definition: Identify water systems that could potentially come out of compliance if certain constituents of emerging concern (CECs) were to be regulated by a primary and/or secondary maximum contaminant level (MCL).

This proposed risk indicator would only assess water systems that have water quality sample results associated with **hexavalent chromium (CrVI)**, **1,4-dioxane**, and/or the 18 chemicals associated with **per- and polyfluoroalkyl substances (PFAS)**. More chemicals may be included in future iterations of the Risk Assessment.

Data Sources: SDWIS, 5-year

Proposed Risk Indicator: Constituents of Emerging Concern (CEC) (2/5)

Proposed Thresholds, Scores, and Weights (CrVI):

Threshold Number	Threshold	Score	Weight	Max Score
0	CrVI: All calculated RAA(s), over 5-year period, are below 80% of the former MCL (RAA < 8 µg/L)	0	N/A	0
1	CrVI: 1 or more calculated RAA(s), over 5-year period, are at or above 80% of the former MCL and below the former MCL (8 µg/L ≤ RAA < 10 µg/L)	0.5	3	1.5
2	CrVI: 1 or more calculated RAA(s), over 5-year period, are at or above the former MCL (10 µg/L ≤ RAA).	1	3	3

Proposed Risk Indicator: Constituents of Emerging Concern (CEC) (3/5)

Proposed Thresholds, Scores, and Weights (PFAS):

Threshold Number	Threshold	Score	Weight	Max Score
0	PFAS: Less than 2 samples, over 5-year period, are positive.	0	N/A	0
1	PFAS: 2 or more samples, over 5-year period, are positive; this criterion applies to all 18 chemicals.	0.5	3	1.5
2	PFAS: 2 or more samples, over 5-year period, are at or above the notification level; this criterion only applies to 3 chemicals that have notification level.	1	3	3

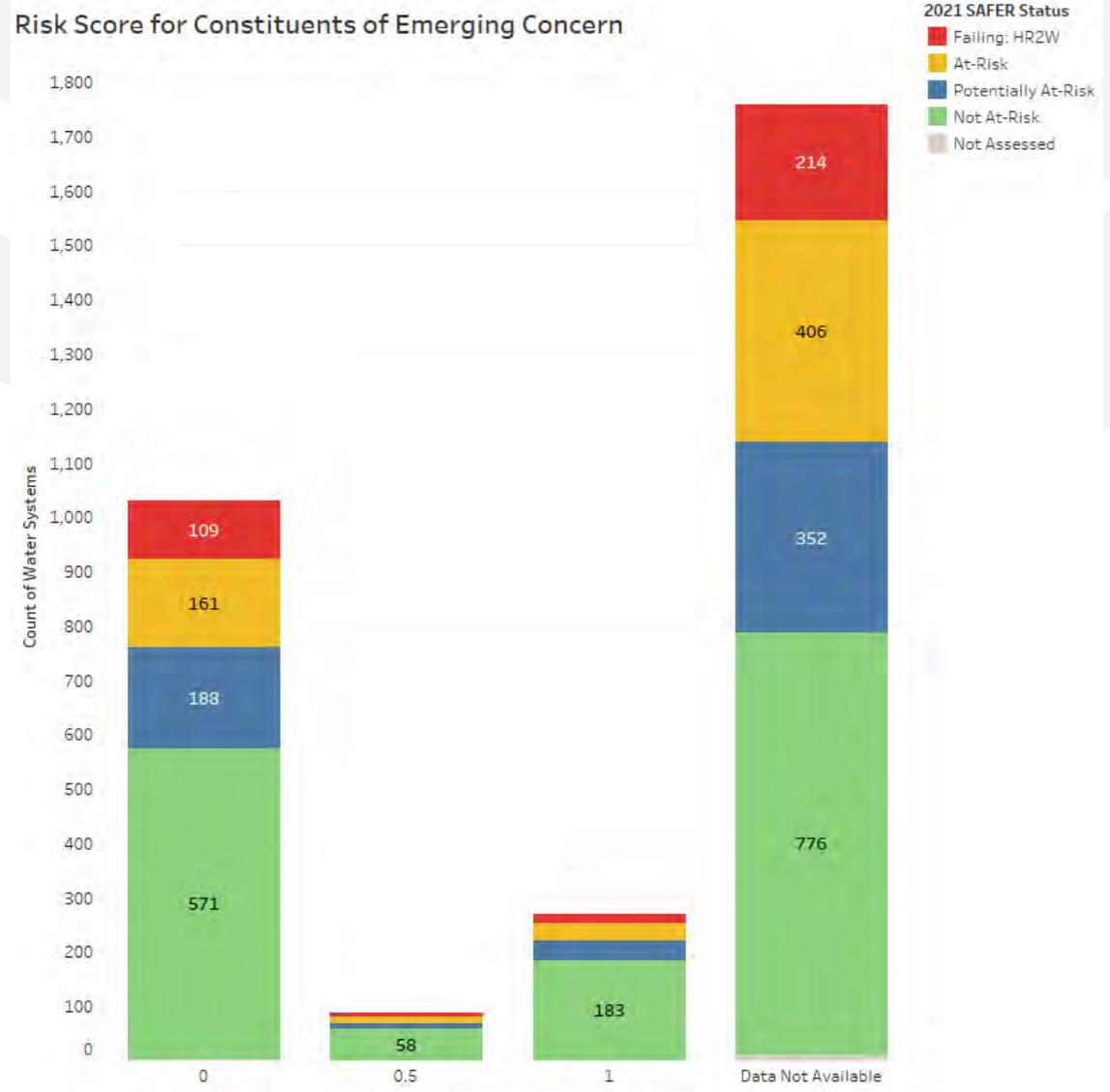
Proposed Risk Indicator: Constituents of Emerging Concern (CEC) (4/5)

Proposed Thresholds, Scores, and Weights (1,4-Dioxane):

Threshold Number	Threshold	Score	Weight	Max Score
0	1,4-Dioxane: 0 calculated RAA(s), over 5-year period, are at or above the notification level.	0	N/A	0
1	N/A	0.5	3	1.5
2	1,4-Dioxane: 1 or more calculated RAA(s), over 5-year period, are at or above the notification level.	1	3	3

Proposed Risk Indicator: Constituents of Emerging Concern (CEC) (5/5)

Explore the Data:
<https://tabsoft.co/3nXvusx>



Proposed Risk Indicator Changes: Accessibility

ACCESSIBILITY

No Change:	<ul style="list-style-type: none"> • Number of Sources • Absence of Interties • DWR – Drought & Water Shortage Risk Assessment Results • Critically Overdrafted Groundwater Basin
Removing:	<p>Water Source Types</p> <ul style="list-style-type: none"> • This indicator is strongly correlated with another risk indicator: Number of Water Sources.
Adding:	<p>Stakeholders and State Water Board staff on the 2021 Risk Assessment called for the inclusion of additional risk indicators that better assess water system source capacity and their ability to meet customer demand.</p> <ul style="list-style-type: none"> • Source Capacity Violations • Bottled or Hauled Water Reliance

Proposed Risk Indicator: Source Capacity Violations (1/3)

Definition: water systems that have violated source capacity standards as required in California Waterworks Standards within the last three years:

- Failure to maintain adequate source capacity (may include curtailment order and/or service connection moratorium).
- Failure to maintain adequate pressure leading to a water outage.
- Failure to complete a source capacity planning study.

The State Water Board developed new source capacity violation codes in 2021. This risk indicator includes systems that have had connection moratoriums within the last three years as well because these systems failed to meet these standards prior to this new tracking system.

Data Sources: SDWIS, 3-years

Proposed Risk Indicator: Source Capacity Violations (2/3)

Proposed Thresholds, Scores, and Weights:

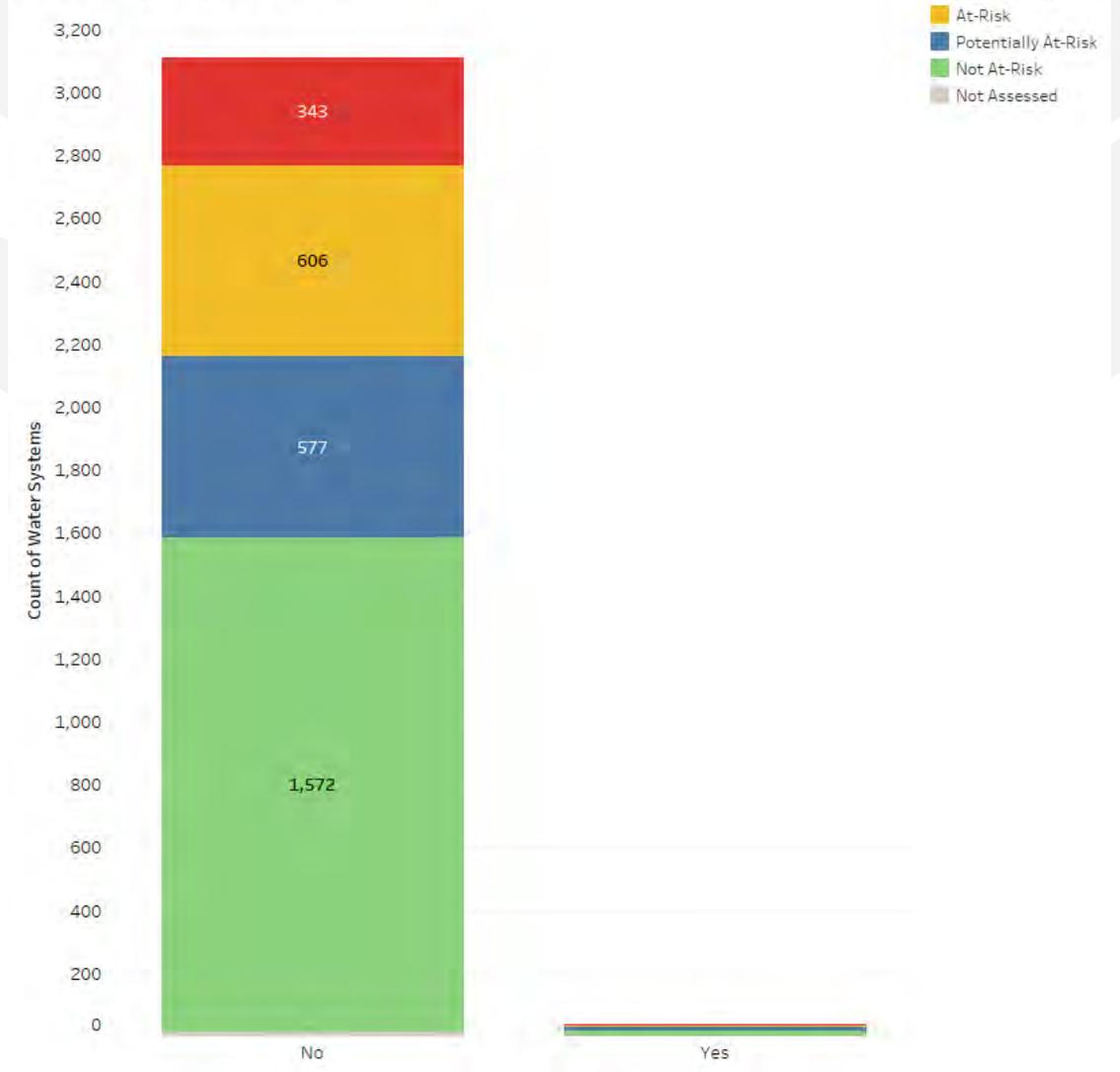
Threshold Number	Threshold	Score	Weight	Max Score
0	<p>0 source capacity violations within the past 3 years; and</p> <p>0 service connection moratoriums within the past 3 years.</p>	0	N/A	0
1	<p>1 or more source capacity violations within the past 3 years; or</p> <p>1 or more service connection moratoriums within the past 3 years.</p>	1	3	3

Proposed Risk Indicator: Source Capacity Violations (3/3)

Explore the Data:

<https://tabsoft.co/3tQDQWC>

Source Capacity Violations



- 2021 SAFER Status
- Failing: HR2W
- At-Risk
- Potentially At-Risk
- Not At-Risk
- Not Assessed

Proposed Risk Indicator: Bottled/Hauled Water Reliance (1/3)

Definition: water systems that have had to supplement or replace their source supply to meet customer demand with bottled water, and/or hauled water at any point within the past three years. A water system that is unable to meet the demand with their available sources due to water quality issues or source capacity challenges is at-risk of failing to provide water to the customers.

Data Sources: SDWIS, 3-years; Division of Financial Assistance (funding agreements), 3-years; Division of Drinking Water Drought Report, 3-years; Department of Water Resources (funding agreements), 3-years

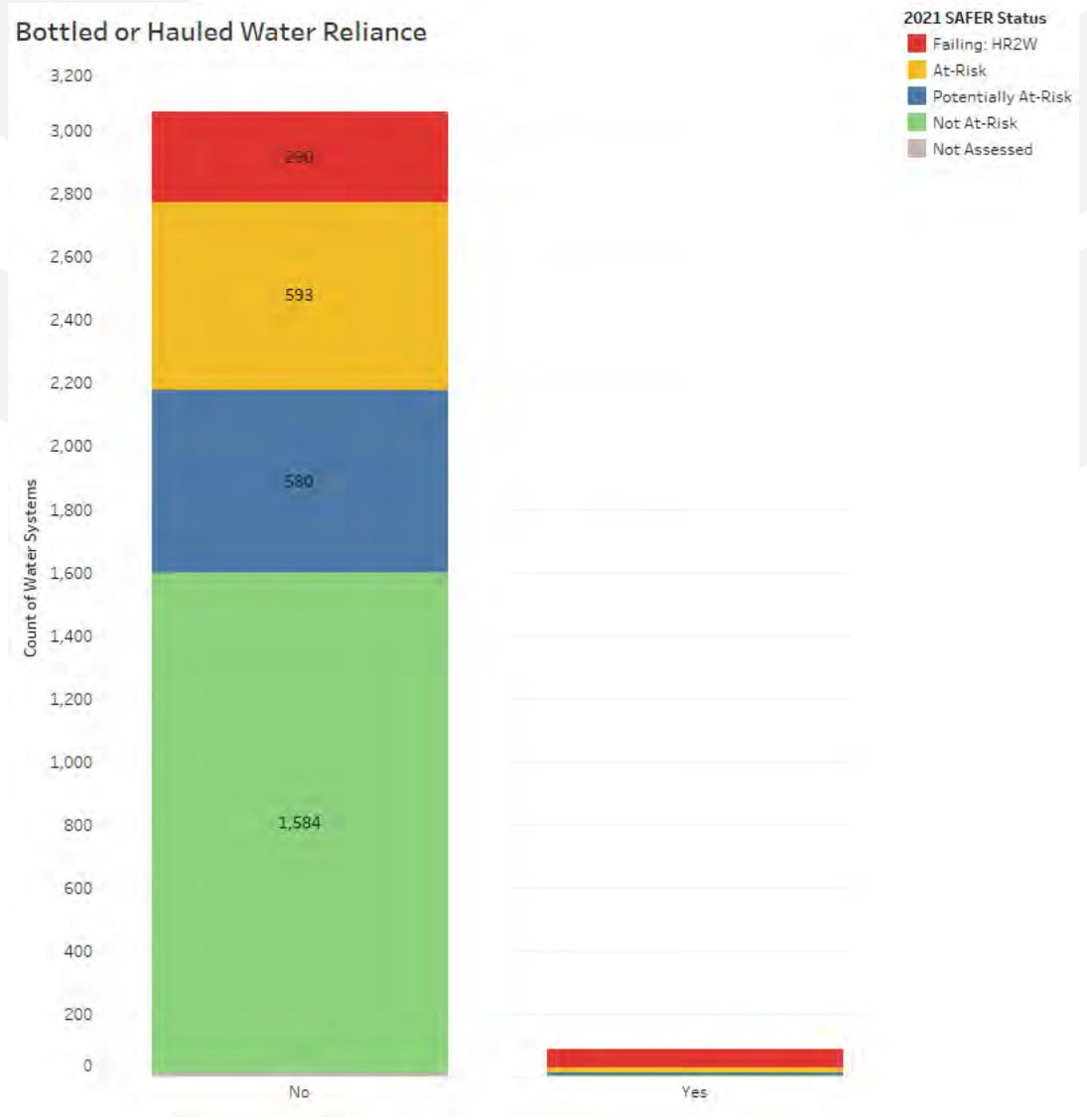
Proposed Risk Indicator: Bottled/Hauled Water Reliance (2/3)

Proposed Thresholds, Scores, and Weights:

Threshold Number	Threshold	Score	Weight	Max Score
0	0 occurrences of bottled water or hauled water reliance within the last three years.	0	N/A	0
1	1 or more occurrences of bottled water or hauled water reliance within the last three years.	Automatically At-Risk	N/A	N/A

Proposed Risk Indicator: Bottled/Hauled Water Reliance (3/3)

Explore the Data:
<https://tabsoft.co/3HkKAjd>



Proposed Risk Indicator Changes: Affordability

AFFORDABILITY

No Change:	<ul style="list-style-type: none">• % Median Household Income• Extreme Water Bill
Removing:	<p>% Shut-Offs</p> <ul style="list-style-type: none">• An Executive Order prohibited water shut-offs beginning March 4, 2020 through December 31, 2021. This data was unavailable to use in the Risk Assessment.
Adding:	<p>These new risk indicators are meant to identify water systems that have a community that is experiencing household affordability challenges. The initial data used for the two proposed risk indicators comes from the State Water Board's 2021 Drinking Water Arrearage Payment Program.</p> <ul style="list-style-type: none">• % of Residential Arrearages• Residential Arrearage Burden

Proposed Risk Indicator: % Residential Arrearages (1/3)

Definition: The purpose of this proposed risk indicator is to identify water systems that have high percentage of their residential customers that have not payed their water bill.

Data Sources: Drinking Water Arrearage Payment Program Application (October – December 2021): Arrearages accrued during the COVID-19 Pandemic (March 2020 – June 2021); SDWIS: Residential Accounts

Proposed Risk Indicator: % Residential Arrearages (2/3)

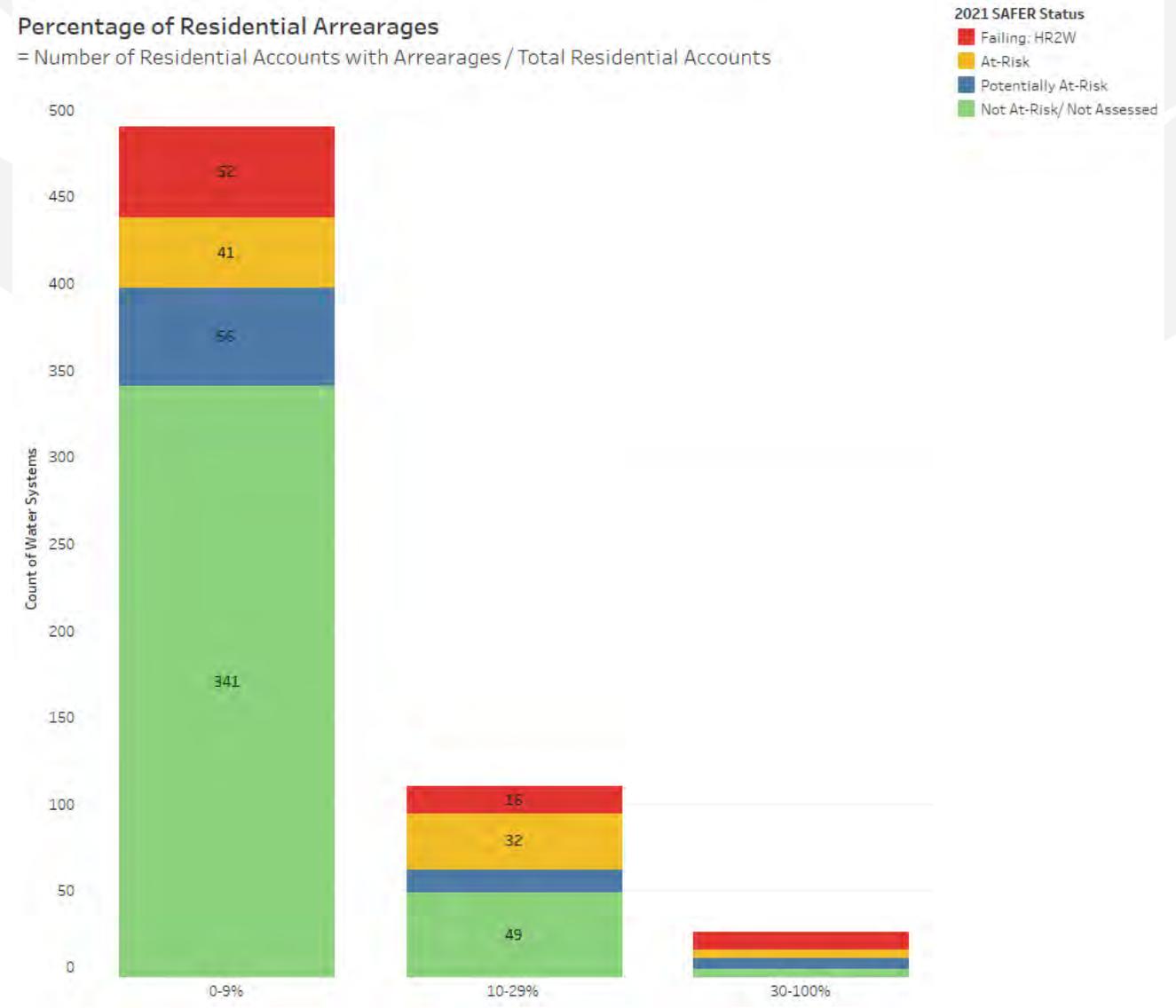
Proposed Thresholds, Scores, and Weights:

Threshold Number	Threshold	Score	Weight	Max Score
0	0% to 9% residential arrearages.	0	N/A	0
1	10% to 29% residential arrearages.	0.5	2	1
2	30% to 100% residential arrearages.	1	2	2

Proposed Risk Indicator: % of Residential Arrearages (3/3)

Explore the Data:

<https://tabsoft.co/3IPKCQH>



Proposed Risk Indicator: Residential Arrearage Burden (1/4)

Definition: Measures how much each residential customer would have to pay to cover the amount of outstanding residential arrearages.

Data Sources: Drinking Water Arrearage Payment Program Application (October – December 2021): Arrearages accrued during the COVID-19 Pandemic (March 2020 – June 2021); SDWIS: Residential Accounts

Proposed Risk Indicator: Residential Arrearage Burden (2/4)

Proposed Thresholds, Scores, and Weights:

Threshold Number	Threshold	Score	Weight	Max Score
0	Below top 40% of systems with residential arrearage burden.	0	N/A	0
1	Top 40% of systems with residential arrearage burden.	0.5	2	1
2	Top 20% of systems with residential arrearage burden.	1	2	2

Proposed Risk Indicator: Residential Arrearage Burden (3/4)

Residential Arrearage Burden Formula:

Total Residential Arrearages / Total Number of Residential Accounts

# Residential Accounts in Arrears	7 (0.8%)	1,524 (7.1%)	3,960 (11.55%)	15 (88%)
Total Residential Accounts	828	21,541	34,298	17
Total Residential Arrearages	\$3,036	\$771,510	\$1,733,493	\$20,591
Residential Arrearage Burden:	\$3.67	\$35.82	\$50.54	\$1,211.24

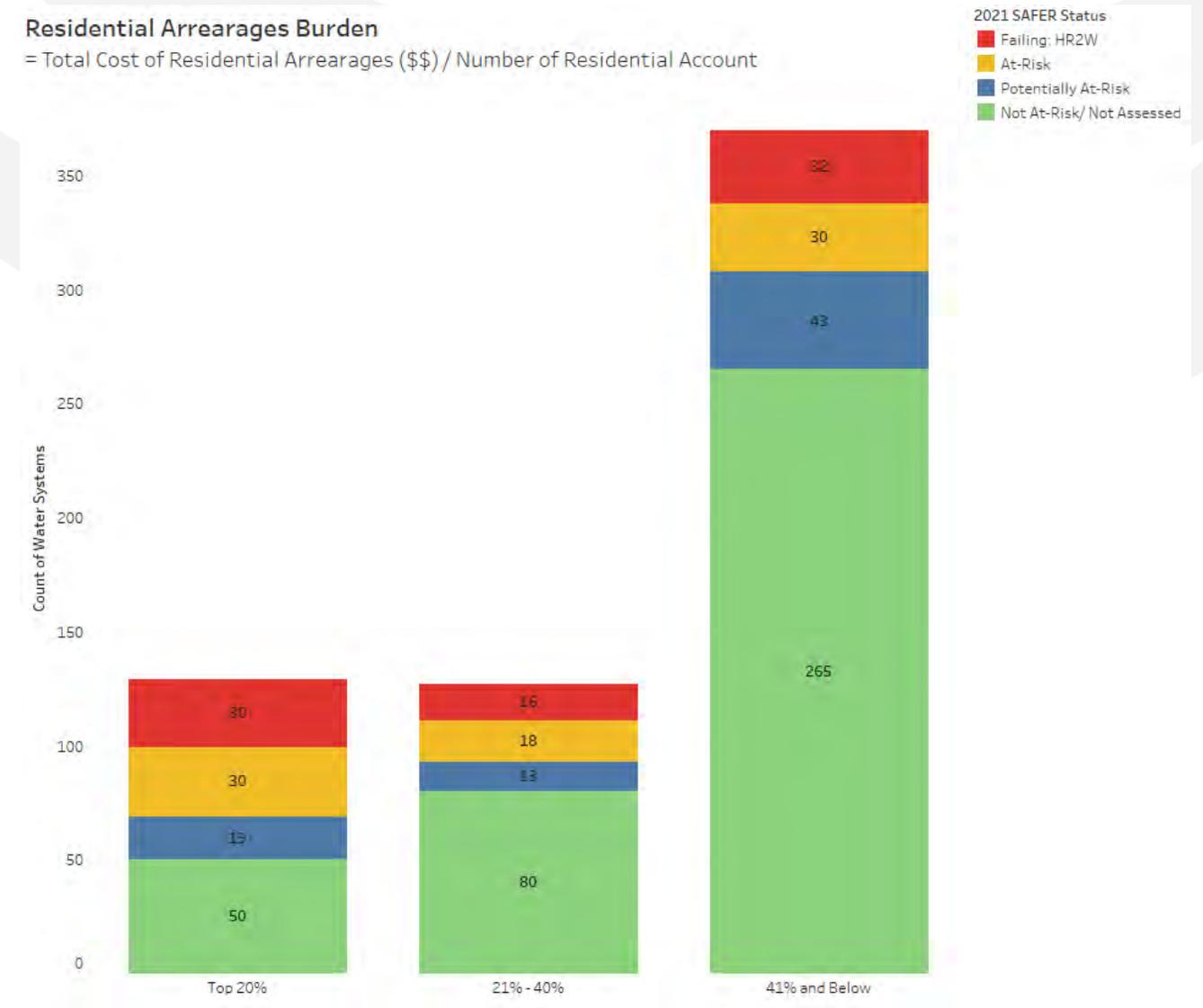
Proposed Risk Indicator: Residential Arrearage Burden (4/4)

Explore the Data:

<https://tabsoft.co/34nB0gU>

Residential Arrearages Burden

= Total Cost of Residential Arrearages (\$\$) / Number of Residential Account



Proposed Risk Indicator Changes: TMF Capacity (1/2)

TMF CAPACITY

No Change:

- Operator Certification Violations
- Monitoring and Reporting Violations
- Significant Deficiencies

Removing:

of Service Connections

- This indicator was utilized on the 2021 Risk Assessment as a proxy measure of a water system’s financial capacity to support staff and budget. The State Water Board required new financial reporting in the 2020 EAR to collect data to better analyze the financial capacity of water systems.

Extensive Treatment Installed

- With the proposed expansion of the water systems included in the Risk Assessment, the inclusion of large water systems would result in many of these systems receiving risk points due to the calculation methodology of this risk indicator.

Proposed Risk Indicator Changes: TMF Capacity (2/2)

TMF CAPACITY

Adding:

These new risk indicators are meant to assess risk related to the financial capacity of water systems. Financial capacity refers to a water system's ability to balance its budget on an annual basis, maintain cash reserves for emergencies, and maintain sufficient cash to pay its bills on a timely basis.

- **Income**
- **Operating Ratio**
- **Days Cash on Hand**

Proposed Risk Indicator: Operating Ratio (1/3)

Definition: a ratio of annual revenues compared to annual operating expenses. To be a self-supporting, a water system should strive to have at least as much annual revenue as it has operating expenses. In general, a water system should collect revenues greater than expenses in order to accommodate for future infrastructure investments.

$$\frac{\text{Annual Revenue (\$)}}{\text{Annual Operating Expenses (\$)}}$$

Data Sources: 2020 Electronic Annual Report (EAR)

Proposed Risk Indicator: Operating Ratio (2/3)

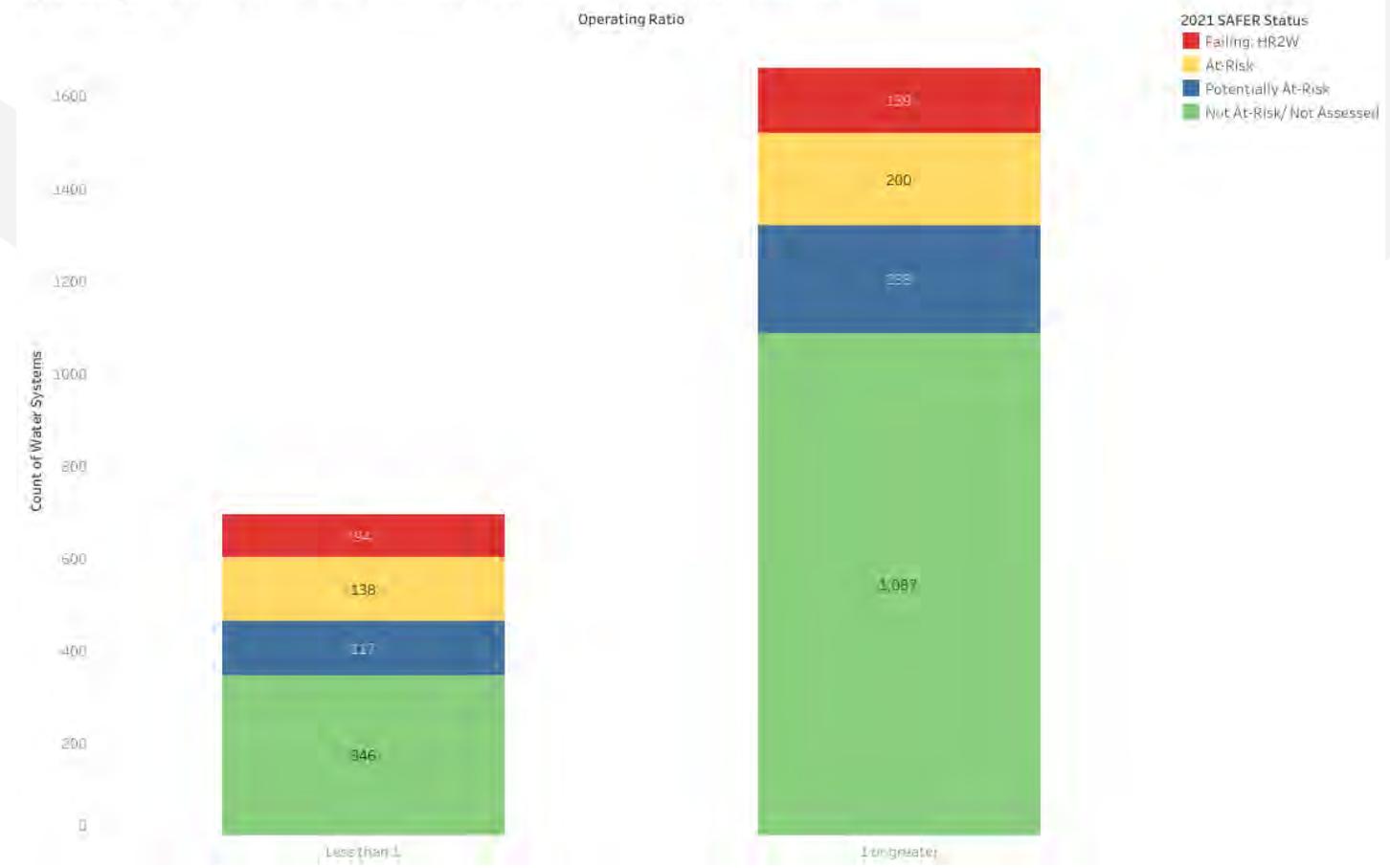
Proposed Thresholds, Scores, and Weights:

Threshold Number	Threshold	Score	Weight	Max Score
0	1 or greater	0	N/A	0
1	Less than 1	1	1	1

Proposed Risk Indicator: Operating Ratio (3/3)

Explore the Data: <https://tabsoft.co/3GhCoiv>

Operating Ratio = Total Annual Revenue/Total annual Operating Expenses



Proposed Risk Indicator: Total Annual Income (1/3)

Definition: A water system should generate enough revenue to cover all incurred expenses (including operational expenses) throughout the year. Total Net Annual Income of a water system should be a positive (+) value. If expenditures are outpacing revenue too quickly, then the water system may have to cut costs or decrease level of services. Reserves or available cash savings allows for a financial cushion in times when expenses are greater than revenues.

Data Sources: 2020 Electronic Annual Report (EAR)

Proposed Risk Indicator: Total Annual Income (2/3)

Proposed Thresholds, Scores, and Weights:

Threshold Number	Threshold	Score	Weight	Max Score
0	Greater than \$0 total annual income	0	N/A	0
1	\$0 total annual income	0.5	1	0.5
2	Less than \$0 total annual income	1	1	1

Proposed Risk Indicator: Total Annual Income (3/3)

Explore the Data:
<https://tabsoft.co/33AYv6g>

Total Annual Income = Total Annual Revenue - Total annual Expenses



Proposed Risk Indicator: Days Cash on Hand (1/4)

Definition: approximate the number of days a water system can cover its daily operations and maintenance costs, relaying only on their current cash or liquid reserves, before running out of cash. It is a helpful measure of how long a system can operate if it has a sudden and dramatic reduction in operating income, perhaps from a large customer leaving or an environmental emergency (fire, drought restrictions etc.).

$$\frac{\text{Unrestricted Cash (\$)}}{\text{Daily Operating Expenses (\$)}}$$

Data Sources: 2020 Electronic Annual Report (EAR)

Proposed Risk Indicator: Days Cash on Hand (2/4)

Ratio allows for the comparison of water systems of different sizes by accounting for differences in operational expenses

Large Water System	Small Water System
$\frac{\text{Unrestricted Cash: } \$5,000,000}{\text{Average Daily Operation Expenses: } \$100,000}$	$\frac{\text{Unrestricted Cash: } \$20,000}{\text{Average Daily Operation Expenses: } \$400}$
Days Cash on Hand = 50 Days	Days Cash on Hand = 50 Days

Proposed Risk Indicator: Days Cash on Hand (3/4)

Proposed Thresholds, Scores, and Weights:

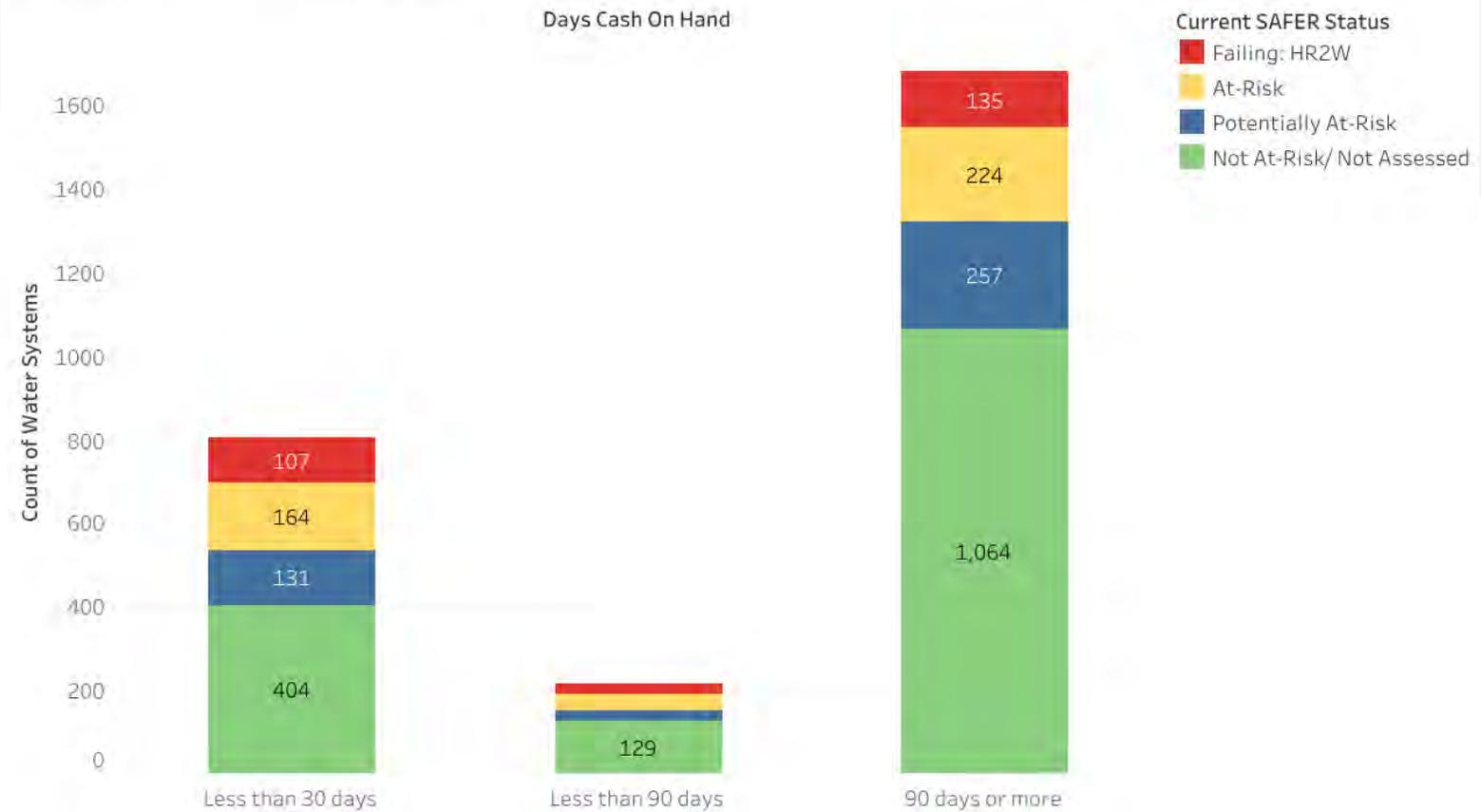
Threshold Number	Threshold	Score	Weight	Max Score
0	90 days or more cash on hand.	0	N/A	0
1	Less than 90 days cash on hand.	0.5	1	0.5
2	Less than 30 days cash on hand.	1	1	1

Proposed Risk Indicator: Days Cash on Hand (3/3)

Explore the Data:

<https://tabsoft.co/35bB9VI>

Number of Days Cash on Hand



Preliminary Results of the 2022 Risk Assessment for Public Water Systems

Risk Assessment Result	Small Systems ($\leq 3,300$ sc)	Large Systems ($> 3,300$ sc)	Total	Change
2021 At-Risk	857	34	891	
2022 At-Risk	779	45	824	↓ 8%
2021 Potentially At-Risk	594	38	632	
2022 Potentially At-Risk	433	46	479	↓ 24%
2021 Not At-Risk	1,317	319	1,636	
2022 Not At-Risk	1,545	300	1,845	↑ 13%

Explore the preliminary results and data for the 2022 Risk Assessment for public water systems:

<https://bit.ly/3G5wHEo>

The Predictive Power of the Risk Assessment

Risk Assessment Result	Total Systems	Systems on the 2021 Failing: HR2W List*	Predictive Power
2021			
At-Risk	889	306	78.87%
Potentially At-Risk	627	42	10.82%
Not At-Risk	1,632	40	
TOTAL:	3,148	388	89.69%
2022			
At-Risk	824	302	77.84% (↓ 1.03%)
Potentially At-Risk	479	53	13.66% (↑ 2.84%)
Not At-Risk	1,845	33	
TOTAL:	3,148	388	92.49% (↑ 1.80%)

* Unique Failing: HR2W list systems from January 1, 2021 through January 1, 2022.

Discussion Topic 1: Risk Assessment for Public Water Systems

Do you have any questions or comments about the proposed changes to the Risk Assessment for public water systems?

Ways to Participate

- 1. Watch ONLY:** Visit video.calepa.ca.gov
- 2. Email:** Submit a comment or ask a question that will be read aloud, send an email to: safer@waterboards.ca.gov
- 3. Q&A:** Submit a question using the Q&A feature at the bottom of your Zoom Screen. You can UPVOTE any question you would like answered.
- 4. Raise Hand:** Attendees will be given the opportunity to provide verbal comment or ask questions, if you're interested in this option, please raise your virtual hand when the time is right.

- Please wait for your name to be called.
- Public comments are 3 minutes each.

Proposed Changes: Risk Assessment for State Small Water Systems & Domestic Wells

Emily Houlihan
Division of Water Quality
GAMA Unit



2021: Risk Assessment for State Small Water Systems & Domestic Wells

The 2021 Risk Assessment was based on the State Water Board's **Aquifer Risk Map**:

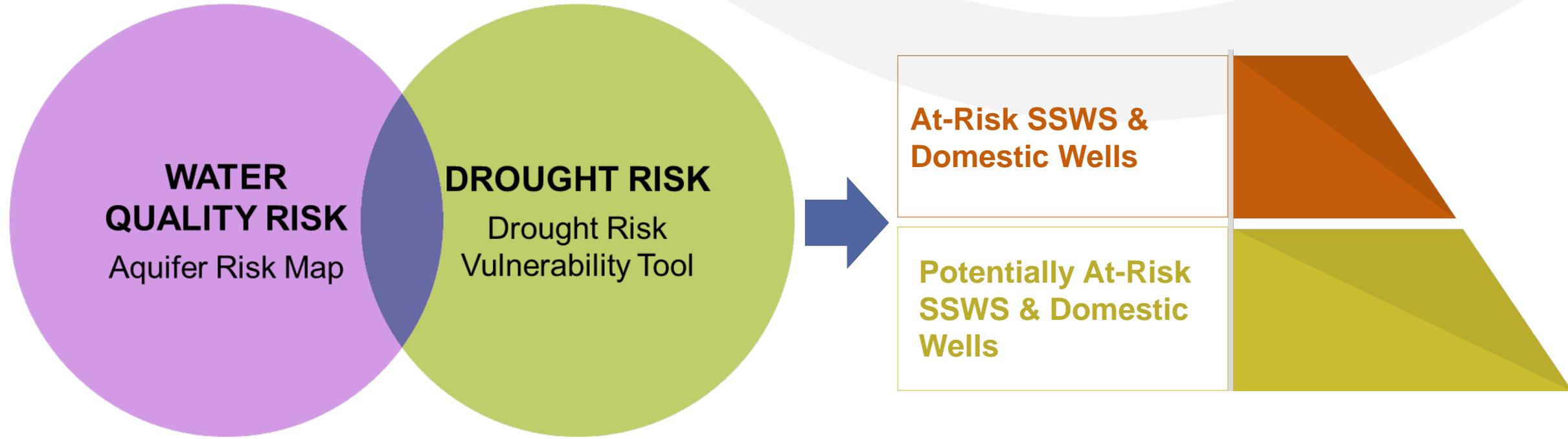
- Identifies areas where groundwater is at high risk of containing contaminants that exceed safe drinking water standards; and
- where groundwater is used or likely to be used as a drinking water source.



Proposed 2022: Risk Assessment for State Small Water Systems & Domestic Wells

The 2022 Risk Assessment was based on a **combined assessment** utilizing:

- State Water Board’s **Aquifer Risk Map**; and
- Department of Water Resources: **Drought Risk Vulnerability Tool**



Proposed 2022 Methodology: Risk Assessment for State Small Water Systems & Domestic Wells (1/4)

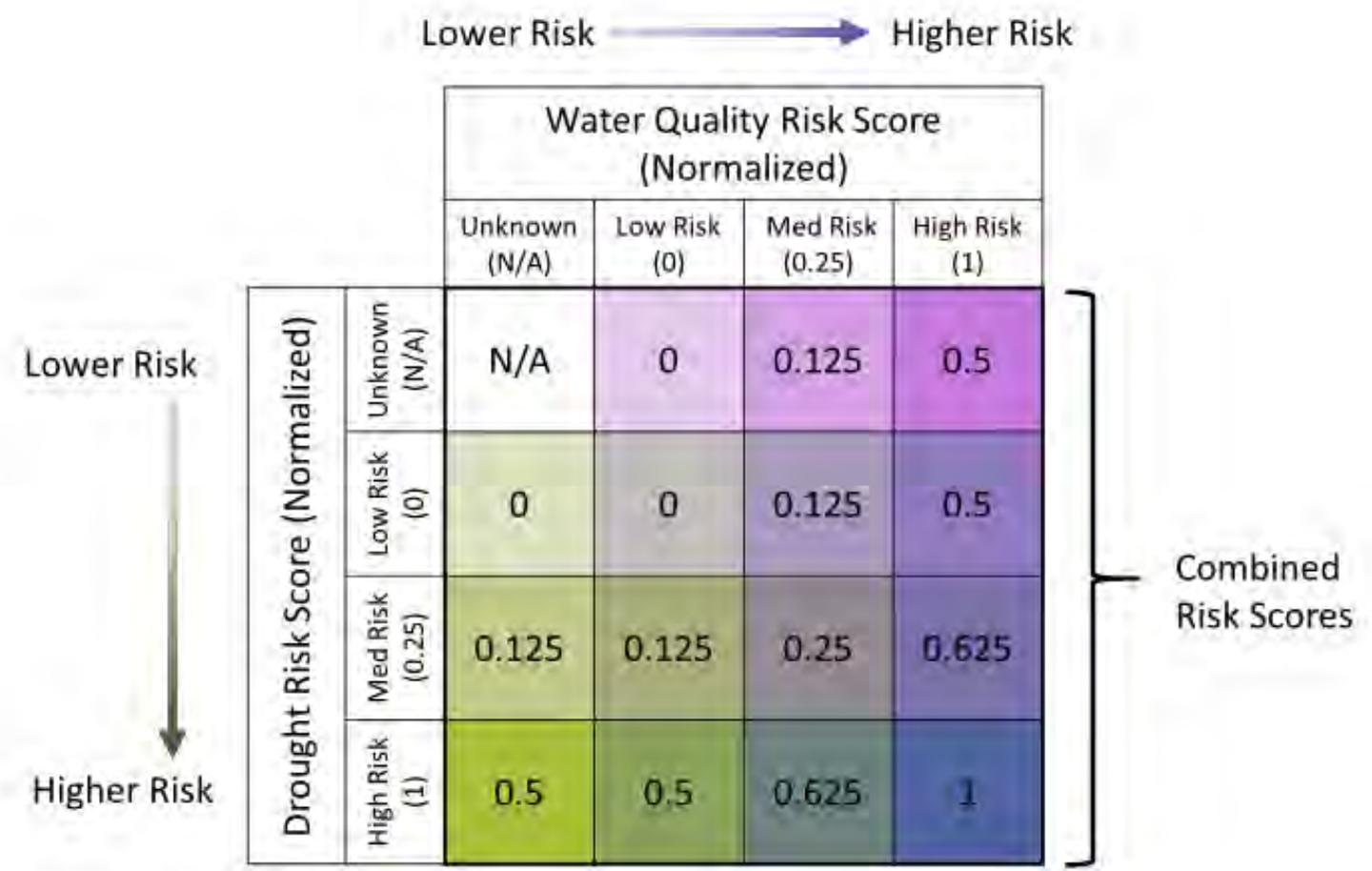
The two variables of drought risk and water quality risk were combined following a similar methodology as the combined Risk Assessment for public water systems.

The normalized scores for water quality and drought risk for each PLSS section were added together and divided by the number of variables (two).

$$\text{Combined Risk Score} = \frac{\text{Normalized Water Quality Risk Score} + \text{Normalized Drought Risk Score}}{2}$$

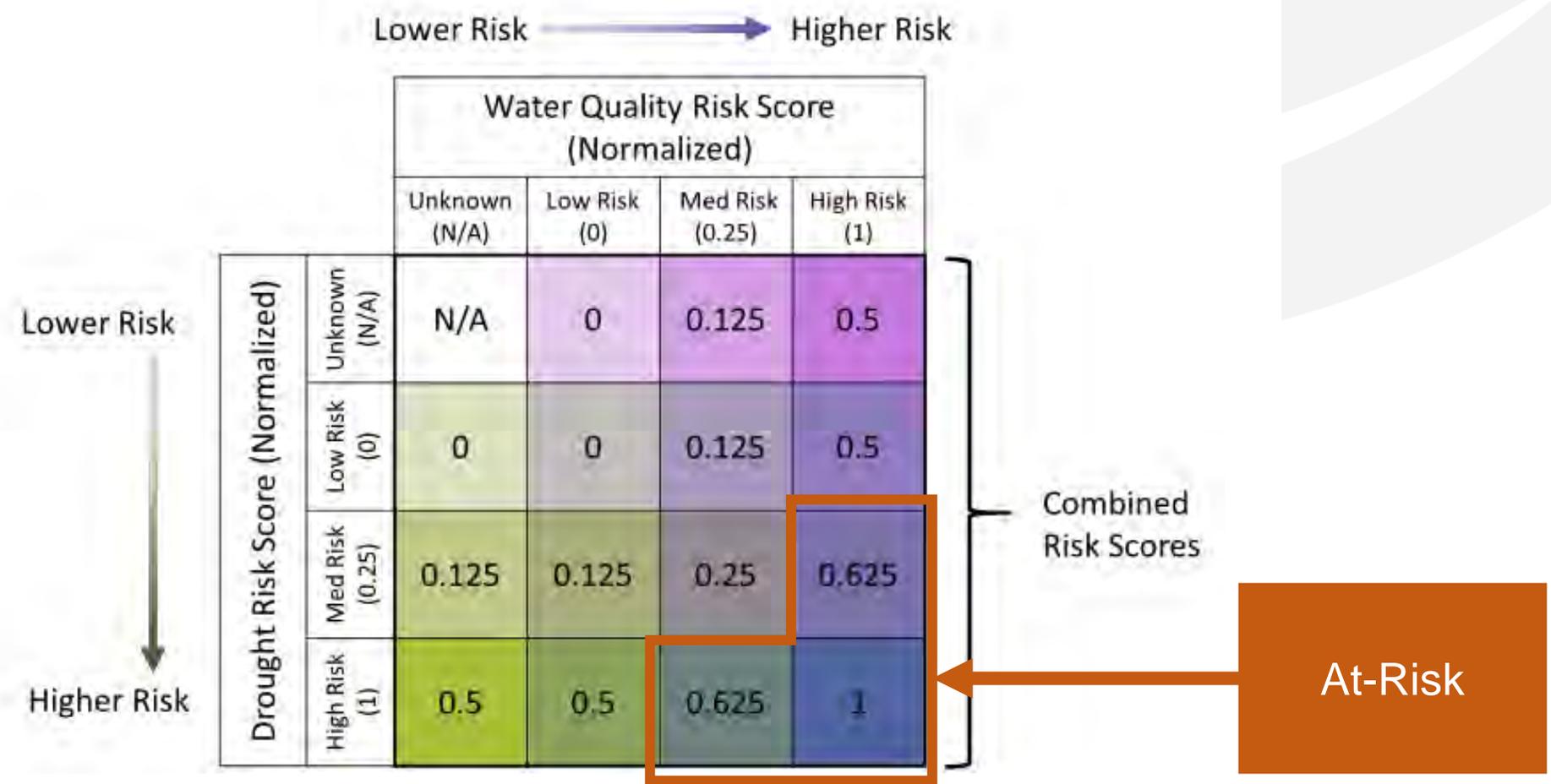
Proposed 2022 Methodology: Risk Assessment for State Small Water Systems & Domestic Wells (2/4)

Example of Combined Risk Scores for each PLSS section



Proposed 2022 Methodology: Risk Assessment for State Small Water Systems & Domestic Wells (3/4)

Example of Combined Risk Scores for each PLSS section

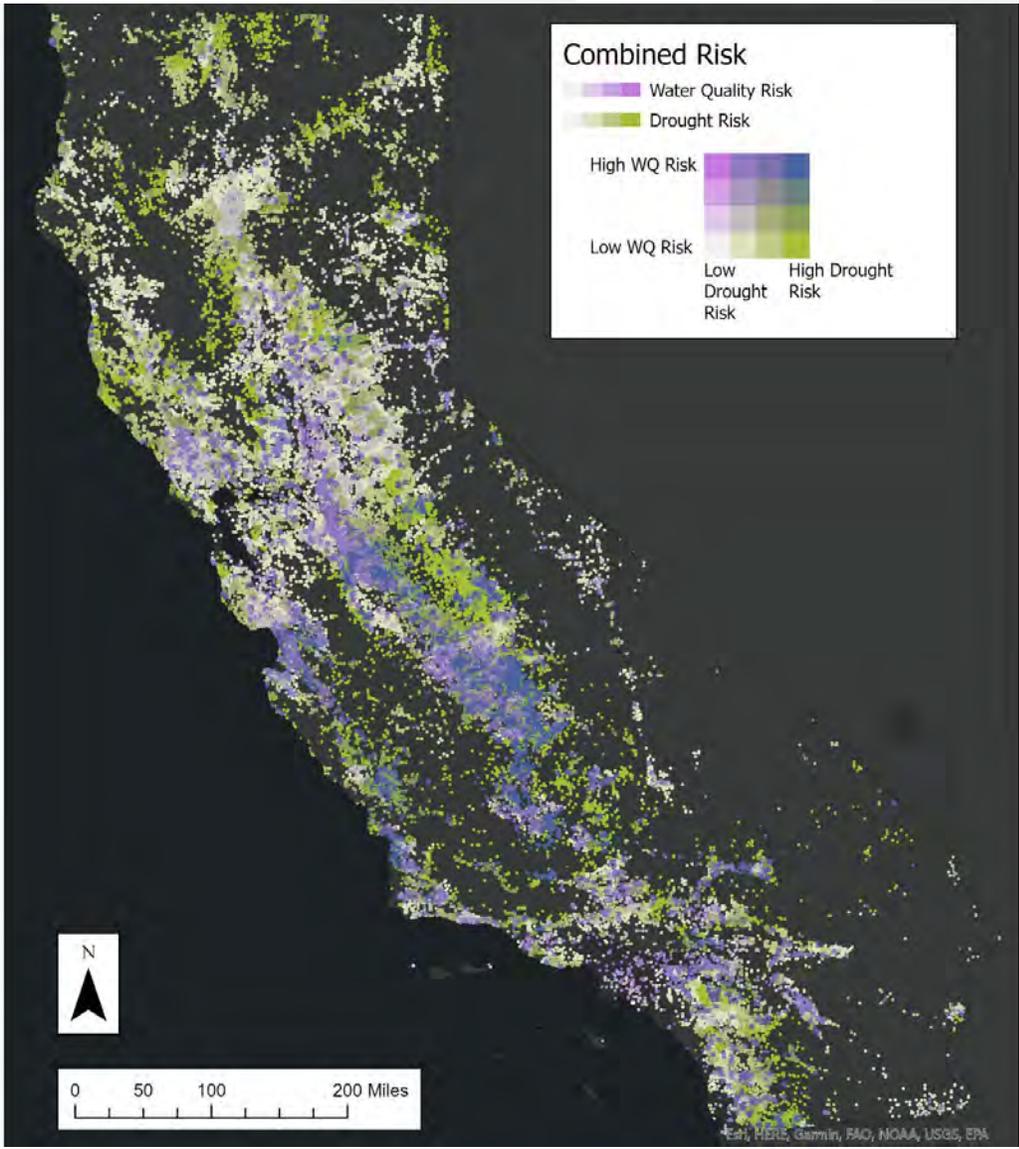


Proposed 2022 Methodology: Risk Assessment for State Small Water Systems & Domestic Wells (4/4)

Example of Combined Risk Scores for each PLSS section



Explore the Data: Combined Risk Assessment Map



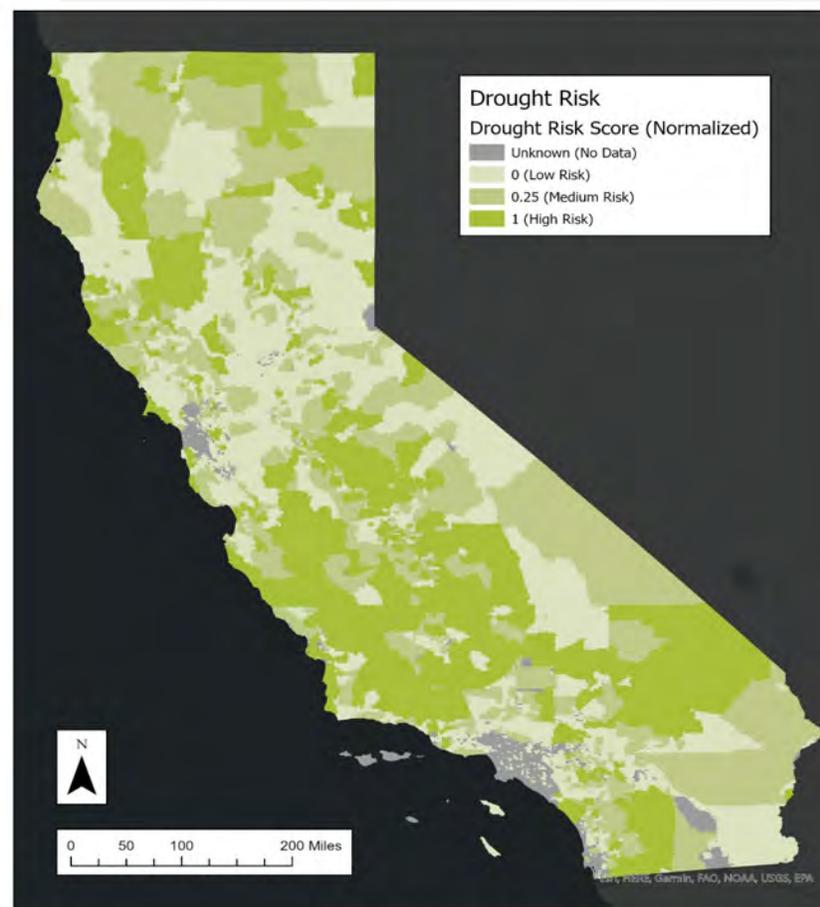
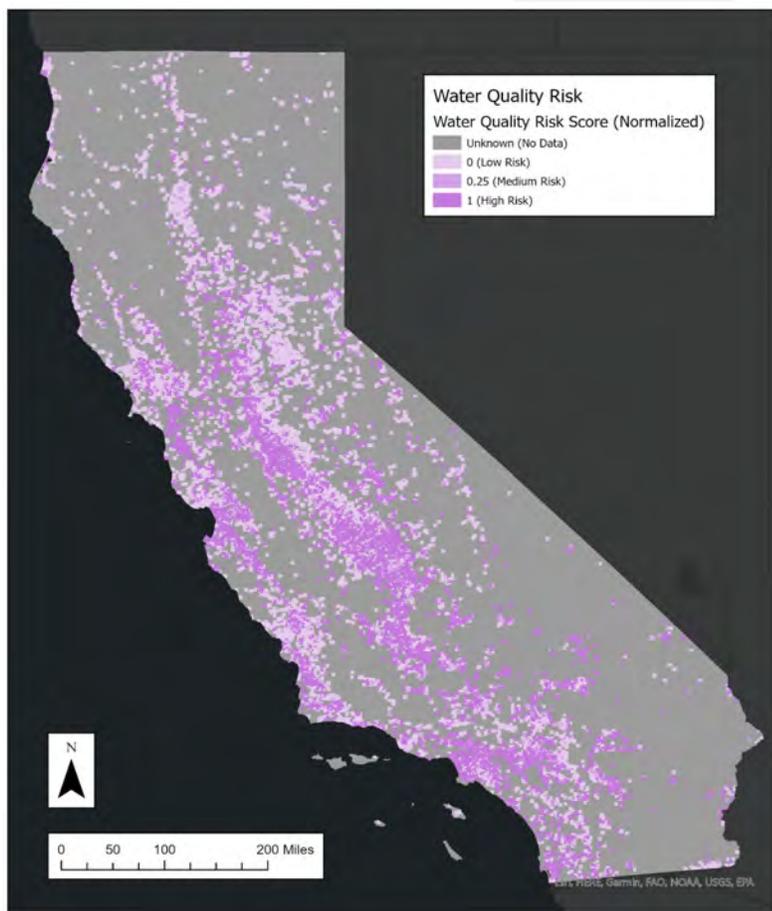
Explore the Map: <https://bit.ly/3o2k7Qb>

Map Features:

- Mask/un-mask areas with known SWSs & domestic wells.
- Add layer to see **CalEnviroScreen** data for each census track:
 - CalEnviroScreen 4.0 score percentile
 - Pollution burden percentile
 - Population characteristics percentile
 - Race/ethnicity population percentages
 - Percent of the population living two times below the federal poverty level.

Explore the Data: Water Quality & Drought Risk Maps

Users can explore the results of the water quality and drought risk assessments separately.



Preliminary 2022 Results: Risk Assessment for State Small Water Systems

Assessment (SSWSs)	At-Risk	Potentially At-Risk	Not At-Risk	Not Assessed
Combined Risk Assessment	378 (30%)	438 (34%)	455 (36%)	2 (0%)
Water Quality Risk Only (all locations)	631 (50%)	75 (6%)	426 (33%)	141 (11%)
Drought Risk Only (all locations)	321 (25%)	411 (32%)	535 (42%)	6 (0%)

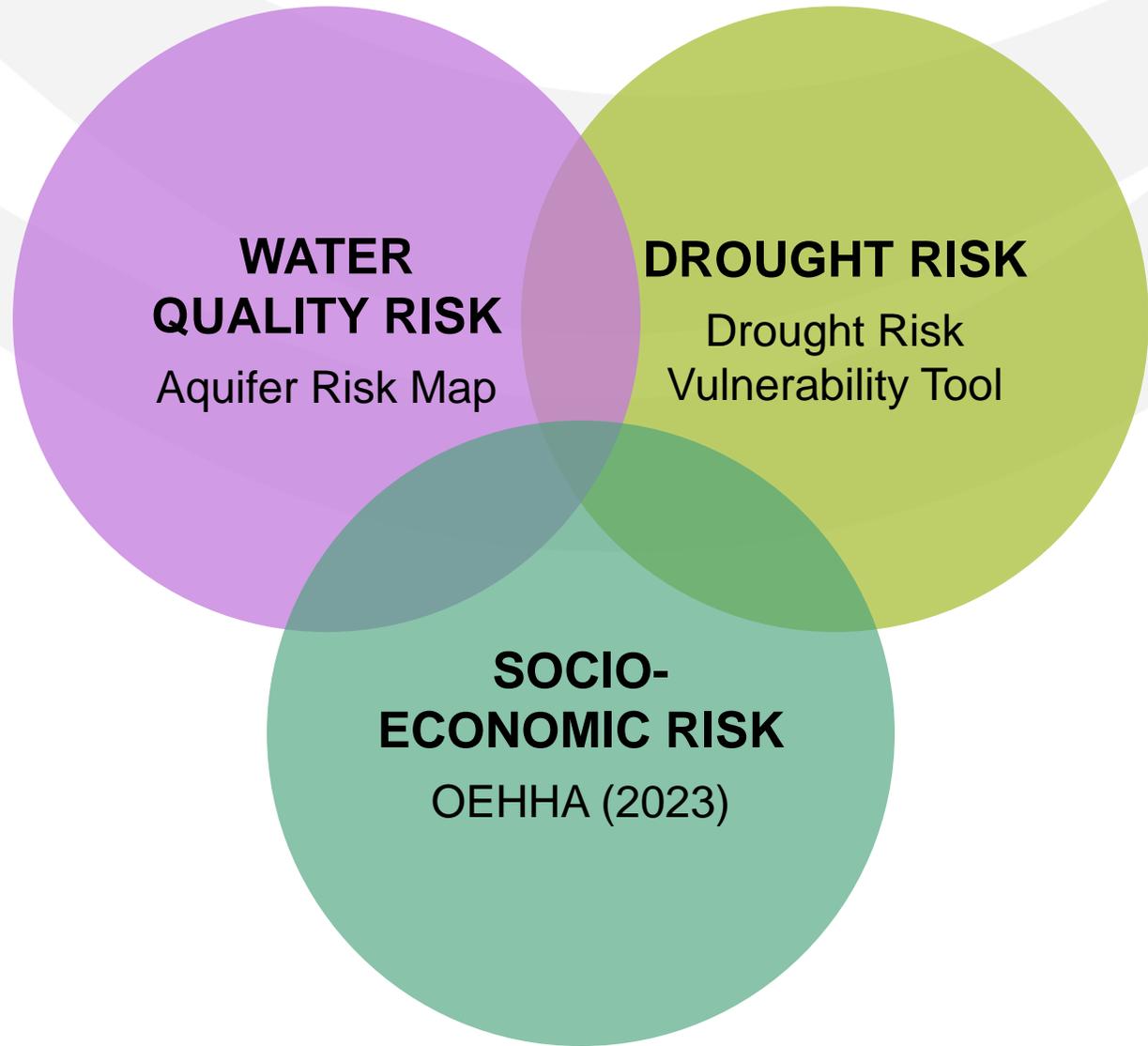
Preliminary 2022 Results: Risk Assessment for Domestic Wells

Assessment (Domestic Wells)	At-Risk	Potentially At-Risk	Not At-Risk	Not Assessed
Combined Risk Assessment	64,176 (21%)	90,840 (29%)	157,146 (50%)	25 (0%)
Water Quality Risk Only (all locations)	92,635 (30%)	17,078 (5%)	134,282 (43%)	68,192 (22%)
Drought Risk Only (all locations)	90,974 (29%)	88,340 (28%)	132,709 (43%)	164 (0%)

Proposed 2023: Risk Assessment for State Small Water Systems & Domestic Wells

The State Water Board is working with OEHHA and the Department of Water Resources to develop a combined Risk Assessment for 2023 utilizing:

- State Water Board’s **Aquifer Risk Map**; and
- Department of Water Resources: **Drought Risk Vulnerability Tool**
- OEHHA: **Newly developed socio-economic risk indicators** (workshops coming soon in Spring 2022)



Discussion Topic 2: Risk Assessment for SSWs & Domestic Wells

Do you have any questions or comments about the proposed changes to the Risk Assessment for state small water systems & domestic wells?

Ways to Participate

- 1. Watch ONLY:** Visit video.calepa.ca.gov
- 2. Email:** Submit a comment or ask a question that will be read aloud, send an email to: safer@waterboards.ca.gov
- 3. Q&A:** Submit a question using the Q&A feature at the bottom of your Zoom Screen. You can UPVOTE any question you would like answered.
- 4. Raise Hand:** Attendees will be given the opportunity to provide verbal comment or ask questions, if you're interested in this option, please raise your virtual hand when the time is right.

- Please wait for your name to be called.
- Public comments are 3 minutes each.

Proposed Changes: Cost Assessment

Mawj Khammas
Division of Drinking Water
Needs Analysis Unit



Drought Infrastructure Cost Assessment

In response to stakeholder feedback and the need to support SB 552 planning, the State Water Board has conducted a targeted infrastructure **Drought Cost Assessment**.

SB 522 requires small water suppliers (15 to 2,999 connections) and K-12 schools to:

- Detect production well groundwater levels - Jan 1, 2023
- Mutual aid organization membership - Jan 1, 2023
- Continuous operation during power failures Jan 1, 2024
- Have a backup source of water supply or a water system intertie by Jan 1, 2027
- Meter each service connection and monitor water loss by Jan 1, 2032
- Meet fire flow requirements by Jan 1, 2032 (*excluded from Assessment*)

2021 vs. 2022 (1/2)

	2021 Cost Assessment	2022 <u>Drought</u> Infrastructure Cost Assessment
Systems Included	<ul style="list-style-type: none"> ● Failing: HR2W list systems ● At-Risk public water systems, state small water systems & domestic wells 	<ul style="list-style-type: none"> ● All community water systems <ul style="list-style-type: none"> ○ Small (15 to 2,999 connections) ○ Large (greater than 2,999 connections) ○ K-12 schools
Long-Term Cost Estimate Infrastructure/Activity	<ul style="list-style-type: none"> ● Treatment, physical consolidation, or POU/POE ● Other Essential Infrastructure (OEI): storage tanks, new wells, well replacement, upgraded electrical, backup power, distribution replacement, additional meters, etc. ● Technical assistance 	<ul style="list-style-type: none"> ● Monitor static well levels ● Backup electrical supply ● Back-up source: new well or intertie ● Meter all service connections

2021 vs. 2022 (2/2)

	2021 Cost Assessment	2022 <u>Drought</u> Cost Assessment
Interim Cost Estimate	<ul style="list-style-type: none">• POU• POE• Bottled Water	Excluded
20-Year Operation & Maintenance Costs	Included	Excluded

Regional Cost Adjustment

The cost estimates were adjusted for regional cost variance using RSMeans City Cost Index (CCI).

Location	RSMeans CCI	Percent Adjustment
Rural	+3.0	0%
Urban	+3.97	+ 32%
Suburban	+3.89	+ 30%

California Counties Categorized by Generalized Location

Location	Counties
Rural	Alpine, Amador, Butte, Calaveras, Colusa, Del Norte, Fresno, Glenn, Humboldt, Imperial, Inyo, Kern, Kings, Lake, Lassen, Madera, Mariposa, Mendocino, Merced, Modoc, Mono, Nevada, Placer, Plumas, San Joaquin, Shasta, Sierra, Siskiyou, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, Yuba
Suburban	Alameda, Contra Costa, El Dorado, Marin, Monterey, Napa, Orange, San Benito, San Bernardino, San Luis Obispo, Santa Barbara, Santa Cruz, Solano, Sonoma
Urban	Los Angeles, Riverside, Sacramento, San Diego, San Francisco, San Mateo, Santa Clara, Ventura

Methodology: Detect production well groundwater levels

Steps	Method	Result
1. Identification of Systems with Need (inventory):	Utilize system response to 2020 EAR question on whether they monitor their static water level. Systems responding with “No” are included.	871 small CWSs and Schools
2. Determine Cost Estimate Assumptions:	Sounder cost (does not require well modifications): \$1,700	
3. Finalize Calculations:	\$1,700 x Inventory	\$1,680,000

Methodology: Mutual aid organization membership

Steps	Method	Result
1. Identification of Systems with Need (inventory):	All CWSs	N/A
2. Determine Cost Estimate Assumptions:	Membership in CalWARN is FREE	
3. Finalize Calculations:	\$0	\$0

Methodology: Continuous operation during power failures

Steps	Method	Result
1. Identification of Systems with Need (inventory):	Utilize system response to 2020 EAR question on whether they have back-up power for their sources. Systems responding with “None”, “Blank,” “Null”, or “Some” are included.	1,872 small CWSs and Schools
2. Determine Cost Estimate Assumptions:	<ul style="list-style-type: none"> • Estimate MDD; assume ADD = 150 gpd, PF = 2.25 (24 hours) • Generator base cost: \$30,134 • MDD multiplier: \$341 	
3. Finalize Calculations:	$\$30,134 + (\$341 \times \text{MDD})$	\$224,820,000

Methodology: Have a backup well or intertie (1/2)

Steps	Method	Result
1. Identification of Systems with Need (inventory):	<ul style="list-style-type: none"> Using SDWIS data, identified systems with one source that is a well. <i>Excluded:</i> systems with one source = intertie or surface water. The analysis first looked at the potential feasibility of an intertie. If an intertie is not potentially feasible, then a cost estimate for a new well was calculated. 	<p>Intertie: 142 small CWSs and Schools</p> <p>Well: 753 small CWSs and Schools</p>
2. Determine Cost Estimate Assumptions:	<p>Intertie</p> <ul style="list-style-type: none"> Buffer for intersects (added pipeline) = 1,000 ft Pipeline Cost per ft = \$155 Service line = \$5,000 Connection fee = \$6,600 Admin/Legal = \$200,000 	

Methodology: Have a backup well or intertie (2/2)

Steps	Method	Result
<p>2. Determine Cost Estimate Assumptions:</p>	<p>Well</p> <ul style="list-style-type: none"> Well drilling (1,000 ft) = \$790,000 Required well production MDD, which is calculated based on ADD of 150 gpm and PF of 2.25 \$85,000 for CEQA \$100,000 for SCADA 	
<p>3. Finalize Calculations:</p>	<p>Intertie Cost = Pipeline cost + Service line cost + Connection fees + Admin/legal fees + 20% Contingency+25% Planning and Construction</p> <p>Well Cost Estimate = Drilling cost + Development cost + Pump & Motor cost + SCADA cost + CEQA cost+25% Planning and Construction</p>	<p>Intertie: \$248,300,000</p> <p>Well: \$1,159,180,000</p>

Methodology: Meter each service connection

Steps	Method	Result
1. Identification of Systems with Need (inventory):	Utilize system response to 2020 EAR question on number of unmetered connection.	1,275 small CWSs and Schools
2. Determine Cost Estimate Assumptions:	<ul style="list-style-type: none"> • Equipment = \$825 (Per un-metered connection) • Software = \$29,000 (Per water system) 	
3. Finalize Calculations:	$\$29,000 + (\# \text{ Un-metered service connection} \times \$825)$	\$ 173,990,000

Preliminary Drought Cost Assessment Results

Drought Requirement	# Small CWS and Schools	Total Small CWS and Schools Cost Estimate
Monitor Static Well Levels	871 (33%)	\$1,680,000
Membership CalWARN / Mutual Aid	2,674 (100%)	\$0
Backup electrical supply	1,872 (70%)	\$224,820,000
Back-up source: new well or intertie	895 (33%)	\$1,407,480,000
Meter all service connections	1,275 (48%)	\$173,990,000
TOTAL:	2,674	\$1,807,970,000

Explore the data utilized to identify CWSs not meeting SB 552 requirements: <https://bit.ly/3r6IU7y>

Discussion Topic 3: Drought Infrastructure Cost Assessment

Do you have any questions or comments about the methodology for Drought Infrastructure Cost Assessment?

Ways to Participate

- 1. Watch ONLY:** Visit video.calepa.ca.gov
- 2. Email:** Submit a comment or ask a question that will be read aloud, send an email to: safer@waterboards.ca.gov
- 3. Q&A:** Submit a question using the Q&A feature at the bottom of your Zoom Screen. You can UPVOTE any question you would like answered.
- 4. Raise Hand:** Attendees will be given the opportunity to provide verbal comment or ask questions, if you're interested in this option, please raise your virtual hand when the time is right.

- Please wait for your name to be called.
- Public comments are 3 minutes each.

Proposed Changes: Affordability Assessment



Affordability Assessment

Changes to the Affordability Assessment indicators reflect proposed changes in the Risk Assessment for public water systems

2021	2022
% Median Household Income	% Median Household Income
Extreme Water Bill	Extreme Water Bill
% Shut-Offs	% Shut-Offs
	% of Residential Arrearages
	Residential Arrearage Burden

Affordability Assessment Continued (1)

Number of CWSs that exceeded an affordability indicator minimum threshold:

Community Status	Total Systems	%MHI Thresh.	Extreme Water Bill Thresh.	% Res. Arrearages Thresh.	Res. Arrearage Burden Thresh.
DAC	580 (20%)	88 (15%)	34 (6%)	37 (6%)	57 (10%)
SDAC	1,316 (46%)	289 (22%)	62 (5%)	58 (4%)	82 (6%)
Non-DAC	874 (30%)	122 (14%)	178 (20%)	43 (5%)	120 (14%)
Missing DAC Status	98 (3%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
TOTAL:	2,868	499 (17%)	274 (10%)	138 (5%)	259 (9%)

Explore the preliminary Affordability Assessment results data: <https://bit.ly/3L1aBXp>

Affordability Assessment Continued (2)

High: 3 or more of the 4 indicator thresholds

Medium: 2 of 4 indicator thresholds met

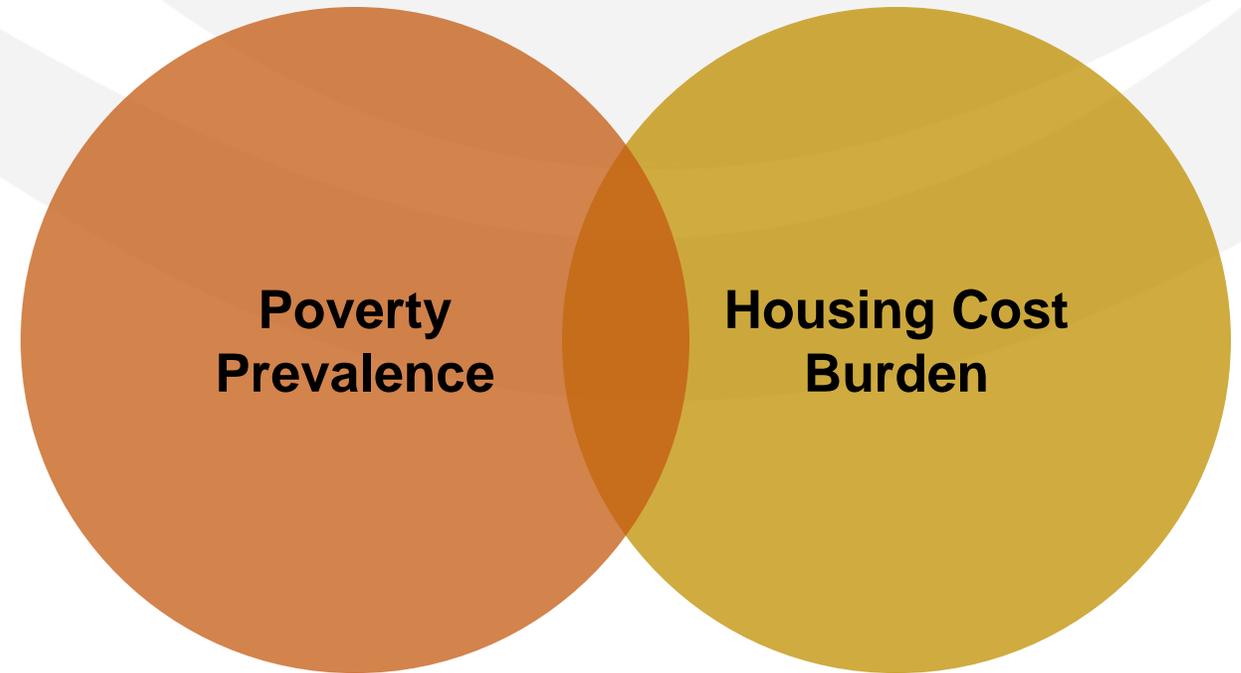
Low: 1 of 4 indicator thresholds met

Community Status	Total Systems	High Affordability Burden	Medium Affordability Burden	Low Affordability Burden
DAC	580	16 (3%)	47 (8%)	67 (12%)
SDAC	1,316	38 (3%)	83 (6%)	203 (15%)
Non-DAC	874	15 (2%)	132 (15%)	150 (17%)
Missing DAC Status	98	0 (0%)	0 (0%)	0 (0%)
TOTAL:	2,868	69 (2%)	262 (9%)	420 (15%)

Proposed 2023: Affordability Assessment

The State Water Board is working with OEHHA to develop new affordability indicators and a combined affordability threshold.

Workshops coming soon in Spring 2022.



Discussion Topic 4: Affordability Assessment

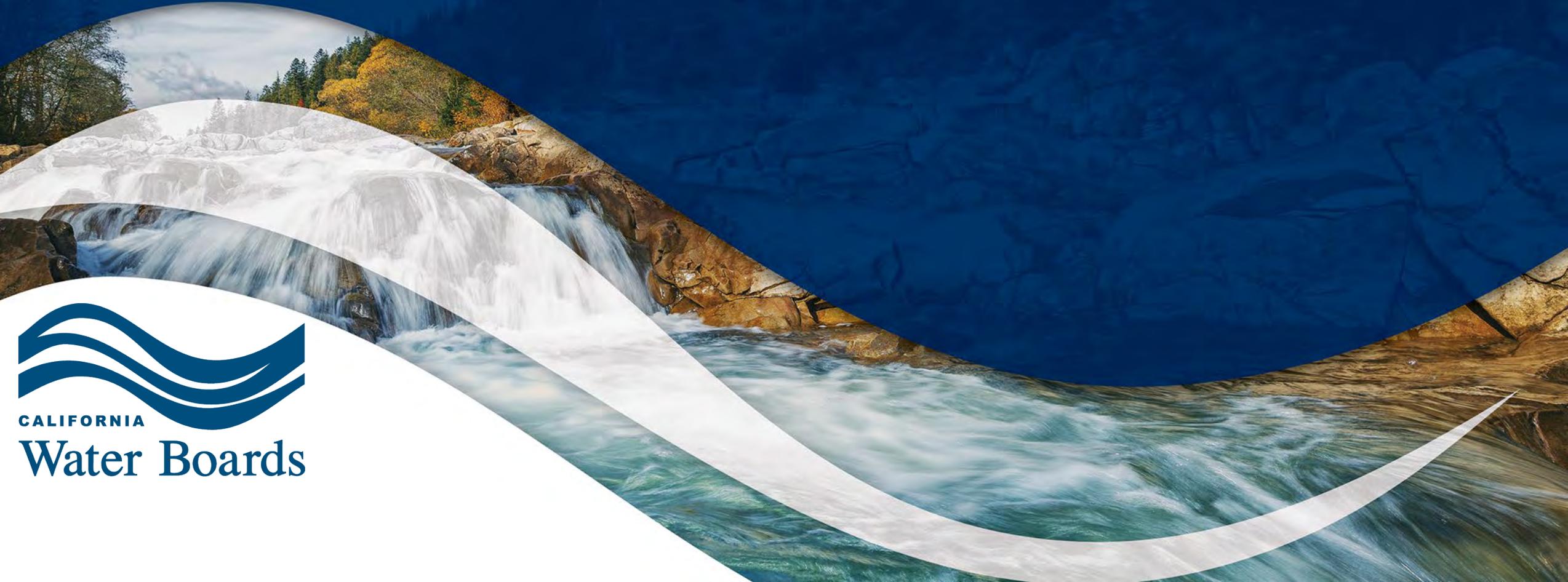
Do you have any questions or comments about the proposed changes to the Affordability Assessment?

Ways to Participate

- 1. Watch ONLY:** Visit video.calepa.ca.gov
- 2. Email:** Submit a comment or ask a question that will be read aloud, send an email to: safer@waterboards.ca.gov
- 3. Q&A:** Submit a question using the Q&A feature at the bottom of your Zoom Screen. You can UPVOTE any question you would like answered.
- 4. Raise Hand:** Attendees will be given the opportunity to provide verbal comment or ask questions, if you're interested in this option, please raise your virtual hand when the time is right.

- Please wait for your name to be called.
- Public comments are 3 minutes each.

Next Steps



Explore the Preliminary Results & Data

White Paper: <https://bit.ly/3g8npgi>

Risk Assessment for Public Water Systems

- Preliminary results map: <https://bit.ly/3rV4HOA>
- Spreadsheet with data and results: <https://bit.ly/3G2a7w9>

Risk Assessment for State Small Water Systems & Domestic Wells

- Interactive map: <https://bit.ly/3o2k7Qb>

Drought Infrastructure Cost Assessment

- Spreadsheet with data: <https://bit.ly/3r6IU7y>

Affordability Assessment

- Spreadsheet with data and results: <https://bit.ly/3L1aBXp>

Public Feedback & Refinement

Submit feedback by **March 2, 2022**:

Online Public Feedback Form: <https://forms.office.com/g/XZjxD53bLA>

Release 2022 Drinking Water Needs Assessment

The State Water Board will review submitted feedback on the proposed changes to the Needs Assessment methodologies and incorporate where appropriate.

The 2022 Drinking Water Needs Assessment will be released in **April 2022**.

Stay up-to date on SAFER activities by subscribing to the SAFER email list.

- HERE: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/needs_test.html#collapseSub

Public Workshop: Capacity Development Strategy

Capacity Development Strategy: The Safe Drinking Water Act of 1996 requires states to develop and implement a Capacity Development Strategy to increase the ability of public water systems to have long-term sustainability to ensure they can maintain compliance with all applicable drinking water laws and regulations.

The State Water Board will be hosting a public workshop in **March 2022** to solicit stakeholder feedback on key goals and objectives for the state's revised Capacity Development Strategy.

Discussion Topic 5: Open Q&A

Do you have any questions or comments about the proposed changes for the 2022 Needs Assessment?

Ways to Participate

- 1. Watch ONLY:** Visit video.calepa.ca.gov
- 2. Email:** Submit a comment or ask a question that will be read aloud, send an email to: safer@waterboards.ca.gov
- 3. Q&A:** Submit a question using the Q&A feature at the bottom of your Zoom Screen. You can UPVOTE any question you would like answered.
- 4. Raise Hand:** Attendees will be given the opportunity to provide verbal comment or ask questions, if you're interested in this option, please raise your virtual hand when the time is right.

- Please wait for your name to be called.
- Public comments are 3 minutes each.

Thank You

