CALIFORNIA
Water Boards

APPENDIX:
RISK ASSESSMENT METHODOLOGY FOR PUBLIC WATER SYSTEMS

LAST UPDATED: JUNE 2026

The State Water Board made the following changes to the 2026 Risk Assessment methodology for public water systems:

- Added a new indicator to the technical, managerial, and financial (TMF) Capacity category: **Receiver or Administrator Status**, effective March 2026.
- Updated the methodology for estimating Median Household Income (MHI), effective June 2026.

For the full methodology for all other components (excluding this new indicator), refer to the methodology published last year: *Risk Assessment Methodology for Public Water Systems*.[1]

Refer to Table 2 for a summary of risk indicator status over time and Table 3 for a summary of the scoring methodology for individual risk indicators, including this new indicator, for the 2026 Assessment.

Figure 1 illustrates the four risk categories with their assigned weights, and the resulting aggregated score calculation for the assessed public water systems. Refer to Table 4 for the normalized risk score ranges used to determine category risk levels.

New Risk Indicator: Receiver or Administrator Status

When a water system has been assigned a receiver or administrator, this status is a key risk indicator that the system lacks the ability to provide safe and reliable drinking water on its own.

A court-appointed receiver is assigned by the local Superior Court when a water system has demonstrated an inability to consistently provide safe drinking water or maintain essential infrastructure. The receiver assumes full control of the system to manage operations, restore compliance, and implement long-term solutions such as consolidation. The need for court intervention signals a serious level of system distress.

A State Water Board-appointed administrator[2] is assigned to water systems requiring technical, managerial, and/or financial intervention. Administrators may hold full-scope authority over all aspects of the water system or a limited scope addressing specific critical needs. Administrative appointment indicates the system has deficiencies beyond its own capacity to resolve.

[1] Appendix: Risk Assessment Methodology for Public Water Systems (2025) https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/needs/2025/2025risk-assessment-pws-methodology.pdf

[2] California Water Boards Administrator Program https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/administrator.html

Calculation Methodology
Required Risk Indicator Data Points & Sources:

- Receivership Assignments: Safe Drinking Water Information System (SDWIS)
- Administrator Assignments: SAFER Clearinghouse

Risk Indicator Calculation Methodology:

- Determine which systems have an assigned receiver or administrator on the day of the evaluation.

Threshold Determination
Presence of receiver or administrator is classified automatically as high-risk, as an external body was necessary to manage part or all of the public water system. This threshold is based on the State Water Board staff's judgment that such conditions indicate a water system's lack of ability to maintain compliance and provide reliable service on its own.

Risk Indicator Scoring & Weighting
Because most public water systems have a risk score of 0 for this indicator, its inclusion in the TMF Capacity category lowers the weighted average for that category across the majority of systems assessed. This, in turn, dilutes the relative contribution of other indicators within the TMF Capacity category and reduces the overall risk score for those systems, potentially moving some out of the "at-risk" designation.

Therefore, the "Receiver or Administrator Status" indicator is not included in the TMF Capacity category scoring. Instead, a direct override is applied after the risk score is calculated, where any public water system with a receiver or administrator assigned is automatically designated as "At-Risk," regardless of its final calculated risk score.

Table 1: "Receiver or Administrator Status" Thresholds, Scores & Weights

Threshold Number	Threshold	Score	Weight	Max Risk Score	Risk Level
0	**No** active receiver or administrator assigned	N/A	N/A	N/A	None
1	Active receiver or administrator assigned	Automatically At-Risk	N/A	N/A	Very High

Updated Methodology for Median Household Income (MHI) Estimation

The State Water Board refined the methodology for estimating MHI to improve accuracy effective June 2026. Summary of key refinements are listed below, and the full methodology is

detailed in the Appendix: *Median Household Income (MHI) and Economic Status Determination Methodology*.[3]

- Better geographic matching of best-fit census layer boundary (*i.e.*, census block group, tract, place, or ZIP Code Tabulation Area) with drinking water Service Area Boundary (SABL) by incorporating information on the location of homes.
- If a public water system's boundary is very small relative to the census area used to determine its MHI, the larger geography may mask the community's true socioeconomic conditions. In these cases, the median home value is used to adjust the census-area MHI. This helps address cases where a lower-income water system community is located within a higher-income census area, or where a higher-income community is located within a lower-income census area.
- The previous methodology selected a single best-fit census geography and calculated MHI based only on that one geography. Under the updated approach, larger water systems can use multiple census geography types to better reflect the actual service area, with MHI values combined using population-based weighting.
- Finally, the pool of usable census data was expanded by incorporating 2020-2023 census estimates when the most recent data from 2024 were unavailable.

Table 2: Risk Indicator Status Over Time

Category	Indicators	Year Started	Year Removed
Water Quality	History of *E. coli* Presence	2021	
	Increasing Presence of Water Quality Trends Toward MCL	2021	
	Treatment Technique Violations	2021	
	Past Presence on the Failing List	2021	
	Percentage of Sources Exceeding an MCL	2021	
	Maximum Duration of High Potential Exposure (HPE)	2021	2022
	Contaminants of Emerging Concern	2022	
Accessibility	Number of Sources	2021	
	Absence of Interties	2021	
	Water Source Types	2021	2022
	DWR – Drought & Water Shortage Risk Assessment Results	2021	
	Critically Overdrafted Groundwater Basin	2021	
	Bottled or Hauled Water Reliance	2022	

[3] Appendix: Median Household Income (MHI) and Economic Status Determination Methodology (2026) https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/needs/2026/2026mhi-calculation.pdf

Category	Indicators	Year Started	Year Removed
	Source Capacity Violations	2022	
Affordability	Percent of Median Household Income (%MHI)	2021	
	Extreme Water Bill	2021	
	% Shut-Offs	2021	2022
	Residential Arrearage Burden	2022	2023
	Percentage of Residential Customers with Arrearages	2022	2023
	Household Socioeconomic Burden	2023	
TMF Capacity	Number of Service Connections	2021	2022
	Operator Certification Violations	2021	
	Monitoring and Reporting Violations	2021	
	Significant Deficiencies	2021	
	Extensive Treatment Installed	2021	2022
	Days Cash on Hand	2022	
	Operating Ratio	2022	
	Net Annual Income	2022	
	Receiver or Administrator Status	**2026**	

Table 3: Individual Risk Indicator Thresholds, Scores and Weights in 2026 Risk Assessment

Risk Indicator	Thresholds	Score		Weight	Max Score	Risk Level
History of *E. coli* Presence	**Threshold 0** = **No** history of *E. coli* presence within the last three years.	0		N/A	0	None
	Threshold 1 = **Yes** history of *E. coli* presence (*E. coli* violation and/or Level 2 Assessment) within the last three years.	1		3	3	High
Increasing Presence of Water Quality Trends Toward MCL	**Threshold 0** = **Less than 25%** of sources meet any of the thresholds listed below.	0		N/A	0	None
	Threshold 1 = **Secondary Contaminants** If a source meets the following criteria: 9-year average of running annual averages is at or greater than 80% of MCL and the running annual average has increased by 20% or more.	0.25 per source	If 25% or more of sources meet any of these criteria, average the scores across all contaminated sources. (0 ≤ n* ≤ 1)	2	2	Medium if 0 < n* ≤ 0.5 High if 0.5 < n* ≤ 1
	Threshold 2 = **Primary Non-Acute Contaminants** If a source meets the following criteria: 9-year average of running annual averages is at or greater than 80% of MCL and the running annual average has increased by 5% or more.	0.5 per source				
	Threshold 3 = **Acute Contaminants**: If a source meets one or more of the following criteria: • 9-year average (no running annual average) is at or greater than 80% of MCL; or • Most recent 24-month average is at or greater than 80% of MCL; or • Any one sample exceeds the MCL.	1 per source				

Risk Indicator	Thresholds	Score		Weight	Max Score	Risk Level
Treatment Technique Violations	**Threshold 0** = **0** Treatment technique violations over the last three years.	0		N/A	0	None
	Threshold 1 = **1 or more** Treatment technique violations over the last three years.	1		1	1	High
Past Presence on the Failing List	**Threshold 0** = **0** Failing list occurrences over the last three years.	0		N/A	0	None
	Threshold 1 = **1** Failing list occurrence over the last three years.	0.5		2	1	Medium
	Threshold 2 = **2 or more** Failing list occurrences over the last three years.	1		2	2	High
Percentage of Sources Exceeding an MCL	**Threshold 0** = **less than 50%** of sources exceed an MCL.	0		N/A	0	None
	Threshold 1 = **50% or more** of sources exceed an MCL.	1		3	3	High
Contaminants of Emerging Concern	**Threshold 0** = **Less than 25%** of sources meet any of the thresholds listed below.	0		N/A	0	None
	Threshold 1 = If a source meets one or more of the following criteria: • **CrVI: 1 or more** calculated RAA(s) over 5-year period are at or above 80% of the MCL and below the MCL (8 µg/L ≤ RAA < 10 µg/L); or • **PFAS: 2 or more** samples over 5-year period are positive. This criterion applies to all PFAS chemicals included in the analysis.	0.5 per source	If 25% or more of sources meet any of these criteria, average the scores across all contaminated sources. ($0 \leq n^* \leq 1$)	3	3	Medium if $0 < n^* \leq 0.5$ High if $0.5 < n^* \leq 1$

Risk Indicator	Thresholds	Score		Weight	Max Score	Risk Level
	Threshold 2 = If a source meets one or more of the following criteria: • **CrVI: 1 or more** calculated RAA(s), over 5-year period, are at or above the MCL (10 µg/L ≤ RAA); or • **PFAS: 2 or more** samples, over 5-year period, are at or above the notification level. This criterion applies only to PFAS chemicals for which a notification level has been established; or • **1,4-Dioxane: 1 or more** calculated RAA(s), over 5-year period, are at or above the notification level (1 µg/L ≤ RAA).	1 per source				
Number of Sources	**Threshold X** = **0** sources.	Automatically At-Risk		N/A	N/A	Very High
	Threshold 0 = **2 or more** sources.	0		N/A	0	None
	Threshold 1 = **1** source.	1		3	3	High
Absence of Interties	**Threshold 0** = **1 or more** interties.	0		N/A	0	None
	Threshold 1 = **0** interties.[4]	1		1	1	High
DWR – Drought & Water	**Threshold 0** = **Below top 25%** of systems most at risk of drought and water shortage.	0		N/A	0	None

[4] Water systems with 10,000 service connections or more that have more than one source are excluded and a risk score of 0 is assigned. If a water system with 10,000 service connections or more has only one source and it is not an intertie, it receives a risk score of 1. Water systems with ten or more water sources are excluded and risk score of 0 is assigned.

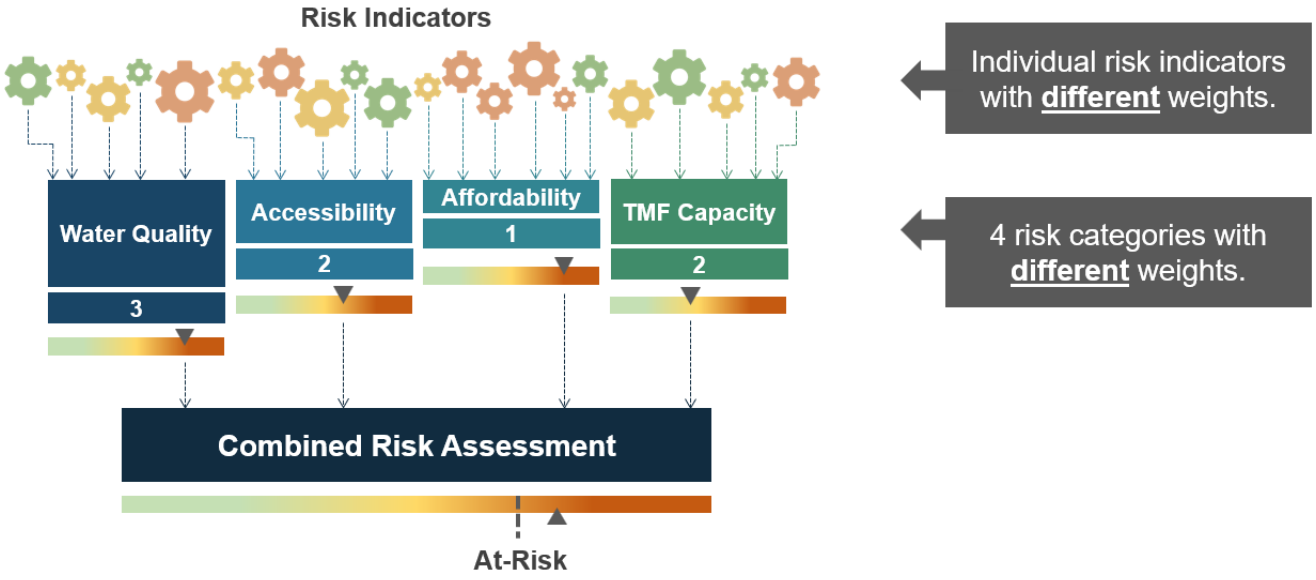
Risk Indicator	Thresholds	Score	Weight	Max Score	Risk Level
Shortage Risk Assessment Results	**Threshold 1** = **Top 25% or above but below top 10%** of systems most at risk of drought and water shortage.	0.25	2	0.5	Medium
	Threshold 2 = **Top 10%** of systems most at risk of drought and water shortage.	1	2	2	High
Critically Overdrafted Groundwater Basin	**Threshold 0** = **Less than 25%** of a system's wells are located within a critically overdrafted basin.	0	N/A	0	None
	Threshold 1 = **25% or more** of a system's wells are located within a critically overdrafted basin.	1	2	2	High
Source Capacity Violations	**Threshold 0 = 0** source capacity violations within the past 3 years; and **0** service connection moratoriums within the past 3 years.	0	N/A	0	None
	Threshold 1 = 1 or more source capacity violations within the past 3 years; or **1 or more** service connection moratoriums within the past 3 years.	1	3	3	High
Bottled or Hauled Water Reliance	**Threshold 0 = 0** occurrences of bottled or hauled water reliance within the past 3 years.	0	N/A	0	None
	Threshold 1 = 1 or more occurrences of bottled or hauled water reliance within the past 3 years.	Automatically At-Risk	N/A	N/A	Very High
Percent of Median	**Threshold 0** = **Less than 1.5%** of MHI spent on water.	0	N/A	0	None

Risk Indicator	Thresholds	Score	Weight	Max Score	Risk Level
Household Income (%MHI)	**Threshold 1** = **1.5% or greater** but **less than 2.5%** of MHI spent on water.	0.75	3	2.25	Medium
	Threshold 2 = **2.5% or more** of MHI spent on water.	1	3	3	High
Extreme Water Bill	**Threshold 0** = **Less than 150%** of the statewide average water charge for 6 HCF.	0	N/A	0	None
	Threshold 1 = **150% or greater** but **less than 200%** of the statewide average water charge for 6 HCF.	0.5	1	0.5	Medium
	Threshold 2 = **200% or greater** of the statewide average water charge for 6 HCF.	1	1	1	High
Household Socio-economic Burden	**Threshold 0** = Combined score **0 – 0.125**.	0	N/A	0	None
	Threshold 1 = Combined score **0.25 – 0.5**.	0.5	2	1	Medium
	Threshold 2 = Combined score **0.625 – 1.0**.	1	2	2	High
Operator Certification Violations	**Threshold 0** = **0** Operator Certification violations over the last three years.	0	N/A	0	None
	Threshold 1 = **1 or more** Operator Certification violations over the last three years.	1	3	3	High
Monitoring & Reporting Violations	**Threshold 0** = **1 or less** Monitoring & Reporting violations over the last three years.	0	N/A	0	None

Risk Indicator	Thresholds	Score	Weight	Max Score	Risk Level
	Threshold 1 = **2 or more** Monitoring & Reporting violations over the last three years.	1	2	2	High
Significant Deficiencies	**Threshold 0** = **0** Significant Deficiencies over the last three years.	0	N/A	0	None
	Threshold 1 = **1 or more** Significant Deficiencies over the last three years.	1	3	3	High
Operating Ratio	**Threshold 0** = **1 or greater**.	0	N/A	0	None
	Threshold 1 = **Less than 1**.	1	1	1	High
Total Annual Income	**Threshold 0** = **More than $0** total annual income.	0	N/A	0	None
	Threshold 1 = $0 total annual income.	0.5	1	0.5	Medium
	Threshold 2 = **Less than $0** total annual income.	1	1	1	High
Days Cash on Hand	**Threshold 0** = **90 days or more** cash on hand.	0	N/A	0	None
	Threshold 1 = **30 or more days** but **less than 90 days** cash on hand.	0.5	1	0.5	Medium
	Threshold 2 = **Less than 30 days** cash on hand.	1	1	1	High
Receivers or Administrator Status	**Threshold 0 = No** active receiver or administrator assigned.	N/A	N/A	N/A	None
	Threshold 1 = Active receiver or administrator assigned.	Automatically At-Risk	N/A	N/A	Very High

**n = Total score before applying the indicator weight*

Figure 1: Aggregated Risk Assessment Methodology with Category Weights



Category Risk Determination

The Public Water System Risk Assessment Dashboard[5] displays in multiple locations the Risk Category performance for water systems. **This performance designation is for the Dashboard only and does not have a direct role in 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 4 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.

Table 4: Risk Score Ranges by Category and Risk Level

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

[5] Risk Assessment Dashboard for Public Water Systems
https://app.powerbigov.us/view?r=eyJrIjoiNmJmMjY0ZTYtOTU2NS00Y2ZlLWExMDAtNDI5YTk4YThjMTdhIiwidCI6ImZlMTg2YTI1LTdkNDktNDFlNi05OTQxLTA1ZDIyODFkMzZjMSJ9