SAFER Webinar Series (Part 2)

Identifying At-Risk Public Water Systems

CALIFORNIA
Water Boards

Participation Instructions

Webcast: video.calepa.ca.gov/

Technical assistance email: safer@waterboards.ca.gov

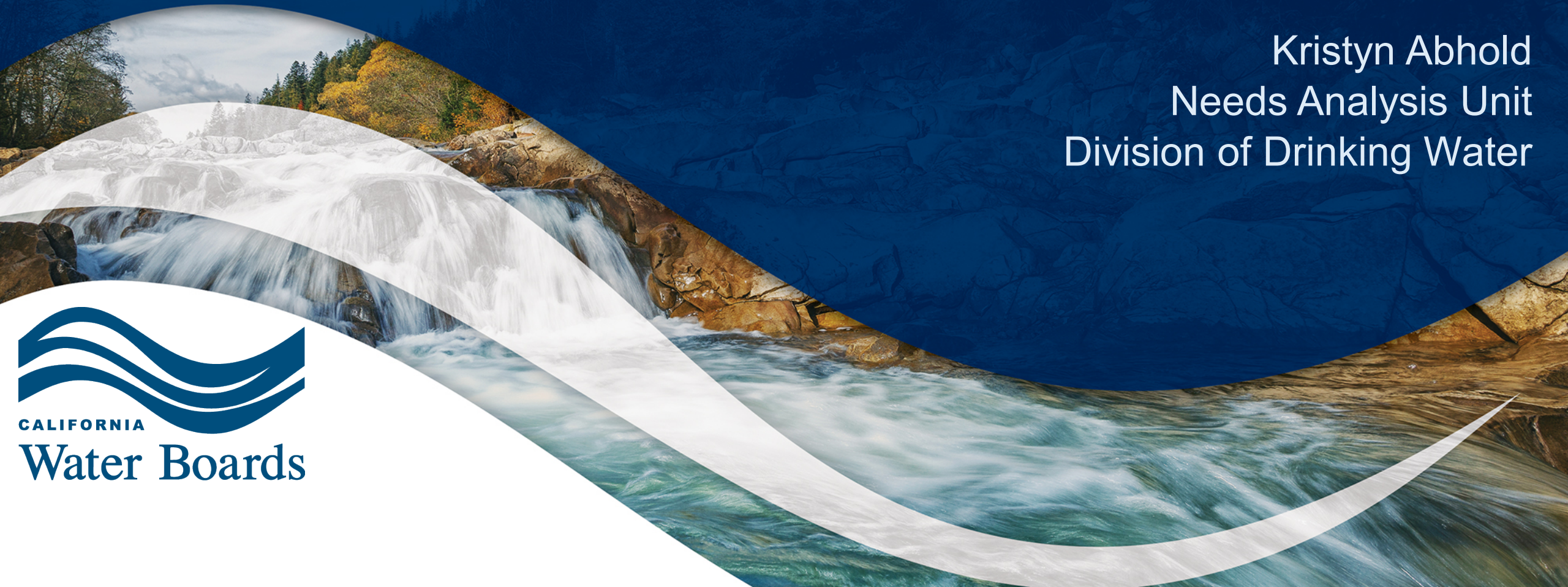
Public Comment:

- To submit a comment as a member of the public, fill out the online form at https://bit.ly/AtRisk2-AM

- If you cannot fill out an online form, email the following to safer@waterboards.ca.gov
  - your name,
  - affiliation,
  - last 3 digits of your phone number,
  - Indicate if you'd like to read your comment yourself,
  - Subject: “At-Risk Webinar AM Session”

Welcome and Introduction

Kristyn Abhold
Needs Analysis Unit
Division of Drinking Water



CALIFORNIA
Water Boards

Audience Poll Question 1

Did you participate in or review the April 17, 2020 webinar on Risk Assessment for Public Water Systems?

- Yes
- No

Link to View recording and materials for April 17, 2020 webinar: https://www.waterboards.ca.gov/safer/calendar.html

Audience Poll Question 2

Have you read the Draft White Paper: "***Identification of Risk Assessment 2.0 Indicators for Public Water Systems***?"

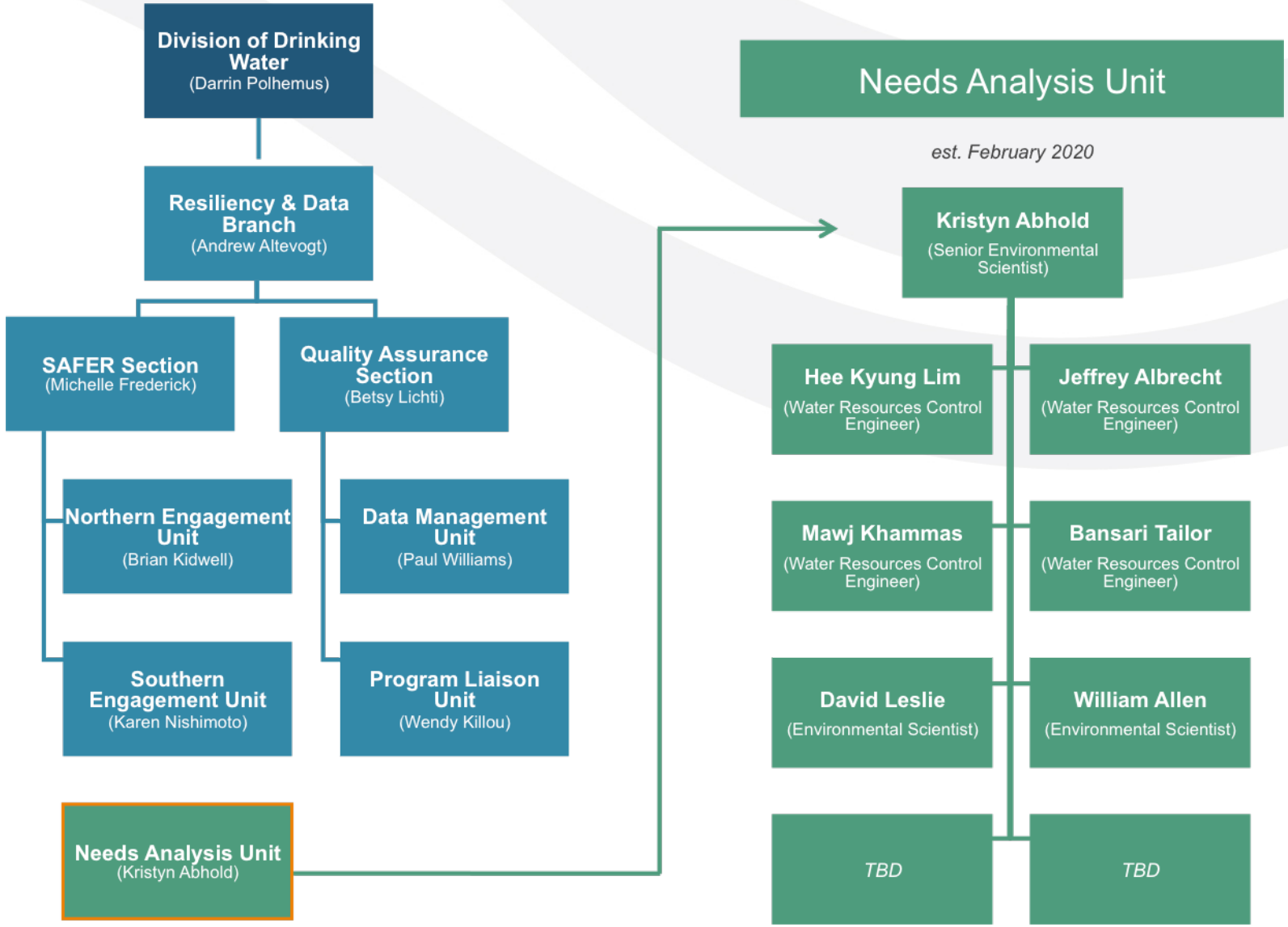
- Yes, read the whole thing
- Yes, I skimmed it
- No, but I plan to
- No, I don't intend to read it

Access Draft White Paper here:
https://www.waterboards.ca.gov/drinking_water/programs/safer_drinking_water/docs/draft_white_paper_indicators_for_risk_assessment_07_15_2020_final.pdf

Presentation Outline

- Introduction of DDW Needs Analysis Unit.
- Overview of Needs Assessment.
- Risk Assessment 2.0 Development.
- Timeline.

Needs Analysis Unit



Needs Analysis Unit Projects

2021-22 NEEDS ASSESSMENT

Develop approach and datasets for determining "at-risk" water systems & domestic wells and cost estimate.

SAFER CLEARINGHOUSE

Build a new database system to implement and track the SAFER Program.

AFFORDABILITY ASSESSMENT

Identify alternative metrics and thresholds for measuring water affordability (this is a component of the Needs Assessment).

CAPACITY DEVELOPMENT

Assume DDW Capacity Development responsibilities and integrate TMF principles into Needs Assessment.

WATER SYSTEM BOUNDARIES

Verify and update the State Water Board's water system boundaries – both service area & jurisdictional boundaries.

STATE SMALL & DOMESTIC WELL DATA

Develop an interim and long-term strategy for collecting SSWS & DW data from Counties.

SB 200 and the Needs Assessment

- Senate Bill 200 (2019) enabled the establishment of the Safe and Affordable Funding for Equity and Resilience (SAFER) Program.
  - SAFER: A set of tools, funding sources, and regulatory authorities to help struggling water systems sustainably and affordably provide safe drinking water.
- Senate Bill 200 also created the Safe and Affordable Drinking Water Fund.
  - Up to $130 million per year through 2030
  - 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**” (Health and Safety Code §116769).

SAFER Program

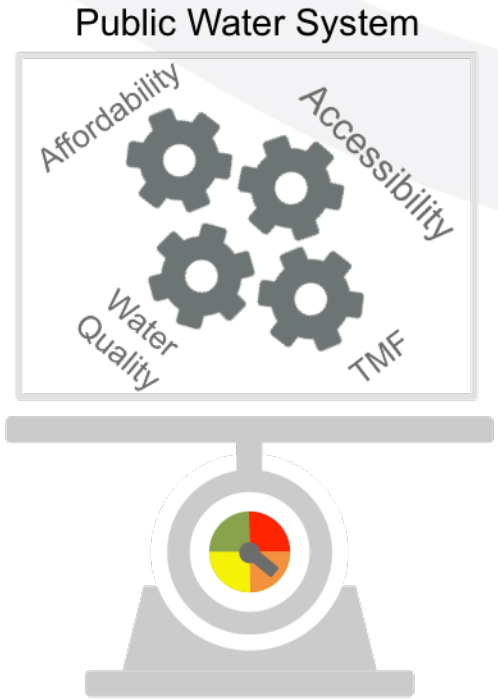
Needs Assessment Components

COMPONENT 1	**Affordability Assessment** *Public Water Systems*
COMPONENT 2	**Risk Assessment** *Public Water Systems (<3,300 connections), Tribal Systems, State Small Water Systems, and Domestic Wells*
COMPONENT 3	**Cost Estimate for Interim and Long-Term Solutions** *Public Water Systems (<3,300 connections), Tribal Systems, State Small Water Systems, and Domestic Wells*

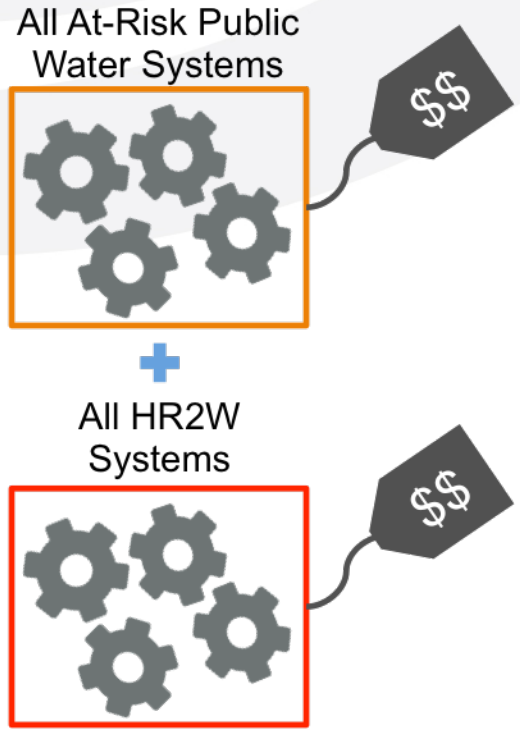
Needs Assessment for Public Water Systems

AFFORDABILITY ASSESSMENT

RISK ASSESSMENT



COST ESTIMATE

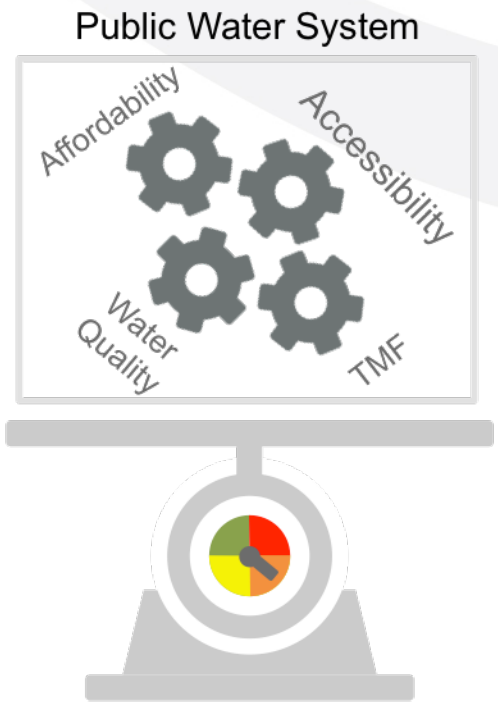


Needs Assessment for Public Water Systems

AFFORDABILITY ASSESSMENT

TODAY'S WEBINAR

RISK ASSESSMENT



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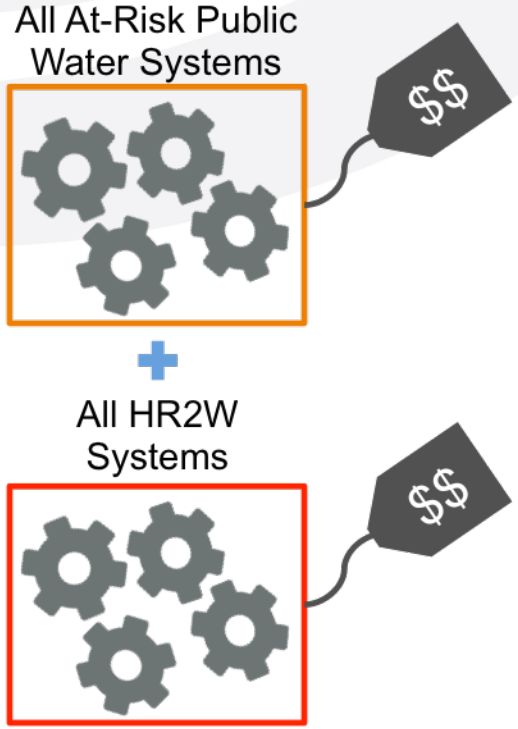
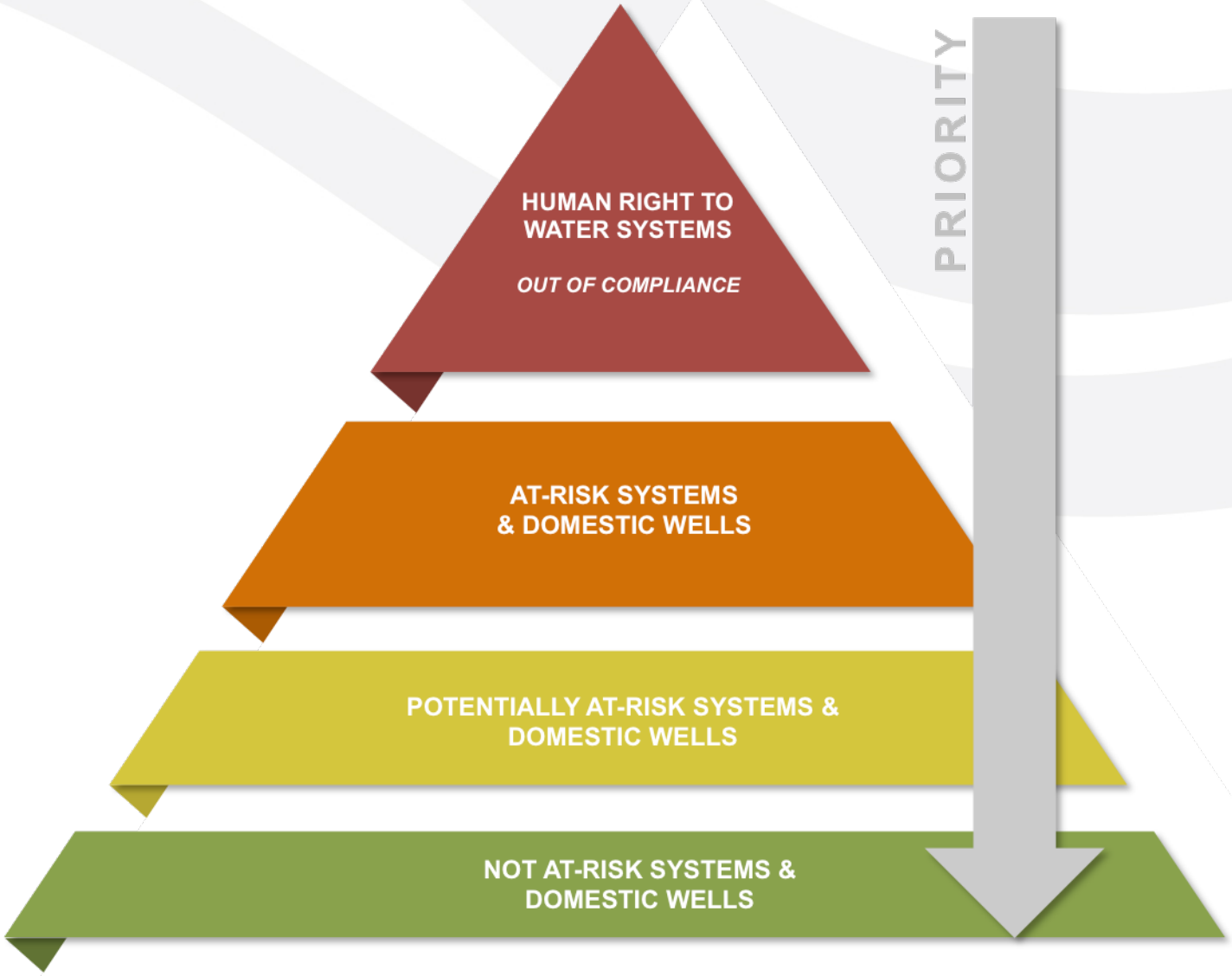
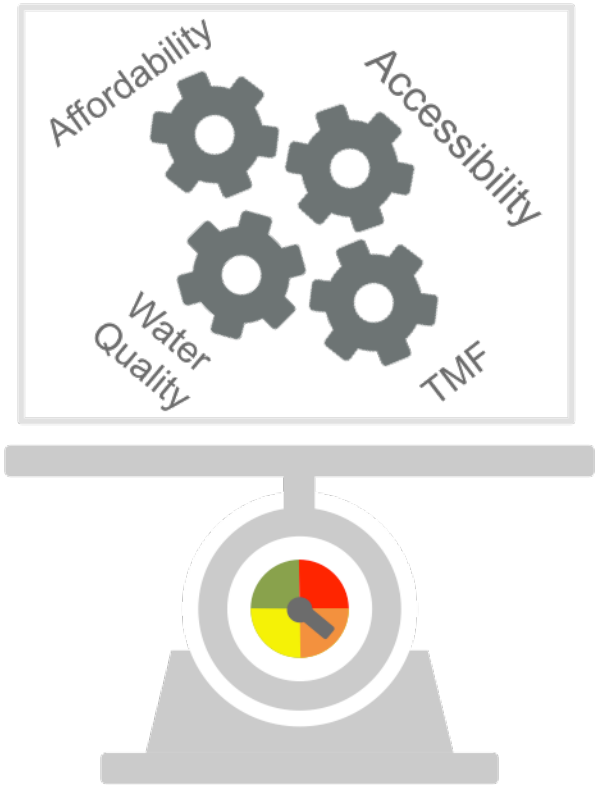


SAFER Program and the Risk Assessment



Risk Assessment for Public Water Systems

Public Water System



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.

THRESHOLDS

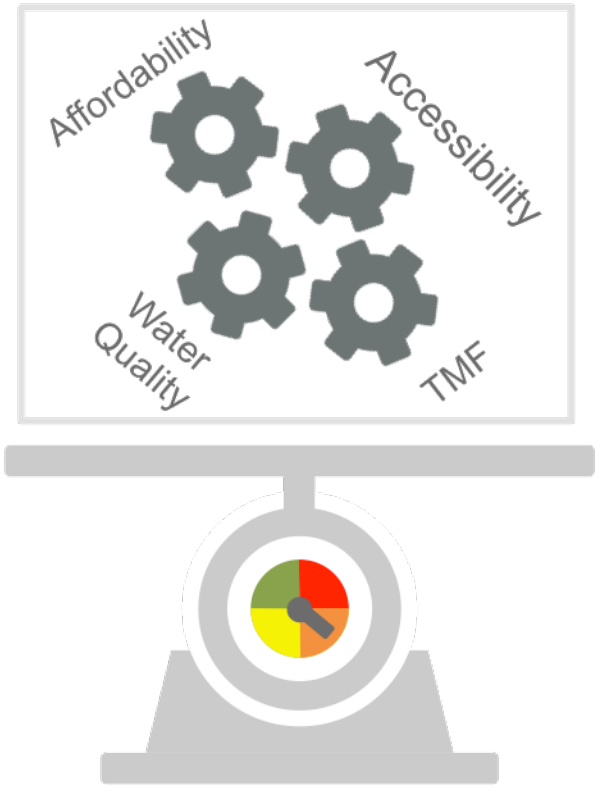
Values associated with a risk indicator that designates when a water system is more at-risk of becoming non-compliant with water quality standards.

WEIGHTS / SCORES

Application of weight to each risk indicator – as some may be deemed more critical than others in contributing to overall risk.

Risk Assessment for Public Water Systems

Public Water System



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RISK INDICATORS

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TODAY'S WEBINAR

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 – as some may be deemed more critical than others in contributing to overall risk.

FUTURE 2020 WEBINARS

Re-Cap Risk Assessment 1.0 Indicators

Risk Assessment 1.0 Indicators (water systems < 3,300 connections)

- Explored in April 17, 2020 Webinar and Detailed in Draft White Paper: https://www.waterboards.ca.gov/safer/calendar.html

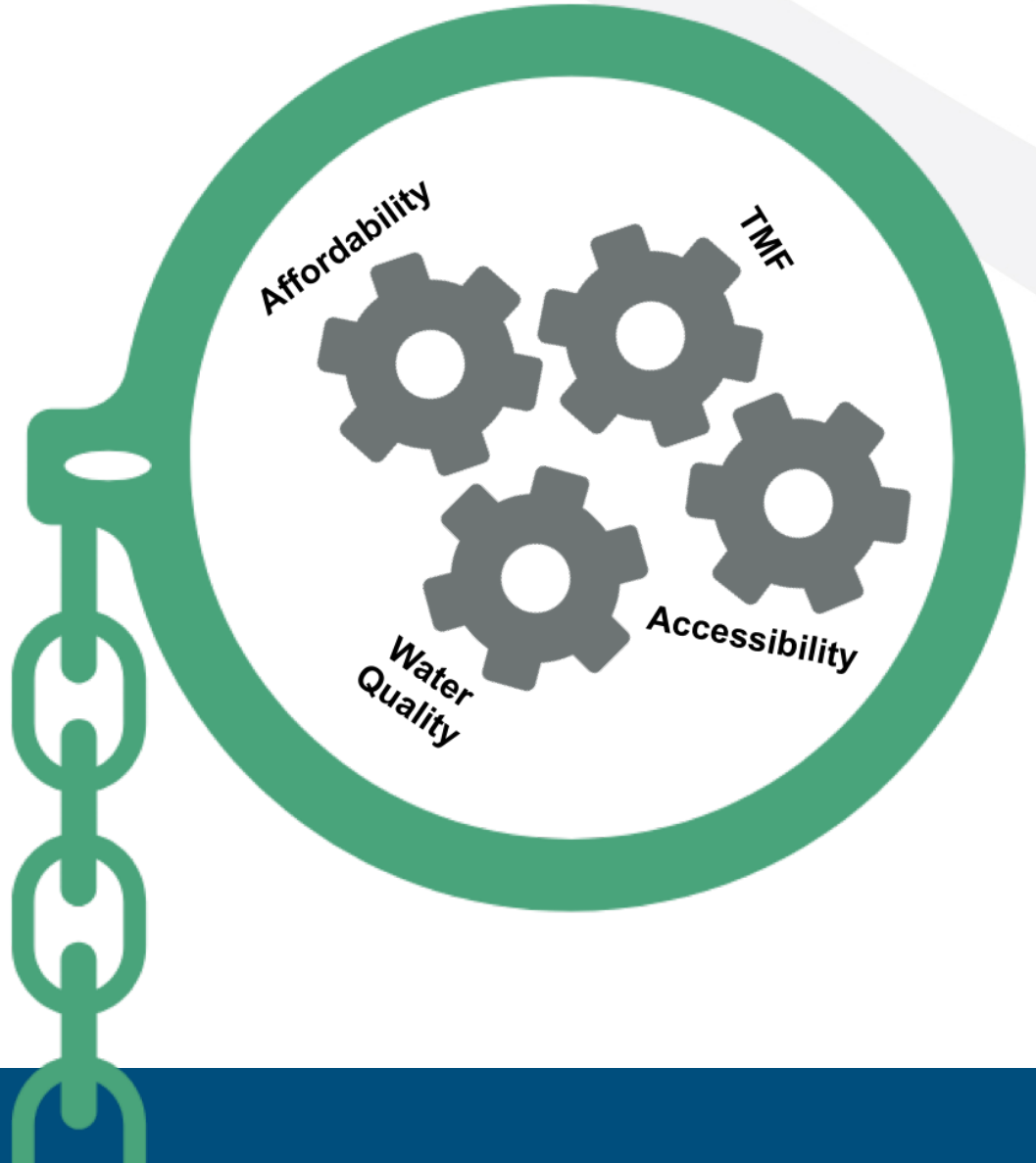
- Water Outages
- Waterborne Illness: Current and Historical
- Lead and Copper
- Extensive Treatment Required
- Treatment Technique Violations
- Single Groundwater Source
- Absence of Customer-Level Meters

- Monitoring and Reporting Violations
- Bacteriological Violations or E. coli
- Operator Certification Violations
- Disadvantaged Community Status
- Location In a High Priority Groundwater Basin
- Active Standing with California Secretary of State Status Requirements

April 17, 2020 Webinar Public Feedback on Risk Indicators

- Determine categories and indicators that more closely align with HR2W goals
  - Water Quality
  - Accessibility
  - Affordability
  - Technical, Managerial, and Financial Capacity
- Explore Risk Indicators used by other State efforts
- Publish White Paper prior to next public webinar workshop

Risk Indicators 2.0 – Through a Compliance Lens



RISK INDICATORS

A concerted effort was made to identify potential indicators based on their criticality as it relates to a system's ability to remain in compliance with safe drinking water standards.

Phases of Risk Assessment 2.0 Development for Public Water Systems

1

Identify Potential Risk Indicators
- Align with HR2W goals
- Develop methodology for evaluating potential indicators: Risk Indicator Evaluation Tool

2

Select Risk Indicators
- Share results of risk indicator evaluation with public
- Determine final list of indicators for inclusion in Risk Assessment 2.0

3

Set Thresholds
- Determine (tiered) thresholds for risk indicators

4

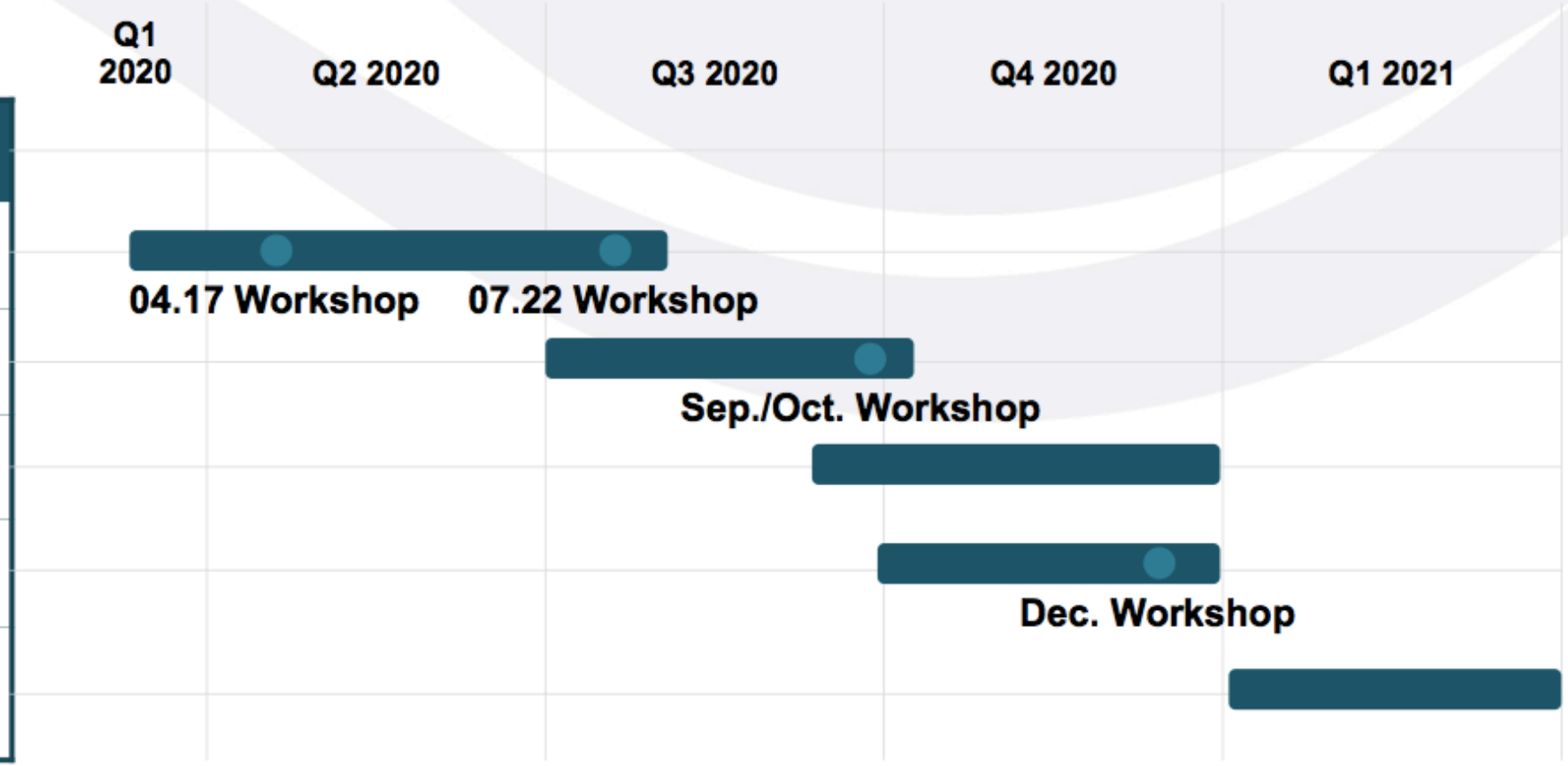
Determine Scoring/Weighting Approach
- Per indicator and/or indicator category
- Test methodology options for a set of systems, ground truth results, share option for public feedback

5

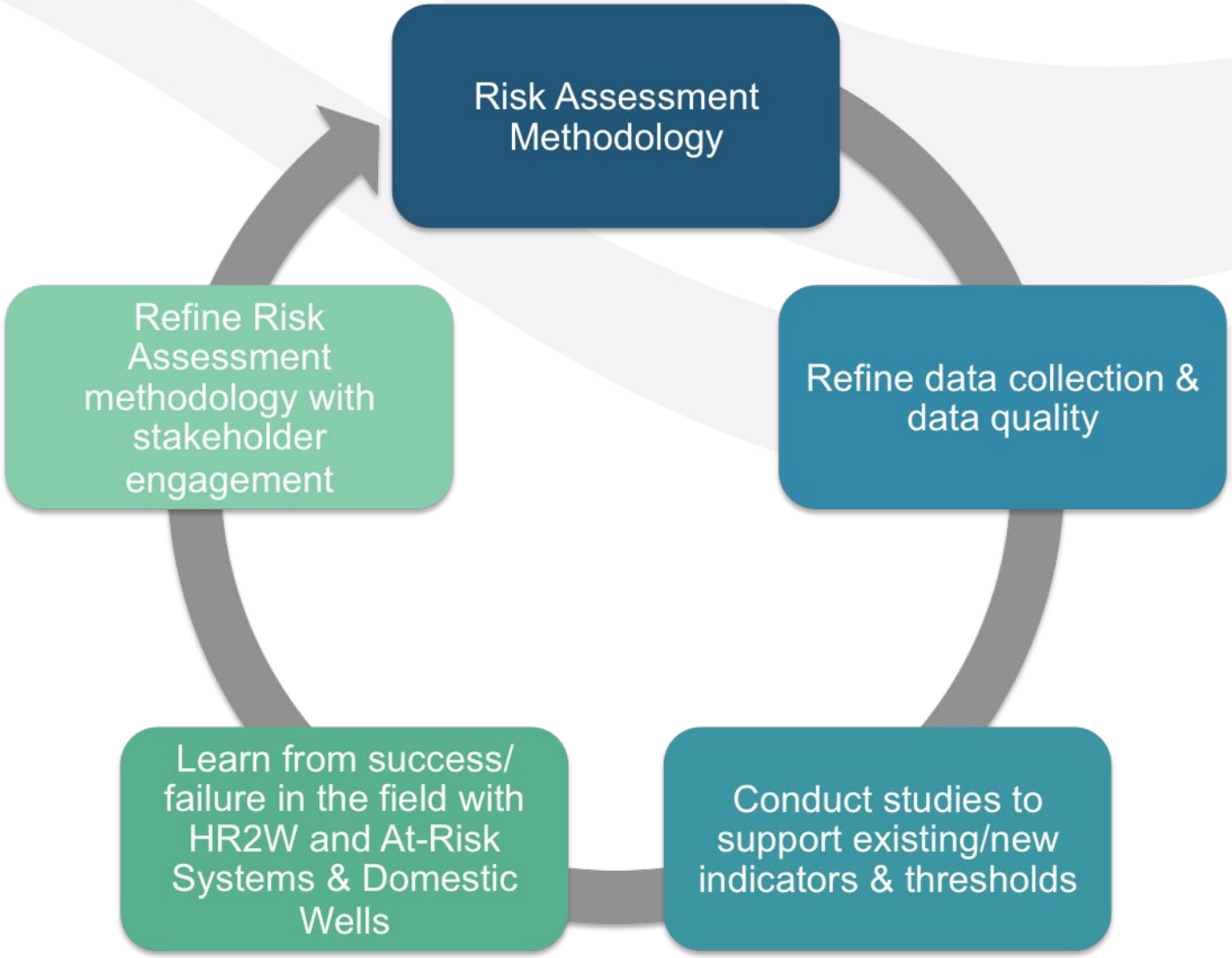
Conduct Risk Assessment for 2021-22 Fund Expenditure Plan
- Finalize methodology using public feedback
- Conduct Risk Assessment

Projected Risk Assessment 2.0 Timeline

PHASES
1: Identify Potential Risk Indicators
2: Select Risk Indicators
3: Set Thresholds
4: Determine Scoring/Weighting Approach
5: Conduct 2021-22 Risk Assessment



Risk Assessment 3.0 + Vision for the Future



Potential Risk Indicators

Greg Pierce
Luskin Center for Innovation
University of California, Los Angeles

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Progress Since April 17 Public Webinar

1. Identified and defined the **4 risk indicator categories**
2. Conducted an extensive effort to identify **118 potential risk indicators** that align with these categories
3. Developed a draft **Evaluation Tool**, to assess potential risk indicators for inclusion in Risk Assessment 2.0
4. Published **White Paper** for public feedback

Risk Indicator Categories

- **WATER QUALITY**
- ACCESSIBILITY
- AFFORDABILITY
- TECHNICAL, MANAGERIAL, & FINANCIAL CAPACITY

Risk indicators that:

- Correspond to California SDWA water quality requirements.
- Measure current water quality and trends to identify likelihood of future compliance with water quality and treatment technique regulatory requirements.
- Measure frequency and duration of exposure to drinking water contaminants.

Risk Indicator Categories

WATER QUALITY

ACCESSIBILITY

AFFORDABILITY

TECHNICAL, MANAGERIAL, & FINANCIAL CAPACITY

Risk indicators that impact a system's ability to deliver safe, sufficient, and continuous drinking water to meet public health needs.

These indicators may measure risks impacting a system's quality and quantity of source water; reliability and volume of its delivery/distribution; and ability of customers to access safe drinking water.

Risk Indicator Categories

- WATER QUALITY
- ACCESSIBILITY
- **AFFORDABILITY**
- TECHNICAL, MANAGERIAL, & FINANCIAL CAPACITY

Risk indicators that measure the capacity of and burden placed on households and the customer base as a whole to supply the revenue necessary for a system to pay for necessary capital, operations, and maintenance expenses to deliver accessible, safe drinking water.

Risk Indicator Categories

- WATER QUALITY
- ACCESSIBILITY
- AFFORDABILITY
- **TECHNICAL, MANAGERIAL, & FINANCIAL CAPACITY**

Risk indicators that measure a system's technical, managerial, and financial capacity to plan for, achieve, and maintain long term compliance with drinking water standards, thereby ensuring the quality and adequacy of the water supply.

Audience Poll Question 3

Do these risk indicator category definitions capture what the State Water Board should be considering for Risk Assessment 2.0?

- Yes, I like these definitions
- Maybe, I think they need some minor edits
- No, these need to be re-worked

Discussion Topic 1: Risk Indicator Categories

- Do these risk indicator category definitions (slides 23 – 26 in your packets) capture what the State Water Board should be considering for Risk Assessment 2.0?

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Identifying Potential Risk Indicators

- Researched federal, state, and NGO efforts
- Explored alignment with other CA State efforts:
  - **Office of Environmental Health Hazard Assessment (13 Indicators)**
    - HR2W Risk Assessment and Data Tool
  - **Department of Water Resources (29 Indicators)**
    - Integrated Regional Water Management (IRWM) planning efforts
    - Drought and Water Shortage Risk Scoring Tool
  - **California Public Utilities Commission (3 Indicators)**
    - Affordability Metrics Framework

Audience Poll Question 4

Are there other State or Federal efforts the State Water Board should be considering when developing Risk Assessment 2.0?

- No, you're considering the key efforts
- Yes, I will submit a public comment to identify an additional effort

Water Quality (25 Potential Indicators – See Table 3, Page 17 in White Paper)

- Frequency of Bacteriological Violations (Total Coliform)
- Current Water Quality Greater than 50% for Acute Contaminants Max. Duration of Non-compliance
- Presence of Water Quality Trends Toward MCL
- Frequency of Water Quality Trends Toward MCL
- Current Water Quality Greater than 50% for Acute Contaminants
- Emerging Contaminants
- Proximity to Septic System for the Public Water System Source

Accessibility (36 Potential Indicators – See Table 4, Page 20 in White Paper)

- Adequate Water Storage Capacity
- Location In a High Priority Groundwater Basin
- Number of Water Sources
- Water Rights / Water Allocations
- Water Outages: Public Water System
- Backup Power Supply
- Distribution System Pressure
- Water Loss

Affordability (22 Potential Indicators – See Table 5, Page 23 in White Paper)

- Percent of Community Poverty Threshold
- Percent of Deep Poverty Income
- Poverty Prevalence Indicator
- Household Burden Indicator
- Average Water Rates divided by 20th percentile household income
- Hours at Minimum Wage to Pay Water Bill
- Households Delinquent in Paying Bills
- Extreme Water Bill
- Customers receiving Water Bill Payment Assistance

Technical, Managerial, and Financial Capacity (35 Potential Indicators – See Table 6, Page 26 in White Paper)

- Operating Ratio with Depreciation
- Days Cash on Hand
- Debt to Equity Ratio
- Member of CalWARN or Alternative Mutual Aid Agreement
- Insurance Coverage (e.g. JPRIMA)
- Number of Staff Per Connection
- Full-Time Operator
- Asset Management Plan (AMP)
- Number of Service Connections
- Updated Rate Structure

Audience Poll Question 5

Do the Potential Risk Indicators identified in the White Paper align with your expectations?

- Yes, this includes most risk indicators I had in mind
- Maybe, I haven't had a chance to review all 118 yet
- Maybe, there are some that need to be added/removed from this list
- No, the list of potential risk indicators doesn't align with my expectations

Discussion Topic 2: Potential Risk Indicators

- What additional risk indicators should be considered or evaluated?
- Are there other State or Federal efforts we should explore to identify additional potential risk indicators?

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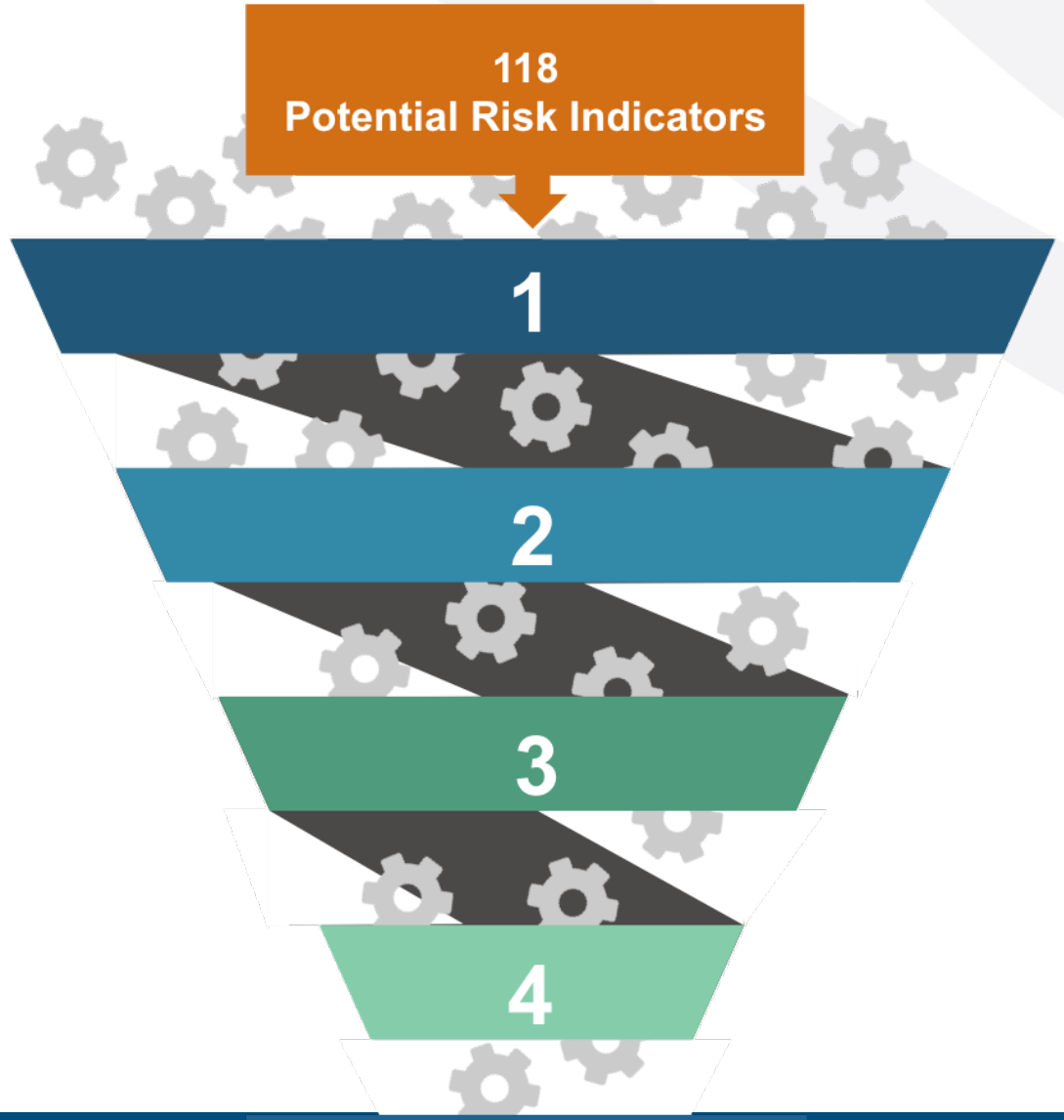
Proposed Process for Selecting Indicators for Risk Assessment 2.0



① Assess 118 potential risk indicators for Applicability and Data Fitness using Evaluation Tool.

② Use evaluation results to refine list of potential risk indicators and make recommendation.

③ Solicit public feedback on recommended list.

④ Determine final list of indicators for Risk Assessment 2.0 based on public feedback.

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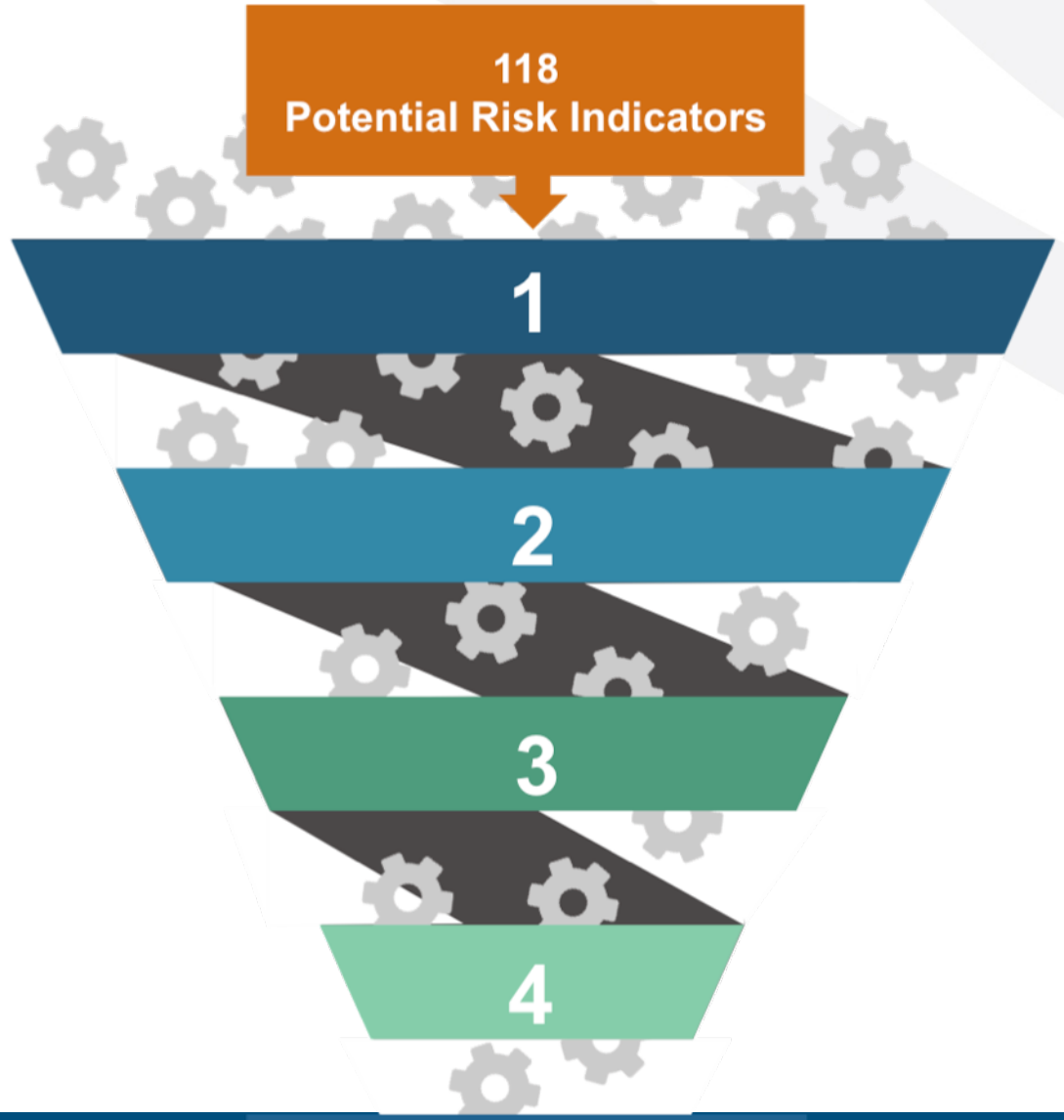

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④ Determine final list of indicators for Risk Assessment 2.0 based on public feedback.

DRAFT Risk Indicator Evaluation Tool

DRAFT Risk Indicator Evaluation Tool

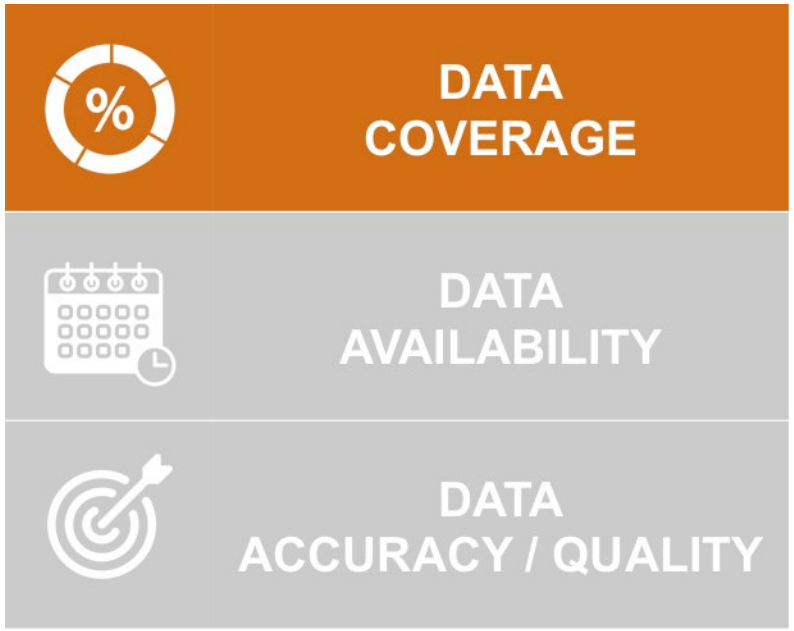
This step evaluates whether a relatively strong relationship exists between a potential risk indicator and a water system's ability to provide adequate and safe drinking water.

- Scoring Criteria for Step 1:
  - **Excellent**: Evidence-driven
  - **Good**: Water sector recognized
  - **Fair**: Some water sector debate over relationship
  - **Poor**: Neither evidence-based nor water sector recognized

DRAFT Risk Indicator Evaluation Tool

STEP 2: DATA FITNESS

This step will evaluate whether the **required data** for each risk indicator meets the following criteria:



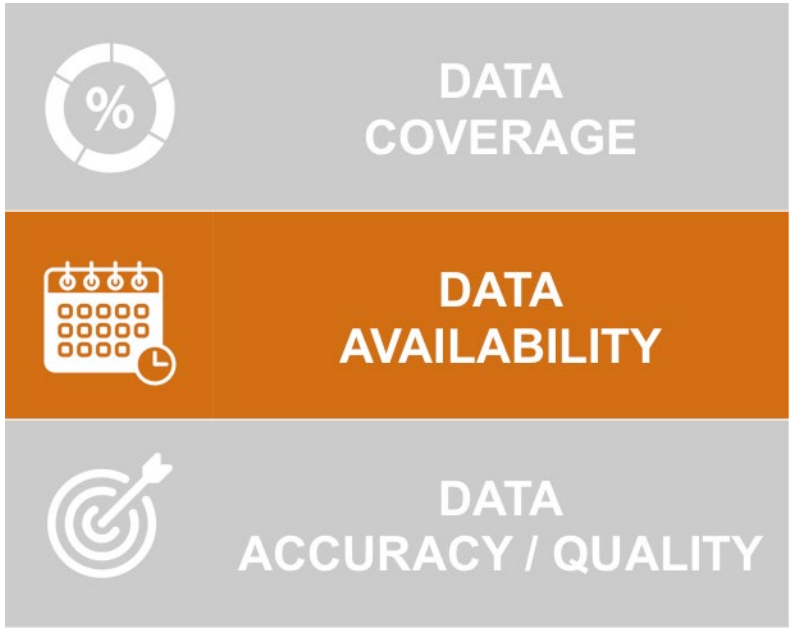
Evaluates whether the data is available for a sufficient number of California public water systems.

- **Good**: 90% or more
- **Fair**: 65% - 90%
- **Poor**: Below 65%

DRAFT Risk Indicator Evaluation Tool

STEP 2: DATA FITNESS

This step will evaluate whether the **required data** for each risk indicator meets the following criteria:



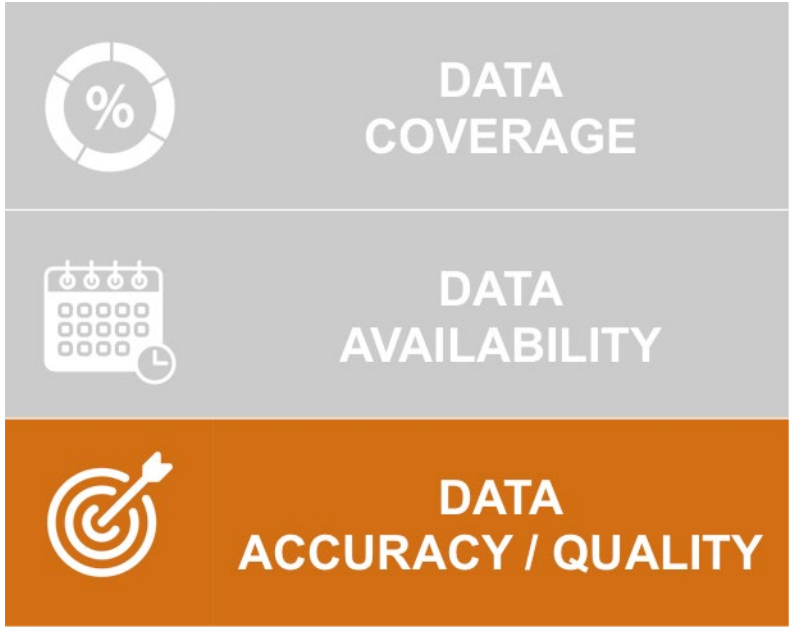
Evaluates whether the data is updated and available on a recurring basis.

- **Good:** Updated annually or more frequently
- **Fair:** Updated less than annually but at least every three years
- **Poor:** Updated less than every three years

DRAFT Risk Indicator Evaluation Tool

STEP 2: DATA FITNESS

This step will evaluate whether the **required data** for each risk indicator meets the following criteria:



Evaluates whether the data reasonably or accurately reflects what the data is meant to measure and/or illustrate.

- **Good:** Credible source, correctly reported
- **Fair:** Credible source, fairly correctly reported
- **Poor:** Dubious source, extensive incorrect reporting

DRAFT Risk Indicator Evaluation Tool (6/6)

STEP 3: COMBINED EVALUATION

This Step combines the evaluations from Steps 1 and 2 to determine if the State Water Board should consider the risk indicator for inclusion in Risk Assessment 2.0.

- **Yes**: Step 1 results must be Excellent or Good; and Step 2 results must be Good for all three criteria.
- **Maybe**: Step 1 results may be Good or Fair; and Step 2 results may be Good or Fair for all three criteria.
- **No**: Step 1 results are Fair or Poor; and Step 2 results are Fair or Poor for all three criteria.
- **Future**: Step 1 results are Excellent or Good, and Step 2 results are Fair and Poor. These will be retained for consideration for future iterations to see if data fitness scores improve.

Example DRAFT Evaluation Tool Results for Version 1.0 Risk Indicators (*see White Paper for full results*)

	STEP 1	STEP 2			
Risk Indicator	**Applicability**	**Data Coverage**	**Data Availability**	**Data Accuracy/ Quality**	**Potential Inclusion in Version 2.0?**
Water outages	Good	Good	Fair	Poor	Maybe
Lead and Copper	Good	Good	Good	Good	Yes
Bacteriological violations or E.coli	Good	Good	Good	Good	Yes
Waterborne illness: current or historical	Excellent	Good	Poor	Poor	Future
Extensive treatment required	Good	Good	Good	Good	Yes
Active standing with California Secretary of State (SoS) status requirements	Good	Poor	Fair	Poor	No

Audience Poll Question 6

Do you think the steps and criteria in the DRAFT Evaluation Tool are clear?

- **Yes**, this looks great!
- **Maybe**, I think this needs some minor changes
- **No**, this needs a re-design

Discussion Topic 3: Draft Risk Indicator Evaluation Tool

- Is there additional criteria that should be considered for the evaluation of potential risk indicators?
- Do you have suggested changes to the criteria that is currently included?

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Anticipated Evaluation Results

- Indicators that score well, but measure the same or similar phenomena
  - We will conduct a thorough analysis of options and present the results of the analysis to the public for feedback.

- Risk indicators that score highly on the Applicability test, but poorly on the data Fitness test.
  - State Water Board will develop long-term strategies to improve data collection and quality to incorporate these indicators into future iterations of the Risk Assessment.

Immediate Next Steps

- Incorporate public feedback to refine **List of Potential Risk Indicators** and **Evaluation Tool**
  - White Paper: https://www.waterboards.ca.gov/safer/calendar.html
  - Submit feedback to: SAFER@waterboards.ca.gov
  - Email Title: Public Water System Risk Assessment
  - Please Submit feedback on White Paper by **08.21.2020**
- Use Tool to evaluate risk indicators
- Share results with the public - September/October webinar workshop
- Determine final list of indicators for Risk Assessment 2.0 and begin exploring thresholds, weighting, and scoring approaches

Discussion Topic 4: Open Q&A

- Comments or Questions?

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Discussion Topic 5: Public Engagement

- How can we improve public engagement on the development of Risk Assessment 2.0?
- Morning Webinar Evaluation Form: https://www.surveymonkey.com/r/9MNCGD6

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