Potential Affordability Indicators

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Remote participation only

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.

Meeting Logistics

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.

Agenda

1. BACKGROUND
2. STEP 1: DAC DETERMINATION RECOMMENDATION
3. STEP 2: AFFORDABILITY ASSESSMENT INDICATOR RECOMMENDATIONS FOR PUBLIC WATER SYSTEMS
4. IDEAS FOR STATE SMALLS & DOMESTIC WELLS
5. NEXT STEPS

BACKGROUND

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."

Why Measuring Affordability Matters

State & Federal Gov.

- Funding eligibilities: Grant vs. Loan
- Prioritization for & access to technical assistance
- Fee waivers

Water Systems

- Impacts rate-setting decisions
- Financial capacity of system
- Ability to pay for current and future needs

Customers

- Quality of life – percent of income spent on drinking water
- Access to safe drinking water

SB 200 Requirements: Annual Affordability Assessment

State Water Board must identify **disadvantaged community water systems**, that have instituted customer charges that **exceed** the **"Affordability Threshold"** established by the State Water Board in order to provide drinking water that meets State and Federal standards.

Needs Assessment Components

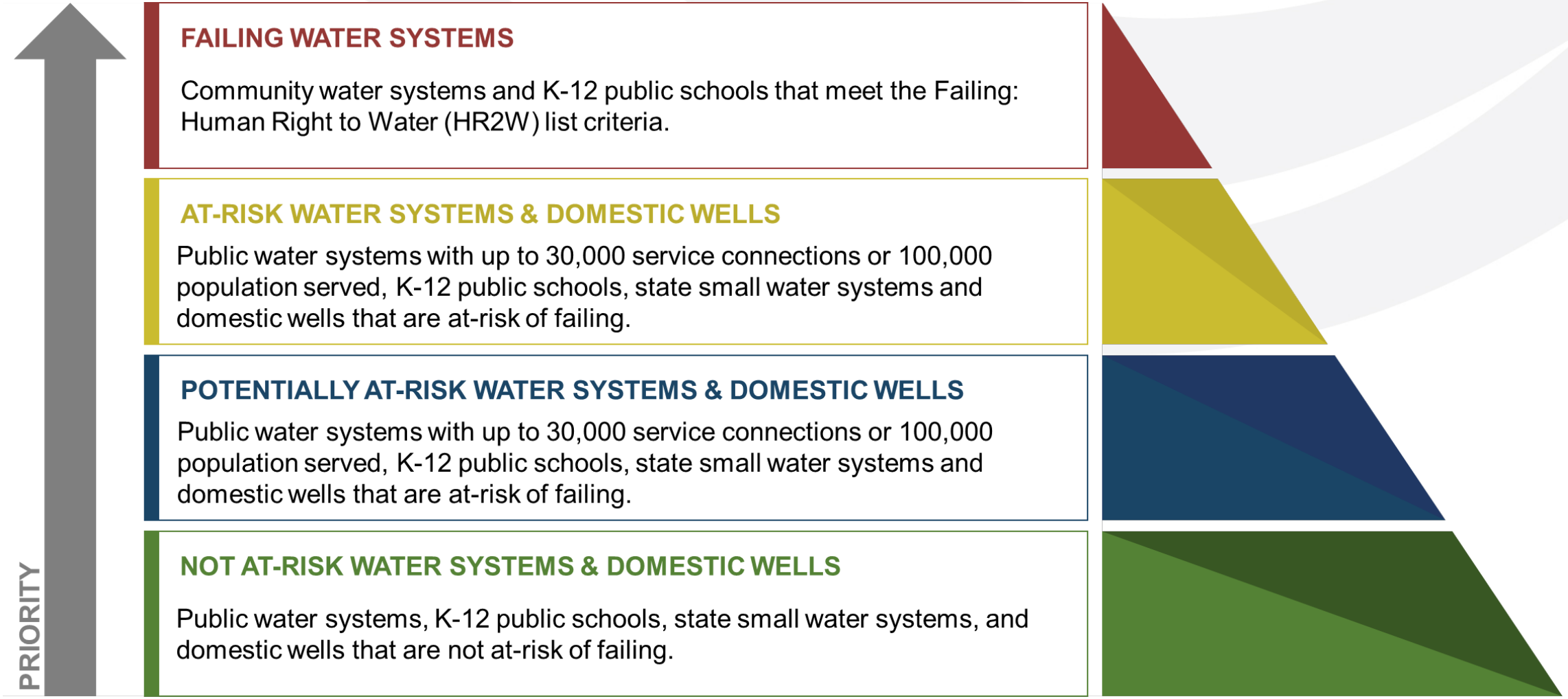
Community and State Small Water Systems & Domestic Wells

Failing & At-Risk Water Systems & Domestic Wells

Disadvantaged Community Water Systems

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

Needs Assessment Identifies SAFER Program Priority Systems



Past Workshops on Affordability Metrics

The State Water Board has hosted workshops on measuring affordability in the Needs Assessment since 2020.

NEEDS ASSESSMENT COMPONENTS	2019	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q3 2021	2022
Risk Assessment: Public Water Systems	■	■	■	■ ■	■		■
Risk Assessment: State Small Water Systems & Domestic Wells	■	■	■	■ ■	■		■
Cost Assessment	■	■	■	■	■ ■		■
Affordability Assessment		■	■ ■	■	■	■	■

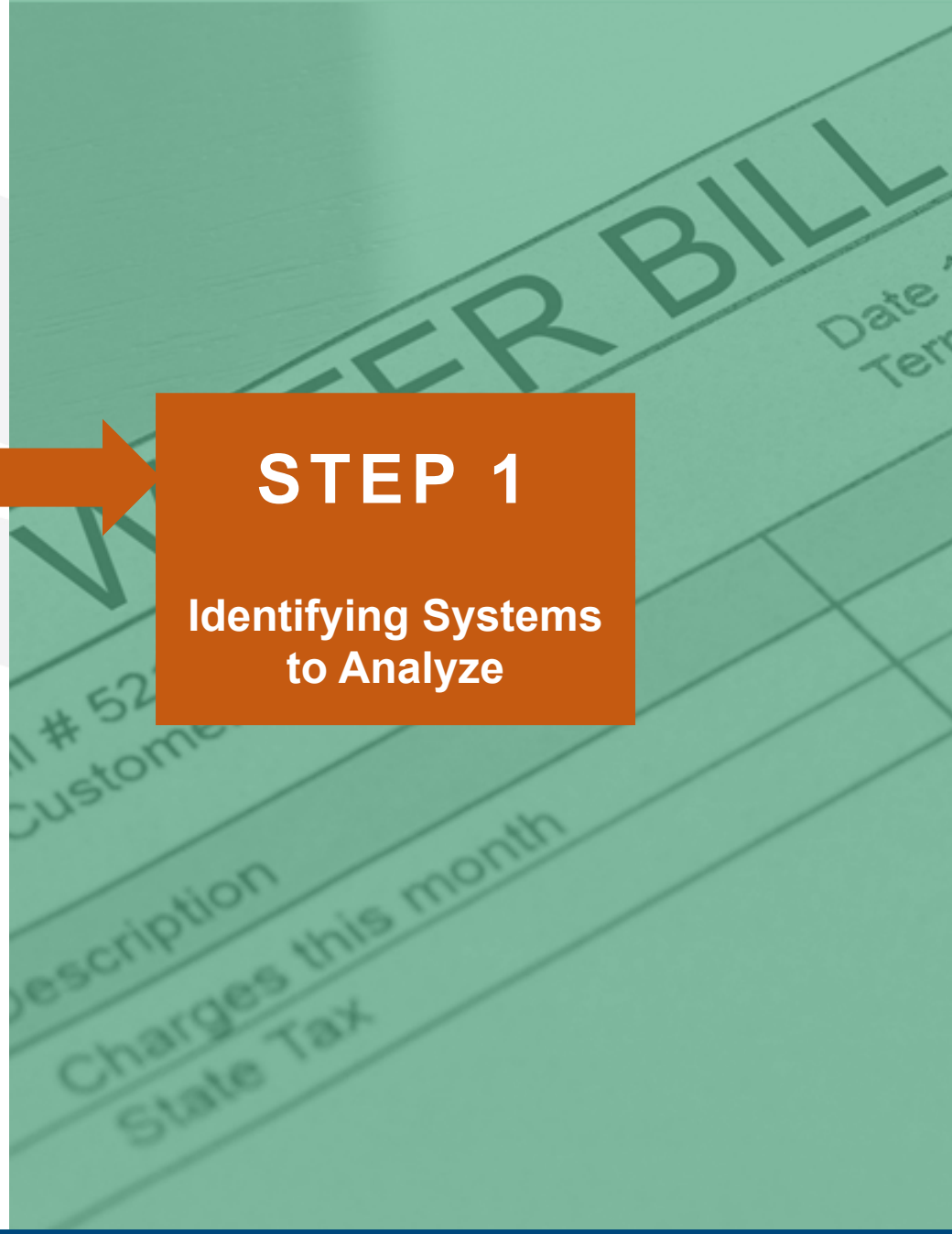
Affordability in the Needs Assessment

CALIFORNIA WATER BOARDS

SAFER PROGRAM

SB 200 Requirements: Annual Affordability Assessment: STEP 1

State Water Board must identify **disadvantaged community water systems**, that have instituted customer charges that **exceed** the **"Affordability Threshold"** established by the State Water Board in order to provide drinking water that meets State and Federal standards.

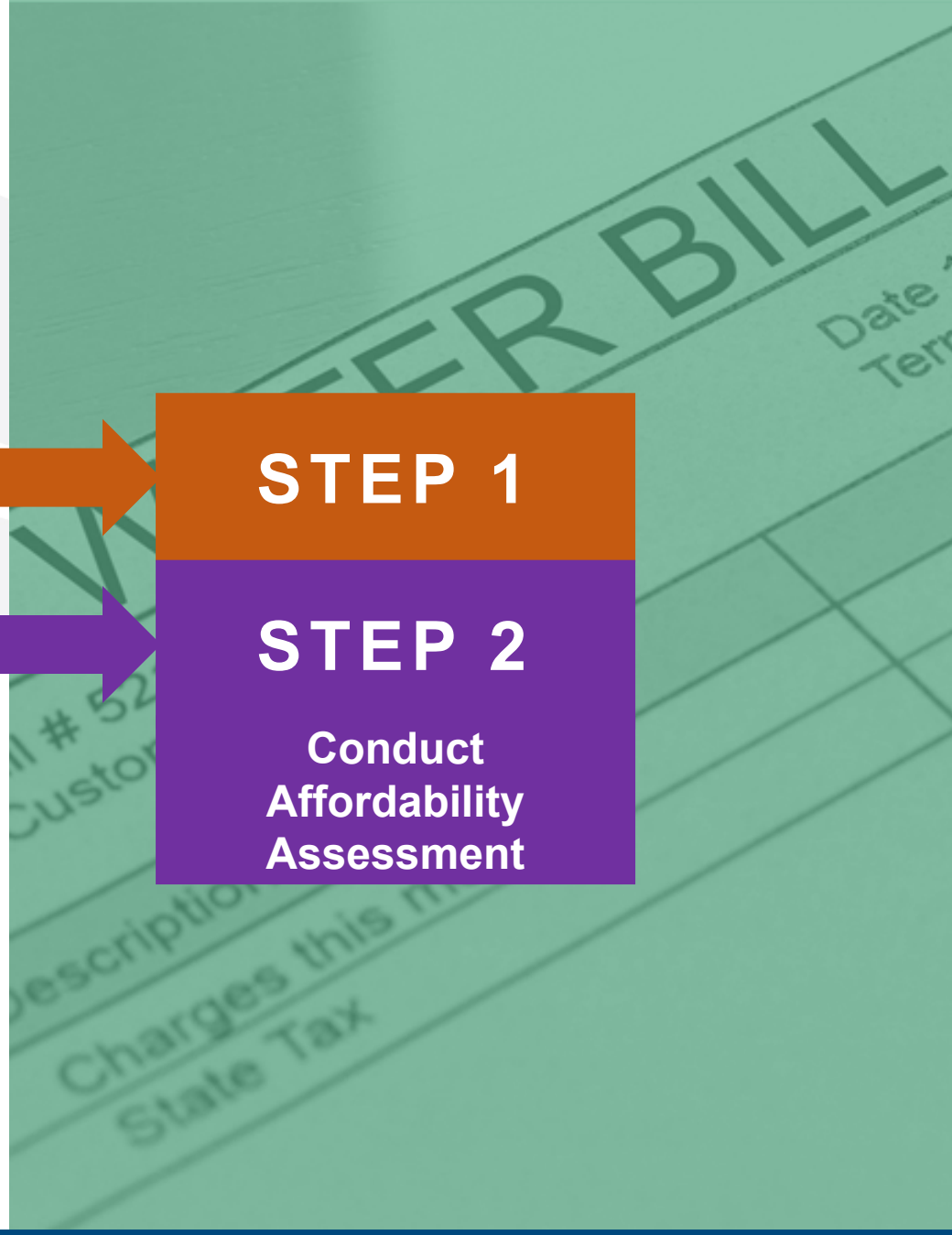


STEP 1

Identifying Systems to Analyze

SB 200 Requirements: Annual Affordability Assessment: STEP 2

State Water Board must identify **disadvantaged community water systems**, that have instituted customer charges that **exceed** the **"Affordability Threshold"** established by the State Water Board in order to provide drinking water that meets State and Federal standards.



STEP 1
DAC Determination

The State Water Board is seeking feedback on the current approach for identifying disadvantaged water systems

STEP 1: Identifying Systems Included in the Affordability Assessment

Disadvantaged (DAC) and Severely Disadvantaged (SDAC) communities are currently identified using U.S. Census **Median Household Income (MHI)** data within a system's service area.

Established thresholds in regulation:

- **DAC**: MHI is less than 80% statewide MHI.
- **SDAC**: MHI is less than 60% statewide MHI.

STEP 1: 2022 Results for Public Water Systems

STEP 1

Identify Systems Serving Disadvantaged Communities

2,868
Community Water Systems Assessed

1,366 (48%)
DAC & SDAC Systems

This means that **52%** of community water systems do not get to Step 2.

STEP 1: Public Feedback from Workshop 1

Stakeholders generally supported the use of county incomes to identify DACs

Stakeholders expressed concern about geographic discrepancies/boundary alignment between water systems and census data

STEP 1: Pros and Cons of MHI

PROS: established in regulation and history of use.

CONS:

- Use of average income data skews metric in high-income service areas where there are communities that struggle to pay their water bills.
- MHI data is missing for some water systems.
- System service area boundary information used to determine MHI is also missing or has quality issues for some systems.

Recommendation for STEP 1: Identify Systems Serving DACs

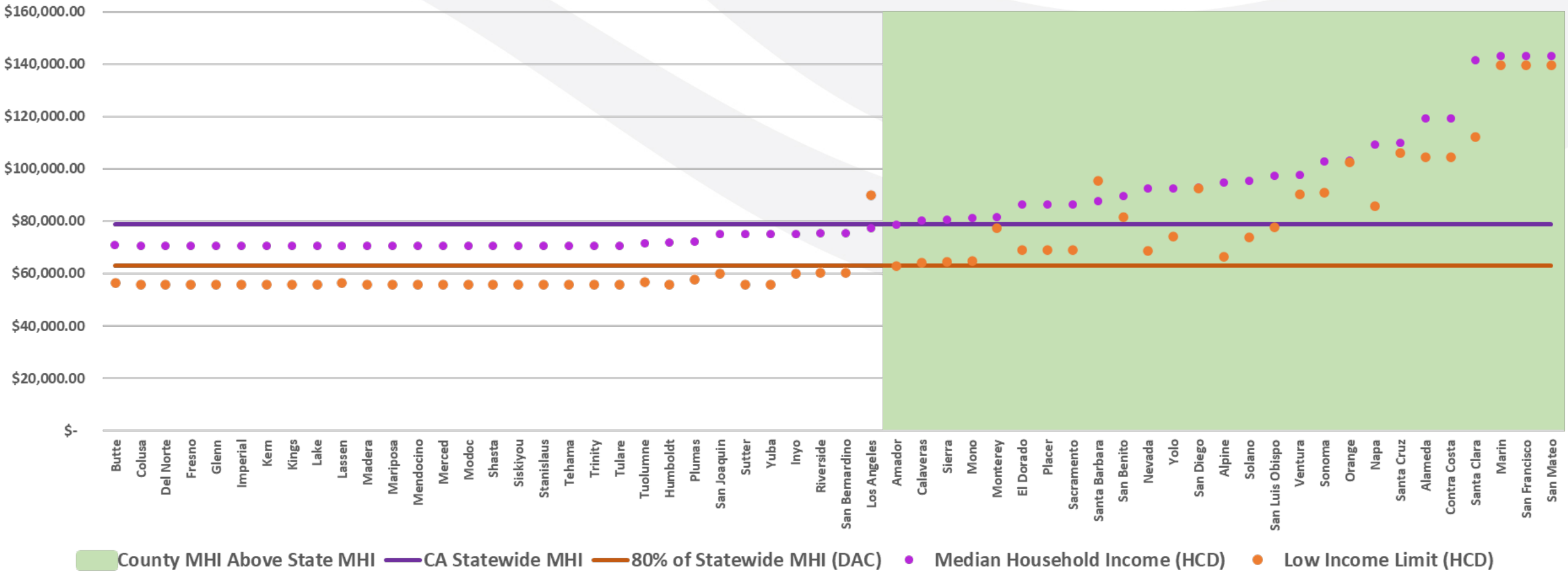
To update the criteria for DAC identification: If a water system's MHI is either below the county low-income level OR below statewide low-income level, it is considered a DAC

US Department of Housing and Urban Development (HUD) and California Housing and Community Development (HCD) release annual county level median income levels (very low-income, low-income and moderate-income limits by county)

- Low-income limits adjusted based on multiple factors, including local cost of housing, fair market rents, etc.
- Used to establish eligibility for certain benefits, like low-income housing placement
- County and state income levels are used to prioritize low-income DACs for Climate Investments (AB1550).

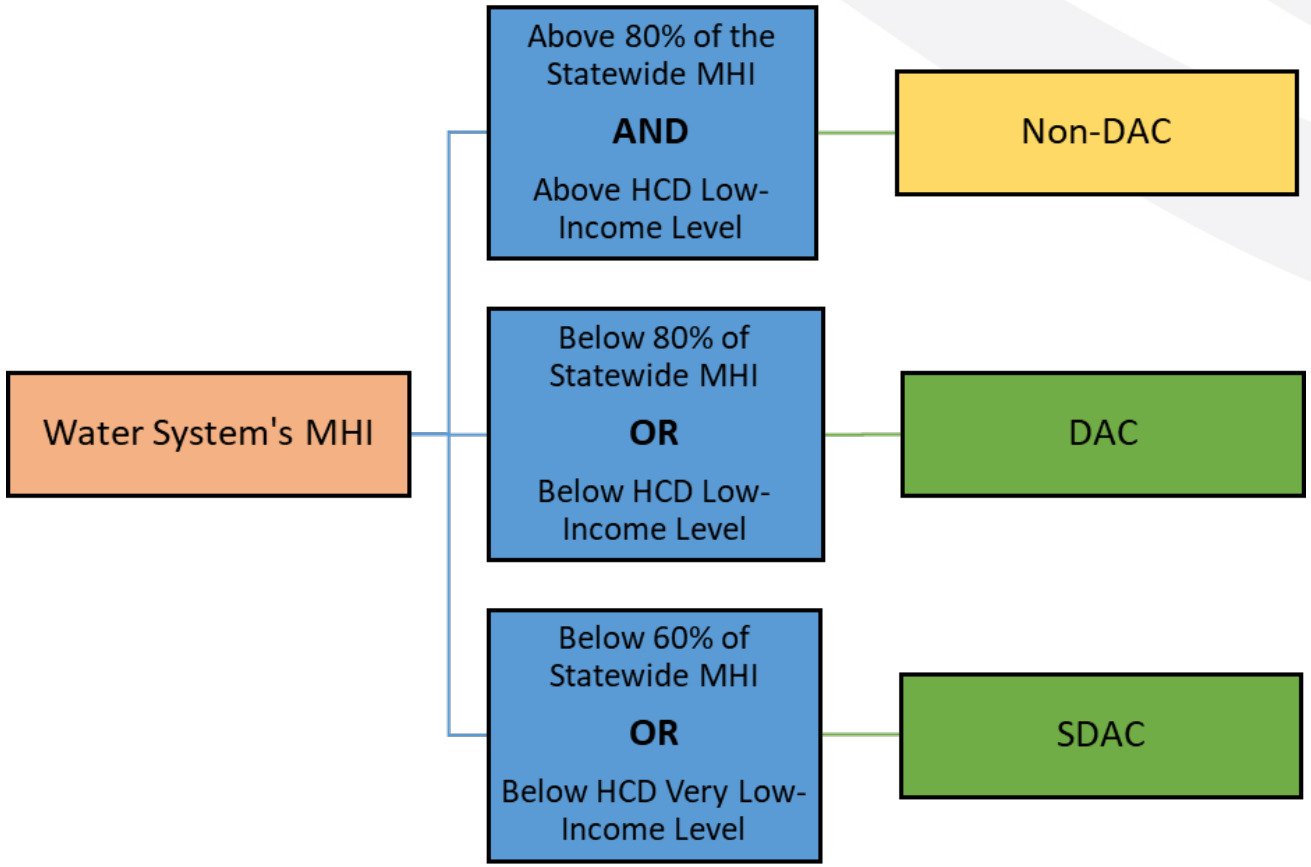
CALIFORNIA AIR RESOURCES BOARD

HCD County Adjusted Income Limits Compared to Statewide MHI

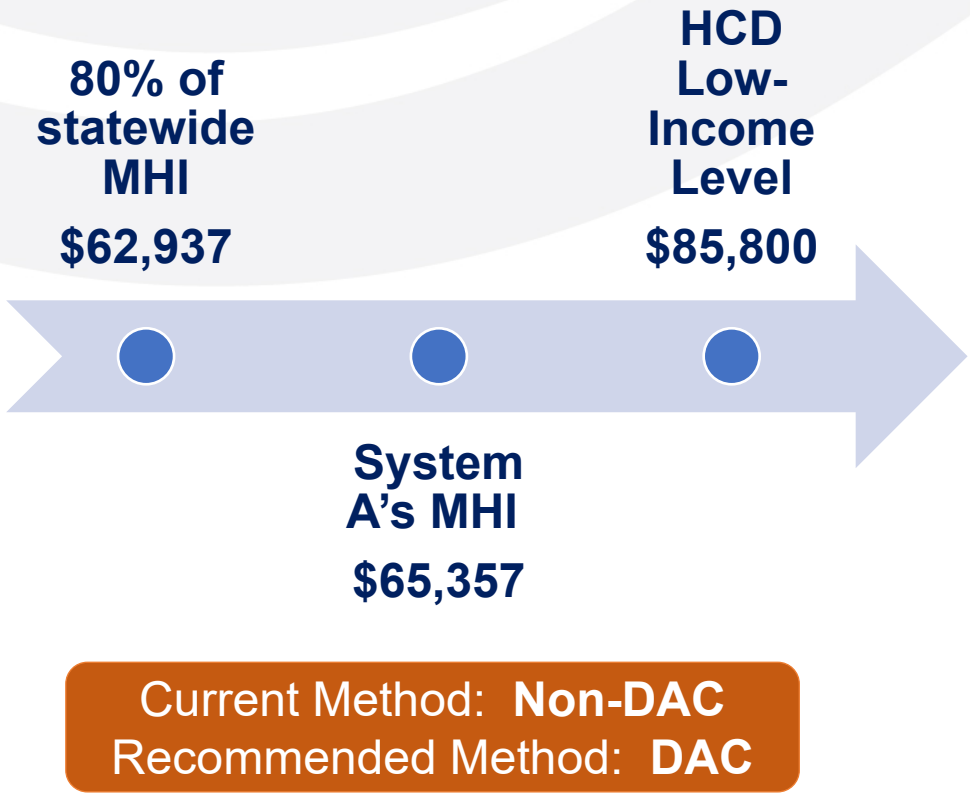


Recommendation for STEP 1: Identify Systems Serving DACs

To update the criteria for DAC identification if they are either below the county low-income level OR below statewide low-income level



Example



Results of Recommended Method for Step 1

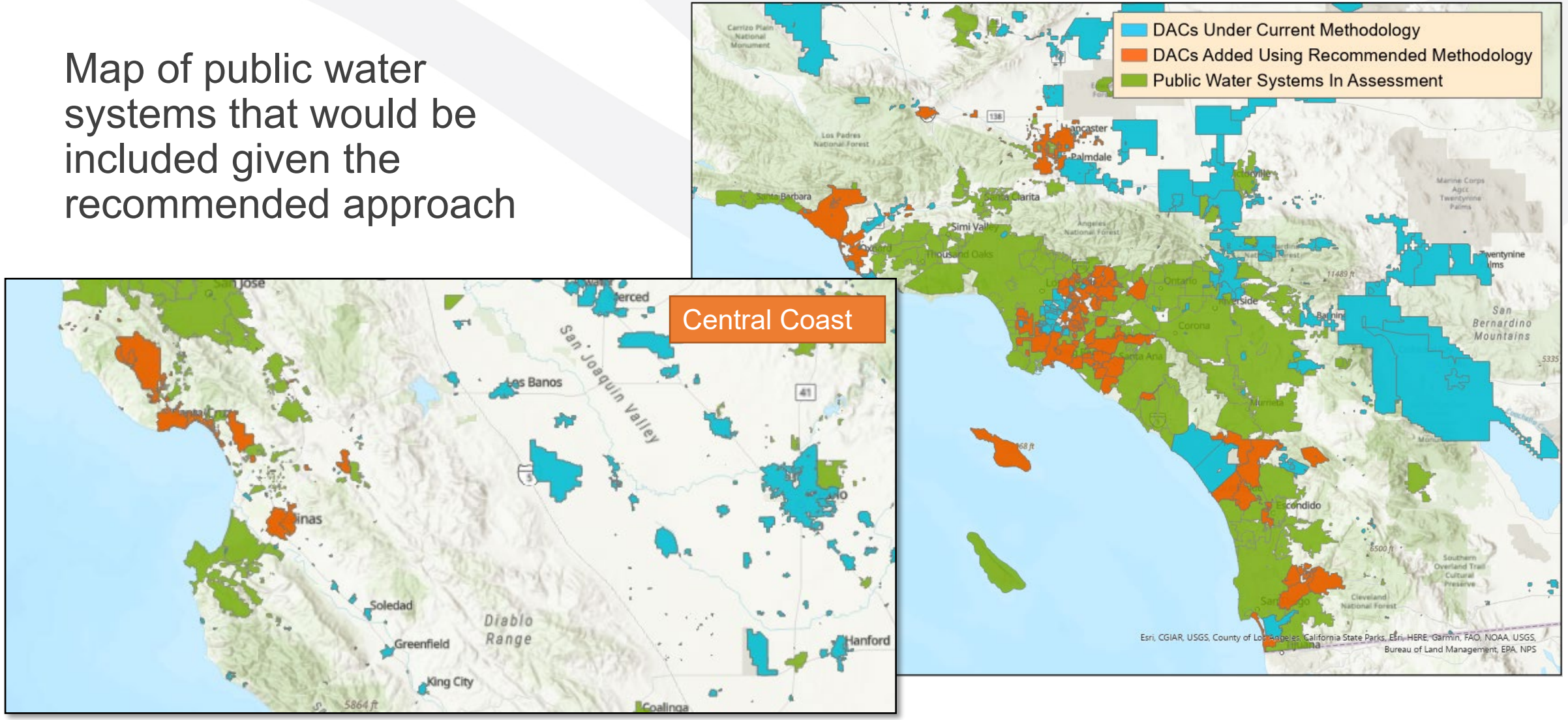
Number of water systems that are DACs, SDACs or Non-DACs for each methodology.

	Current Approach Systems below Statewide 80% MHI	HCD Income Limits Only Systems below HCD Low-Income Levels	Recommended Statewide MHI or HCD Methodology	*Difference* between current and recommended method
DAC or SDAC	1,366	1,576	1,687	+ 321 systems
Non-DAC	1,394	1,184	1,073	- 321 systems
Missing	108	108	10	
Total	2,868	2,868	2,8	

321 additional systems would be considered a DAC using the recommended approach and then included in Step 2.

Recommended Method for Step 1

Map of public water systems that would be included given the recommended approach



Discussion Topic: DAC Determination

Q1. What do you think of identifying water systems serving DACs (Step 1) by applying these additional criteria?

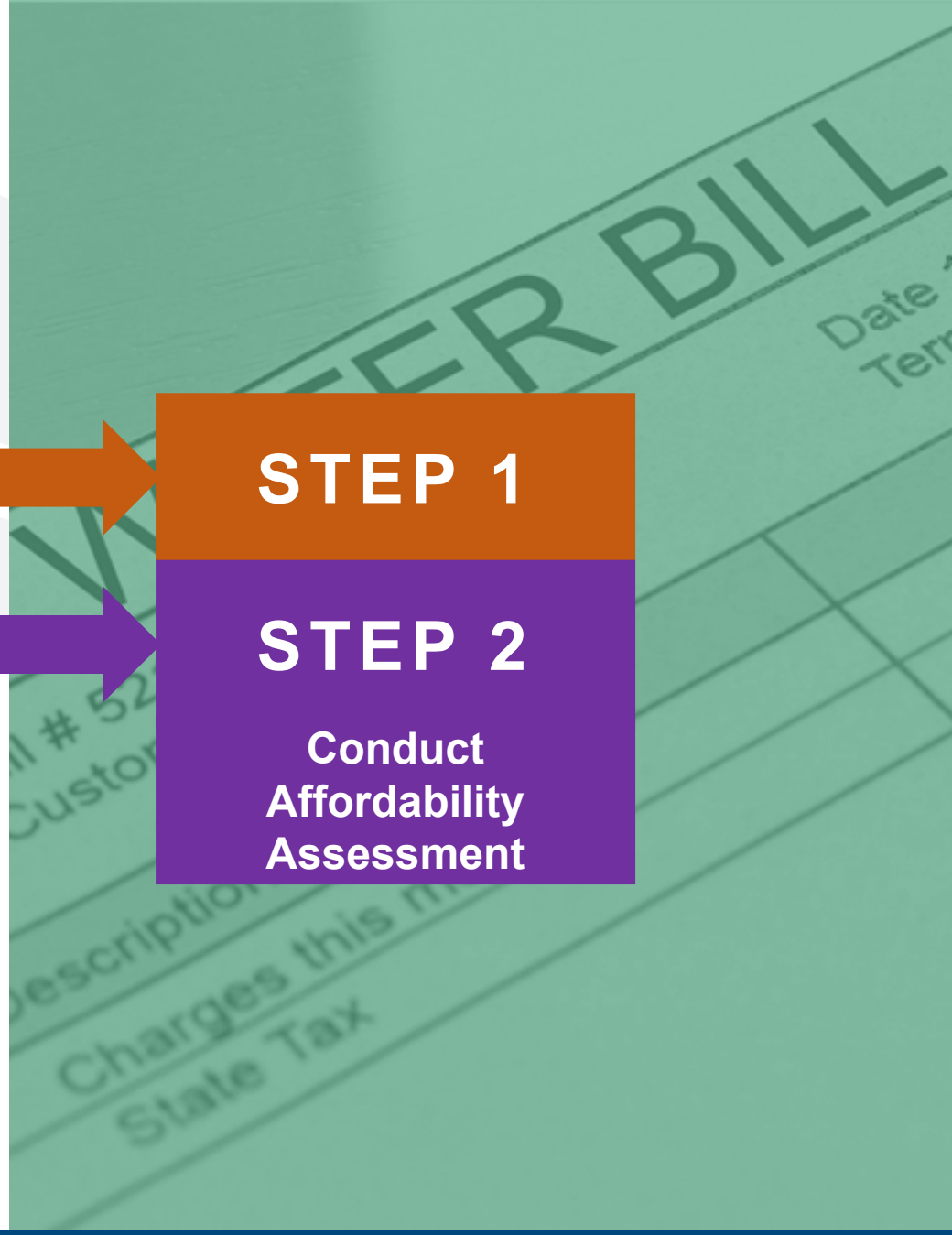
Q2. Are the additional HCD low-income and very-low income thresholds we propose reasonable?

STEP 2
Affordability Assessment

The State Water Board is seeking feedback on existing and new potential Affordability Assessment indicators

SB 200 Requirements:
Annual Affordability Assessment:
STEP 2

State Water Board must identify **disadvantaged community water systems**, that have instituted customer charges that **exceed** the **"Affordability Threshold"** established by the State Water Board in order to provide drinking water that meets State and Federal standards.



Affordability Assessment Methodology: STEP 2

STEP 1

Identify Systems Serving Disadvantaged Communities

STEP 2

Identify Systems Charging Rates that Exceed "Affordability Threshold"

STEP 2: 2022: DAC & SDAC Systems that Charge Customers Directly for Water

2,868
Community Water Systems Assessed

1,366 (48%)
DAC & SDAC Systems

836 (29%)
DAC/SDAC Systems that **Charge** for Water

2,032 (71%)
Community Water Systems **Excluded**

Public Water System Affordability Indicators Over Time

2020	2021	2022
% Median Household Income	% Median Household Income	% Median Household Income
	Extreme Water Bill	Extreme Water Bill
	% Shut-Offs	~~% Shut-Offs~~
		% of Residential Arrearages
		Residential Arrearage Burden

% Shut-Offs: Removed due shut-off moratorium Mar. 2020 – Jan. 2022.

Arrearage Data: new indicators utilizing 2021 Drinking Water Arrearage Payment Program data. One-time data use from funding program to supplement % Shut-Off data.

Nexus of Affordability Definitions

(1) **Household Affordability**: The ability of individual households to pay for an adequate supply of water.

(2) **Community Affordability**: The ability of households collectively within a community to pay for water services to financially support a resilient water system.

(3) **& (4) Water System Financial Capacity:** The ability of the water system to financially meet current and future operations and infrastructure needs to deliver safe drinking water. The financial capacity of water systems affects future rate impacts on households.

Affordability Indicator Categories Household and Community

% Residential Shut-offs for Non-Payment

% Residential Arrearages (customer debt)

% Median Household Income

Extreme Water Bill

Arrearage Burden

STEP 2: Public Feedback from Workshop 1

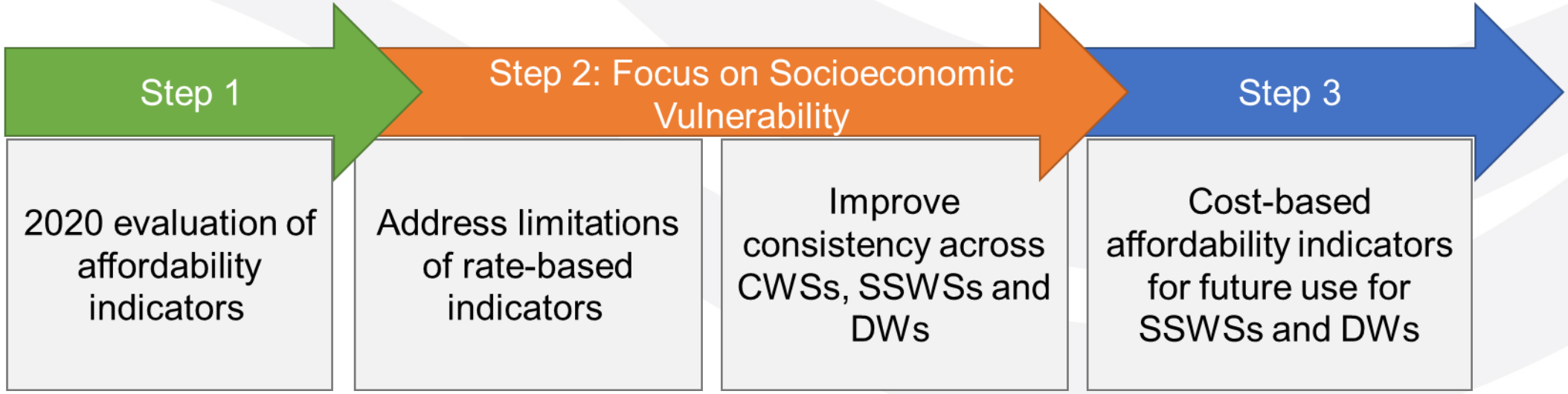
Use of **ONE** vs. **MULTIPLE** affordability indicators?

Use of **HOUSEHOLD** and/or **COMMUNITY** affordability indicators?

Use of **RATE-BASED** and/or **NON-RATE-BASED** affordability indicators?

Want consistent and quantitative indicators	Prefer community level metrics for affordability	Concerned about the use of shutoff data
Request removal or modification of the Extreme Water Bill indicator	Asked about the viability of using existing CPUC affordability indicators	Expressed concern over %MHI indicator, which may not include multi-family residential households

STEP 2: Affordability Indicator Re-Evaluation



35 indicators were evaluated using the following criteria.

- ❑ Account for cost differences and varying levels of income.
- ❑ Represent affordability burden for low-income families.
- ❑ Represent a useful geographic scale.
- ❑ Be relatively easy to explain.
- ❑ Have ample data coverage, quality, and availability.
- ❑ Aim to capture affordability at a household level and community level.

STEP 2: Affordability Indicator Re-Evaluation

2023
% Median Household Income
Extreme Water Bill
~~% of Residential Arrearages~~
~~Residential Arrearage Burden~~
Poverty
Housing Burden

%MHI is an established metric and industry threshold. These indicators provide a direct measurements of affordability risk for CWSs.

Arrearage data was a collected one-time in the 2021 Drinking Water Arrearage Payment Program, which ended in June 2021. In the future, State Water Boards should collect this data (along with % shut-off data) in the EAR.

The combination of these two indicators would create a more comprehensive picture of socioeconomic vulnerability by accounting for poorer, low-income communities and for the varying levels of income and cost burden across California.

Public Water System | Proposed Affordability Assessment Indicators

2020	2021	2022	2023
% Median Household Income	% Median Household Income	% Median Household Income	% Median Household Income
	Extreme Water Bill	Extreme Water Bill	Extreme Water Bill
	% Shut-Offs	~~% Shut-Offs~~	~~% of Residential Arrearages~~
		% of Residential Arrearages	~~Residential Arrearage Burden~~
		Residential Arrearage Burden	Poverty
			Housing Burden

Community Affordability: Extreme Water Bill

Measures a system's residential customer charges for 6 HCF compared the state-wide average. Identifies communities that are paying much higher rates.

- Utilized thresholds: 150% (min. threshold) and 200% (max. threshold) of statewide average drinking water customer charges at the 6 hundred cubic feet level.

- **PROS**:
  - Identifies water systems that are charging customers high rates for drinking water.
  - May identify systems that could struggle to raise rates in the future.

- **CONS**:
  - Does not account for regional or technical factors that may lead to higher rates.
  - Does not account for "ability" to pay – customer base may be able to afford higher rates. Does not mean they are not able to pay their bills

Community Affordability: % Median Household Income

This indicator measures the annual system-wide average residential water bill for six hundred cubic feet (HCF) per month relative to the annual Median Household Income (MHI) within a water system's service area.

- Utilized thresholds: 1.5% (min. threshold) and 2.5% (max. threshold)

- **PROS**:
  - Data is available for most water systems (water rates and MHI).
  - Established affordability metric and industry thresholds.

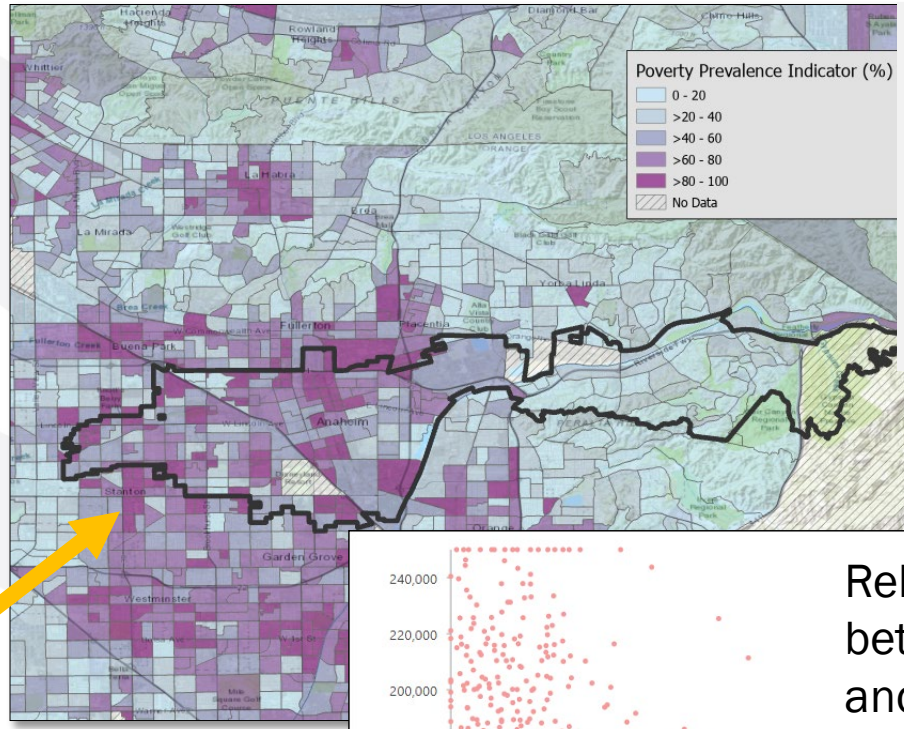
- **CONS**:
  - Use of average income data skews metric in high-income service areas where there are communities that struggle to pay their water bills.

Limitations of %MHI

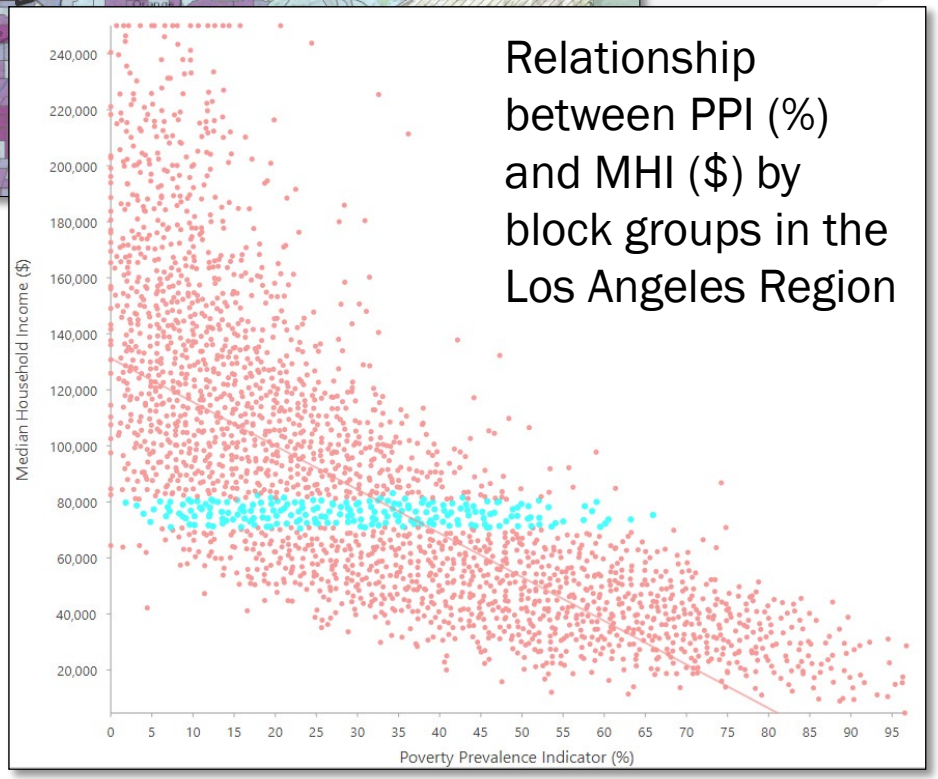
Water systems that do not charge their customers directly for water services do not receive a score for the %MHI indicator (or Extreme Water Bill). (530 DAC CWSs)

Poverty rates can vary significantly within a single CWS; %MHI may not adequately reflect affordability in lower-income neighborhoods in the same CWS as much as higher-income areas

Places with similar MHI may have very different poverty levels. Using MHI alone does not capture the prevalence of households in poverty in a community.



Poverty level within the boundary of City of Anaheim Public Utilities



Relationship between PPI (%) and MHI ($) by block groups in the Los Angeles Region

NEW Community Affordability: Housing Burden

This indicator (Housing Burdened Low-Income Households) is calculated as the percent of households in a census tract that are both low income (making less than 80% of the HUD Adjusted Median Family Income) and severely burdened by housing costs (paying greater than 50% of their income to housing costs).

Source: 2014-2018 HUD Comprehensive Housing Affordability Strategy (CHAS)

PROS:

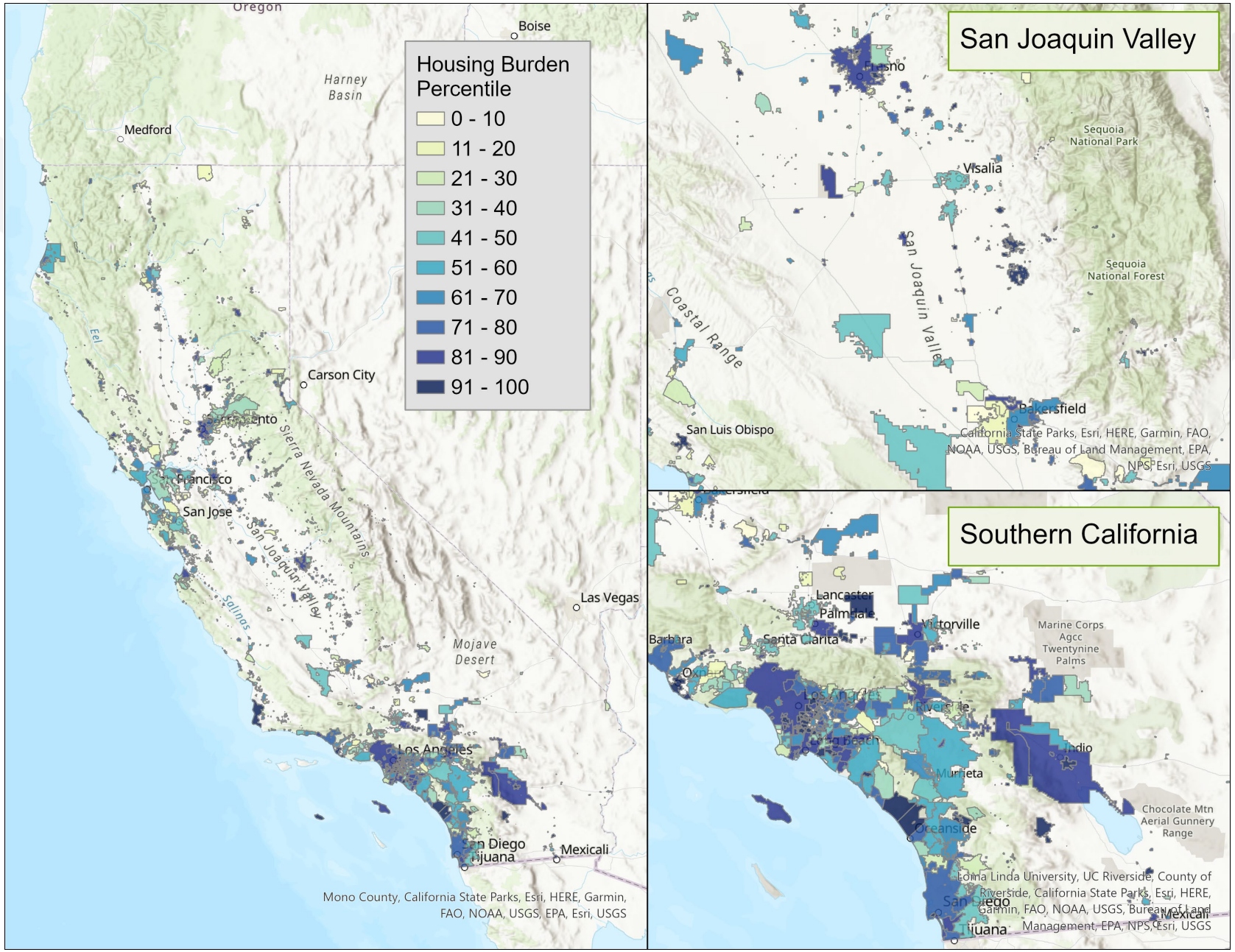
- Incorporates housing/rent cost (especially advantageous when rent absorbs the cost of water and families do not receive water bills directly)
- Considers low-income households
- Reflects variation in the basic cost of living across regions of California

- **CONS**:
  - At the census tract scale (vs block group)

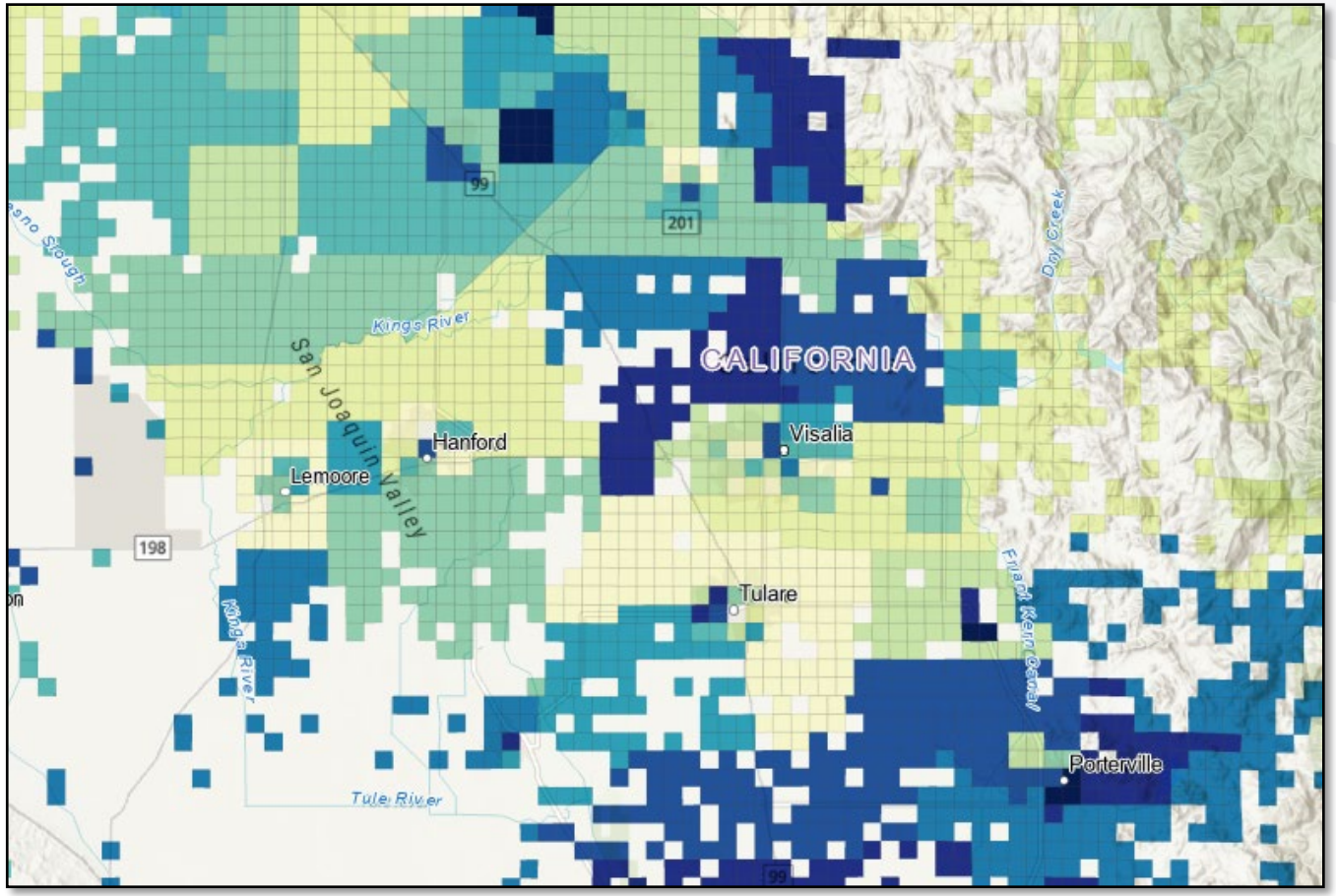
Map of Housing Burden for Public Water Systems

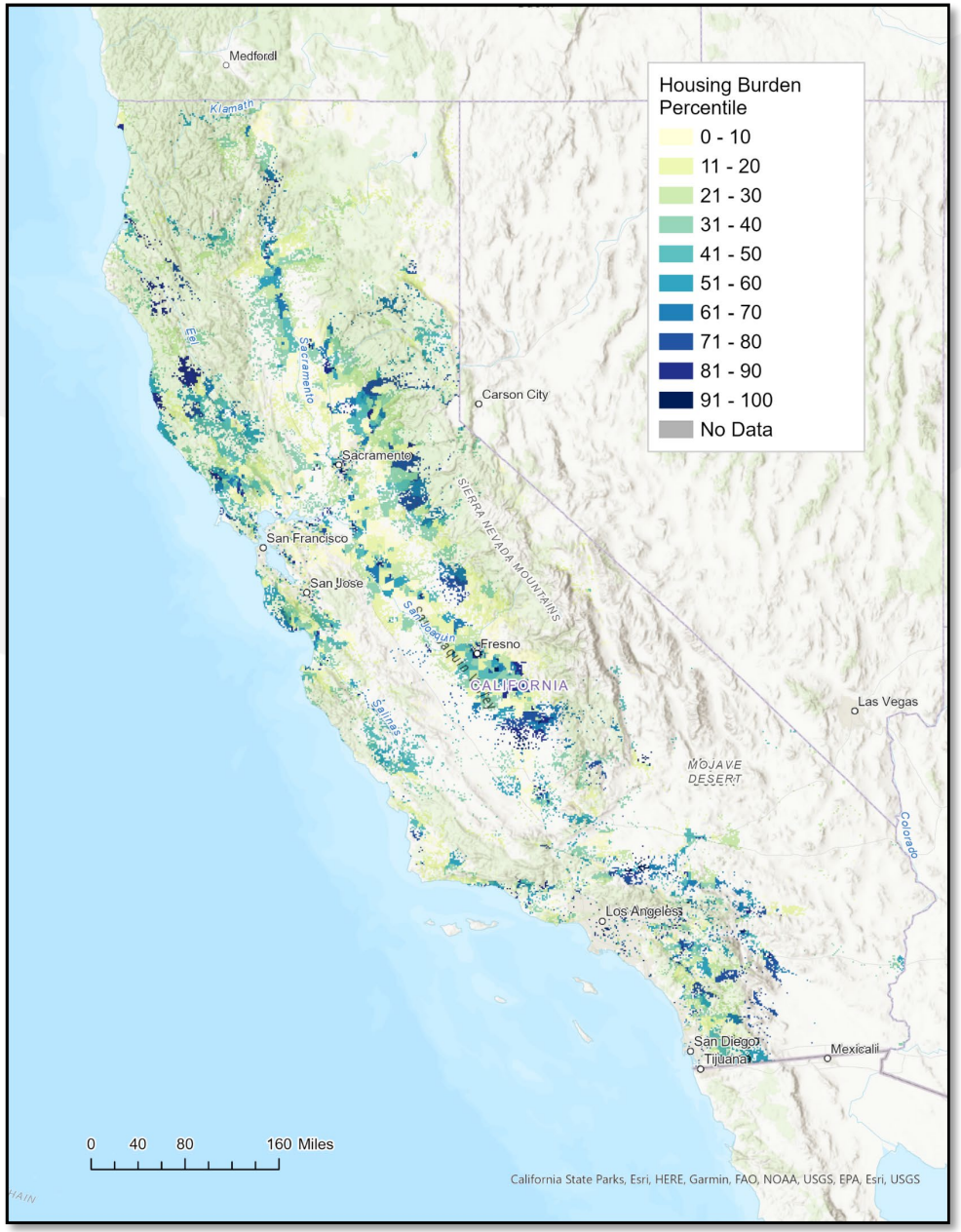
Method

The percentage of a low-income households severely burdened by housing costs was area-weighted to public water system boundaries. System scores were ranked and assigned percentiles.



Housing Burden





NEW Community Affordability: Poverty Prevalence Indicator (PPI)

This indicator measures the percentage of a population that lives at or below 200% the Federal Poverty Level (FPL). This measurement indicates the degree to which relative poverty is prevalent in the community.

Source: 2015-2019 US Census, American Community Survey (ACS)

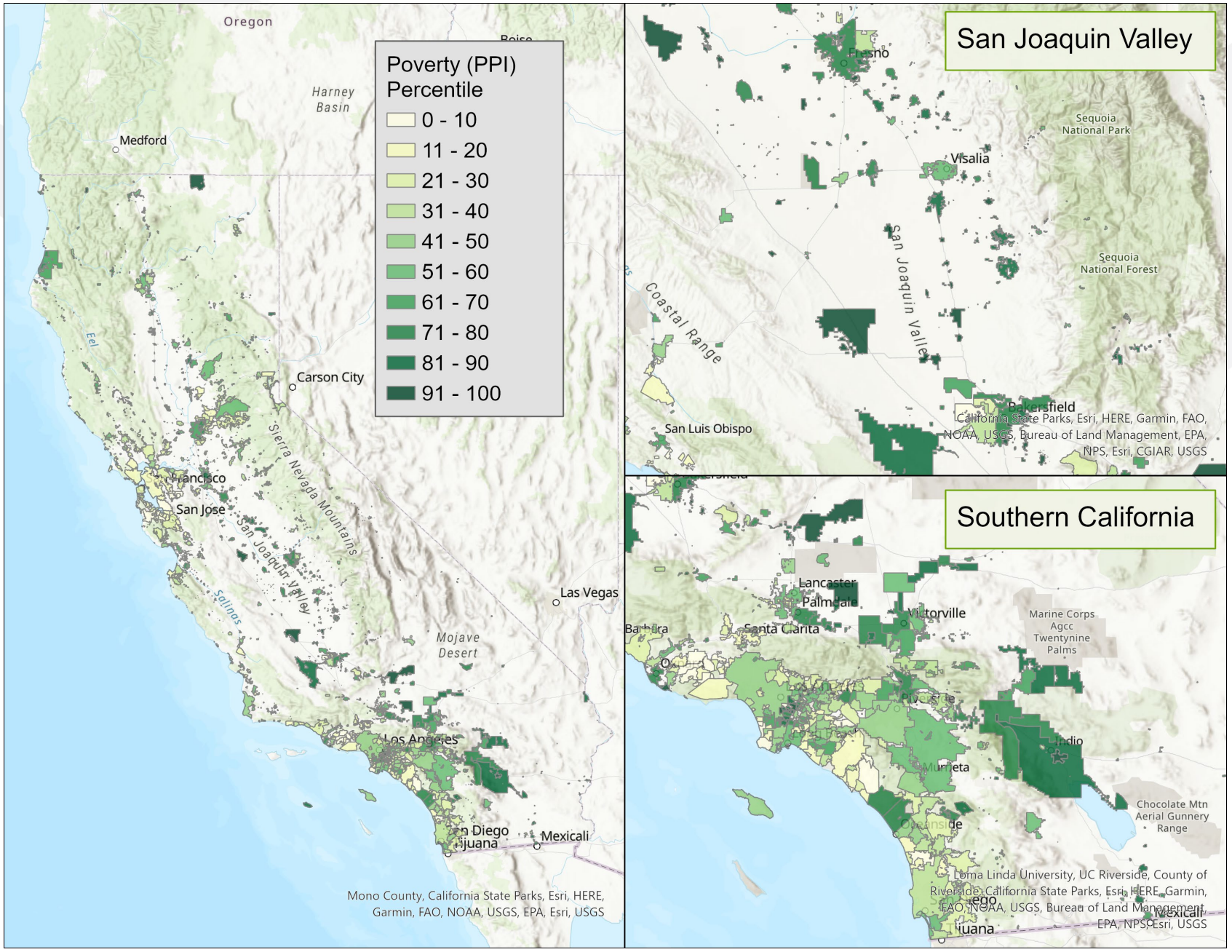
- **PROS**:
  - Commonly used in California in multiple tools to evaluate poverty
  - Accounts for the poorer, low-income communities

- **CONS**:
  - Does not account for housing or other regional cost differences

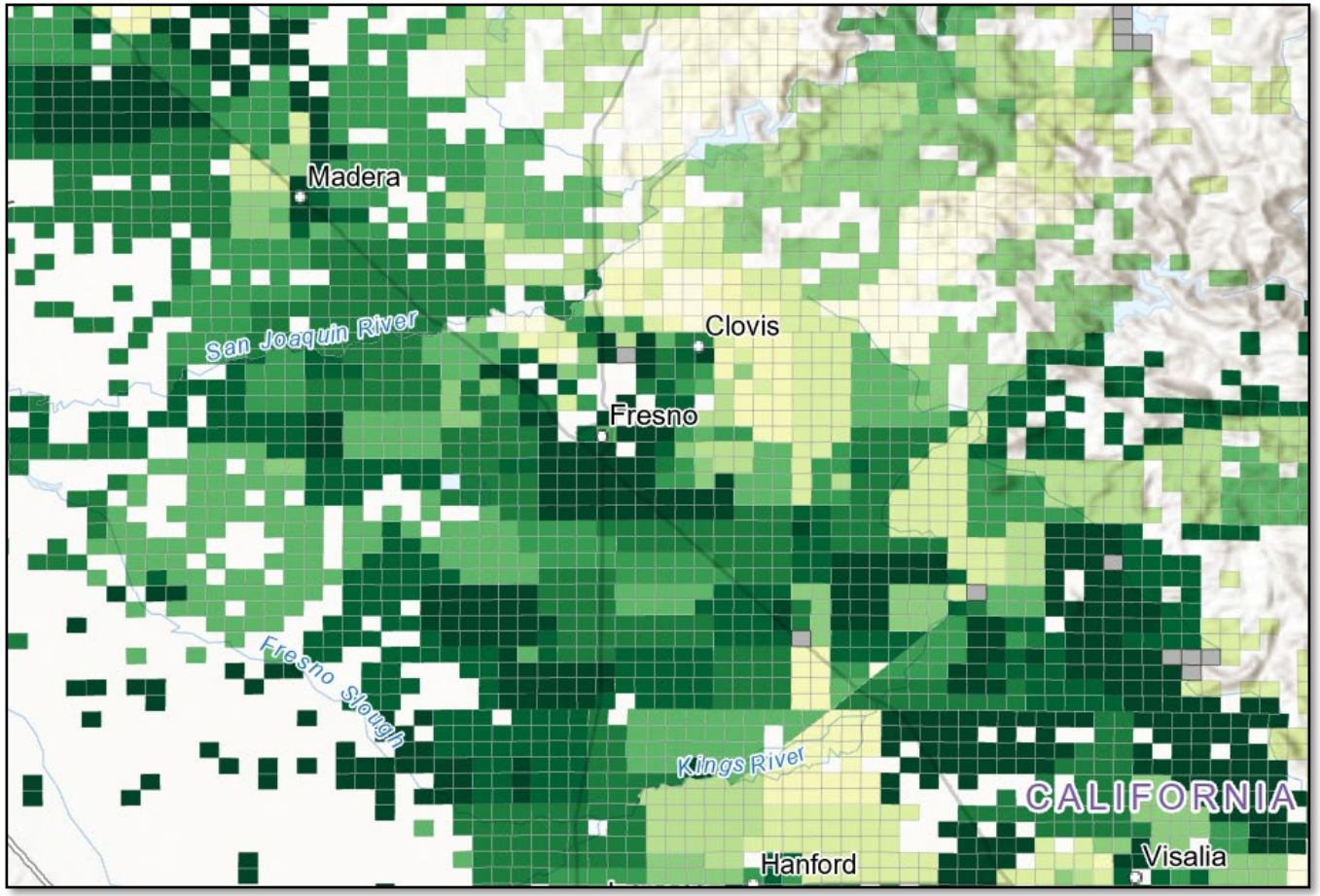
Map of Poverty for Public Water Systems

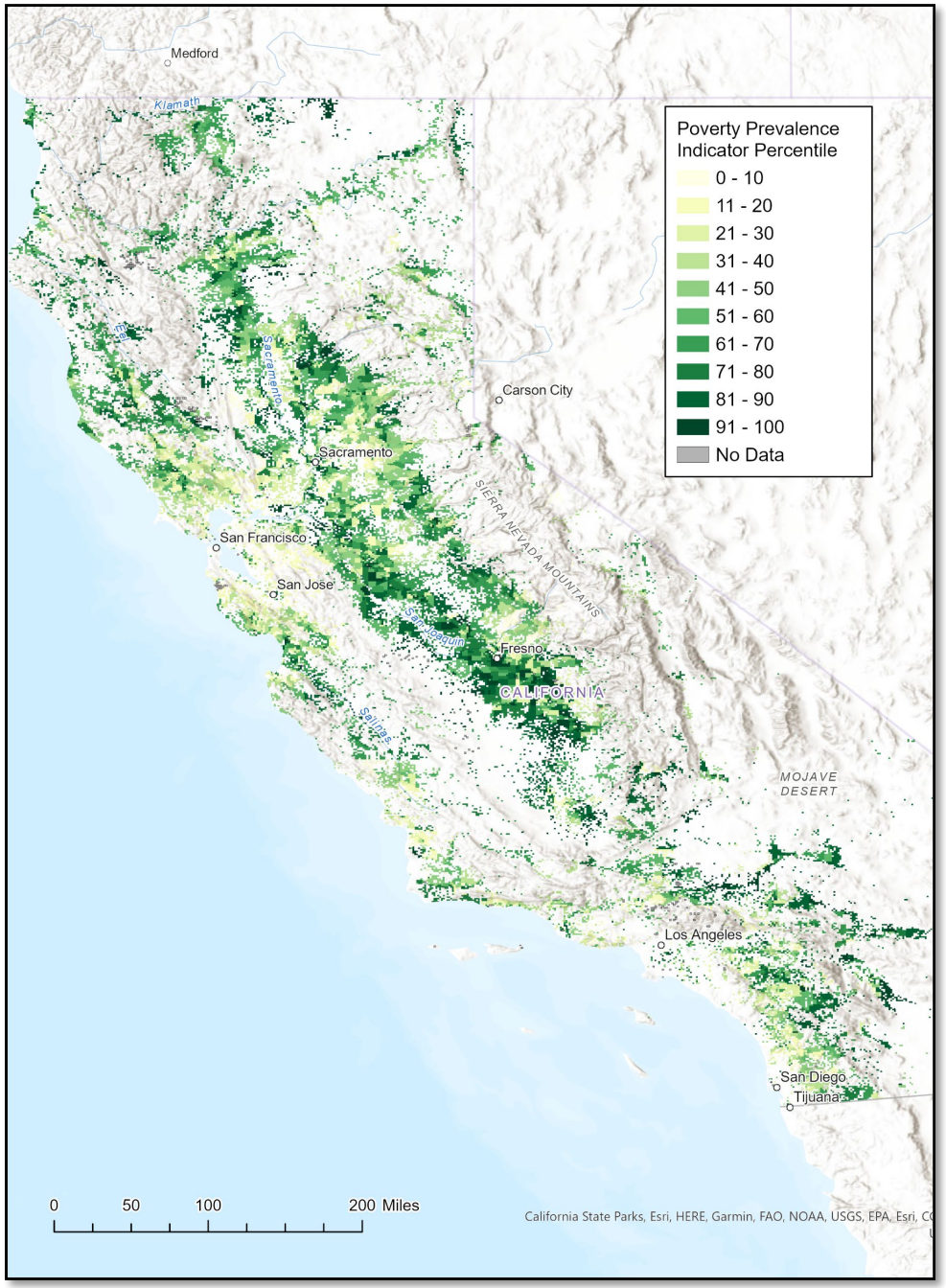
Method

The percentage of a population that lives at or below 200% the FPL was area weighted to public water system boundaries. System scores were ranked and assigned percentiles.



Poverty Prevalence Indicator (PPI)





STEP 2: Options for Including Both Housing Burden and Poverty

1. Combine two socioeconomic metrics into a single indicator
   %MHI | Extreme Water Bill | Combined Poverty and Housing Burden

2. Consider two socioeconomic metrics as separate affordability indicators
   %MHI | Extreme Water Bill | Poverty | Housing Burden

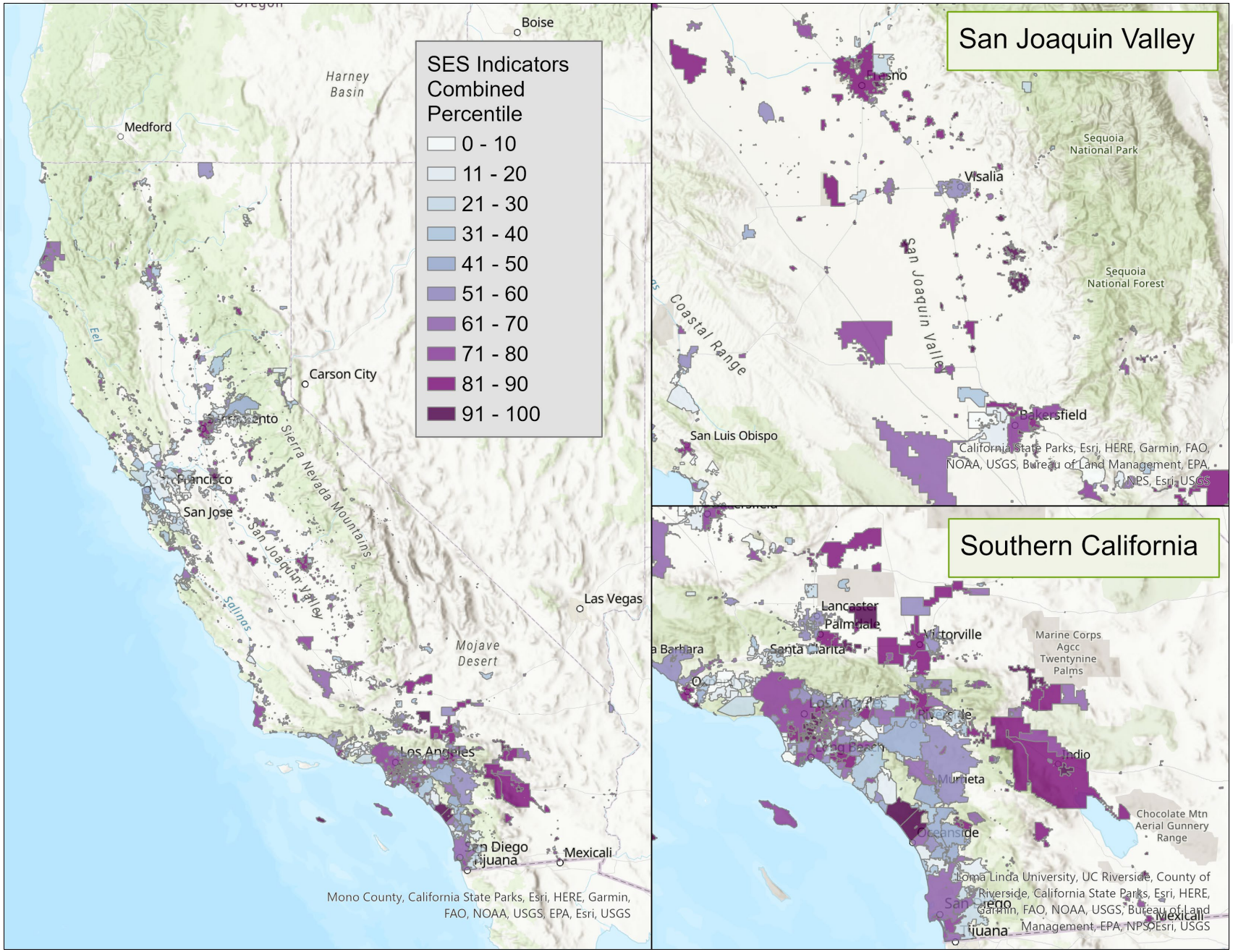
Recommendation

- Combine Poverty and Housing Burden indicators into one SES component
- This will allow the rate-based indicators (%MHI and Extreme Water Bill) to contribute greater weight in the final score.

Example Methodology

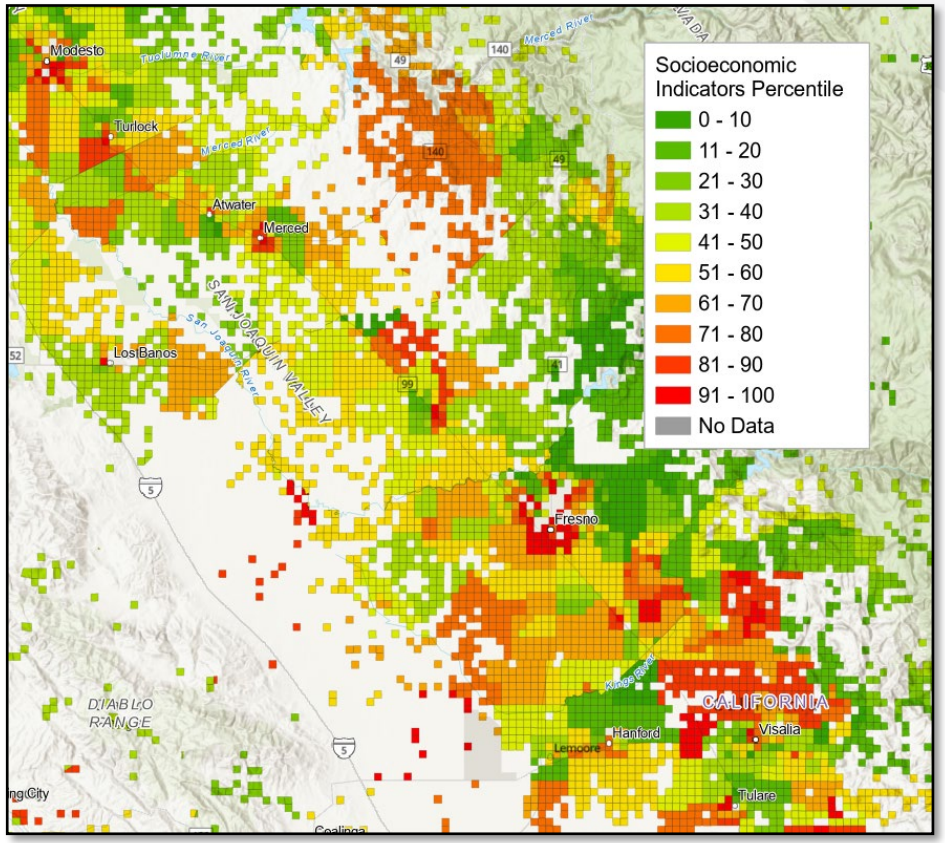
Map of Combined PPI and Housing Burden Indicators

Percentile scores from PPI and Housing Burden indicators were averaged and then re-ranked and assigned percentile scores.

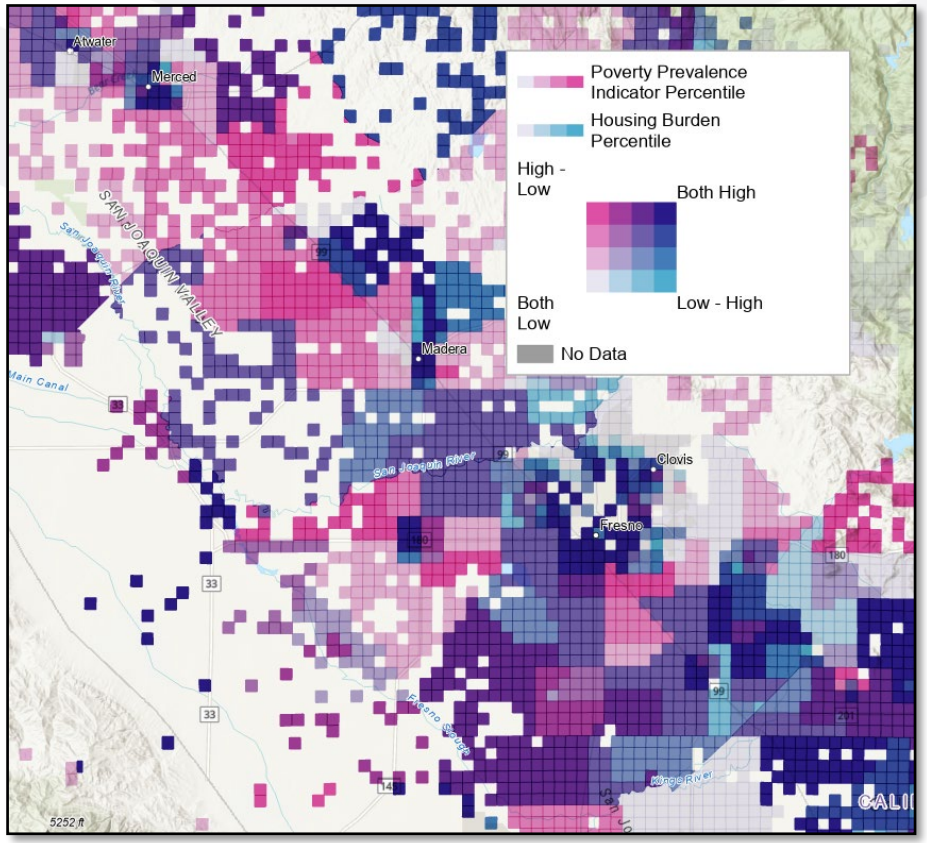


Two ways to combine Housing Burden and Poverty
[converted census boundaries to PLSS sections with known SSWSs and DWs]

Distribution of combined PPI and Housing Burden indicator percentiles in the Central Valley



A bivariate choropleth map of PPI and Housing Burden in the Central Valley



Discussion Topics: STEP 2: Affordability Indicators

Q1: Do the proposed community socioeconomic indicators contribute to a better understanding of drinking water affordability for PWSs? For SSWS/DW communities?

Q2: Do you think it is valuable to utilize similar community socioeconomic indicators for both PWSs as well as for SSWS/DW communities?

Q3: How should the community socioeconomic indicators be used in establishing the affordability threshold?

Next Steps

Scoring & Threshold Setting – Next Webinar

Affordability Workshop 3 will explore **scoring** and **threshold** options for:

- Individual affordability indicators; and
- The full Affordability Assessment

Developing an "Affordability Threshold"

Current Affordability Assessment methodology:

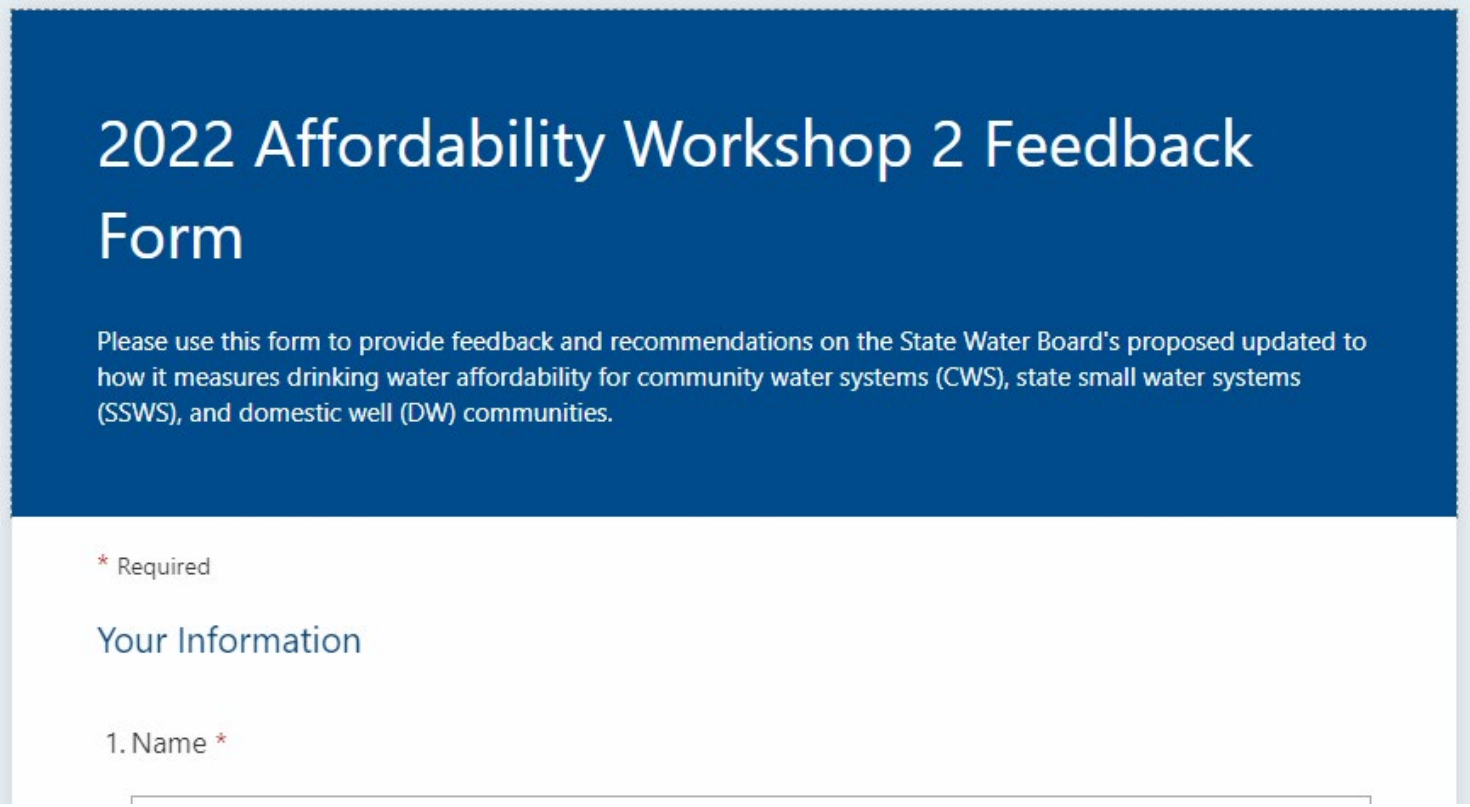
1. Applies thresholds to each affordability indicator.
2. Identifies systems exceeding multiple indicator thresholds. Systems are assigned an "Affordability Burden" of High, Medium, Low, or None.

HIGH	MEDIUM	LOW	NONE
3 or **4** Indicator Thresholds Exceeded	**2** Indicator Thresholds Exceeded	**1** Indicator Threshold Exceeded	**0** Indicator Thresholds Exceeded

Feedback Requested

Complete online survey about discussion topics discussed today: https://bit.ly/3Bw4kyZ

Public Feedback due **October 20, 2022**



Future 2022-23 Affordability Workshops

11/01/2022 Workshop 3: Affordability Assessment Methodology & Threshold Setting

- Explore options for affordability indicator thresholds and the affordability assessment.
- Explore options for incorporating affordability indicators into the risk assessment for state small water systems and domestic wells.
- Register: https://bit.ly/3zhwtbQ

TBD (Dec.) Workshop 4: 2023 Needs Assessment Workshop

- Identify how recommendations from Workshops 1-3 will be incorporated into the 2023 and future Needs Assessments.


Thank You
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