



Affordability Workshop 3

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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 & SUMMARY OF FEEDBACK FROM WORKSHOP 2
- 2 PROPOSED CALCULATION METHOD & THRESHOLDS OF NEW INDICATOR
- 3 RECOMMENDED THRESHOLD SCORING & WEIGHT FOR NEW INDICATOR
- 4 AFFORDABILITY ASSESSMENT METHOD & THRESHOLD OPTIONS
- 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

A graphic for Risk Assessment featuring a white line-art icon of a gauge with a needle and a warning triangle with an exclamation mark. The background is a dark blue-tinted image of a water tap and a glass of water.

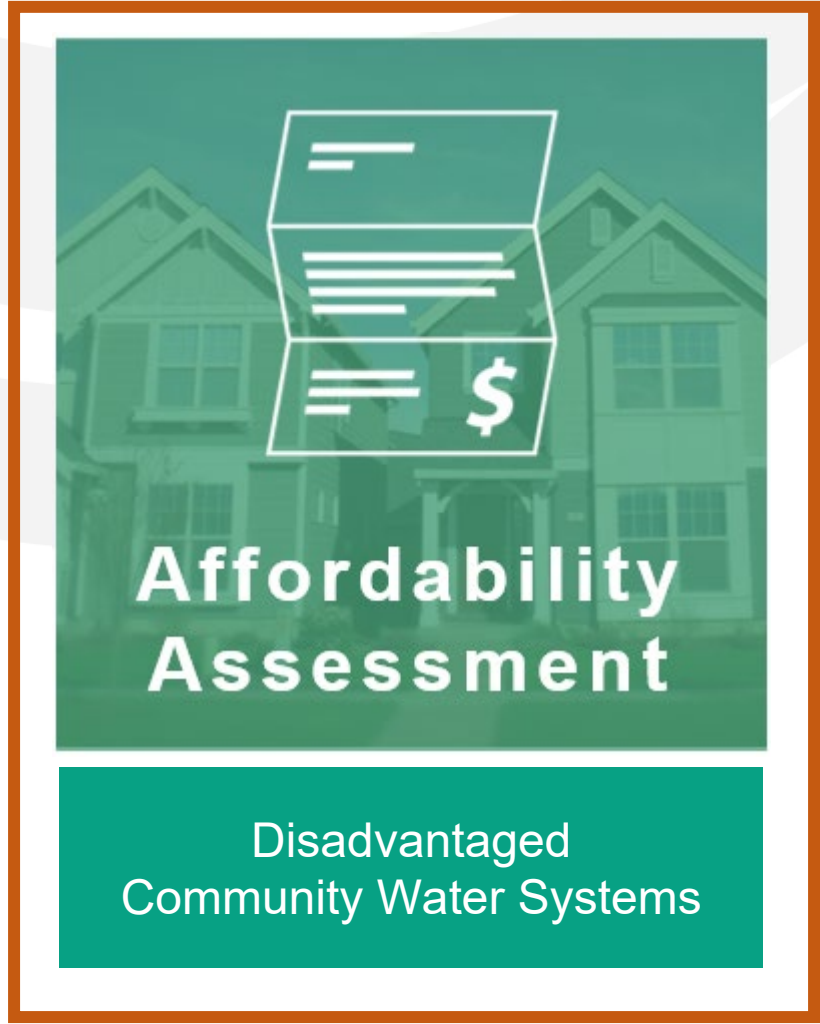
Risk Assessment

Community and State Small Water Systems & Domestic Wells

A graphic for Cost Assessment featuring white line-art icons: a warning triangle with an exclamation mark, a dollar sign inside a circle, and four downward-pointing arrows. The background is a teal-tinted image of a water pipe.

Cost Assessment

Failing & At-Risk Water Systems & Domestic Wells

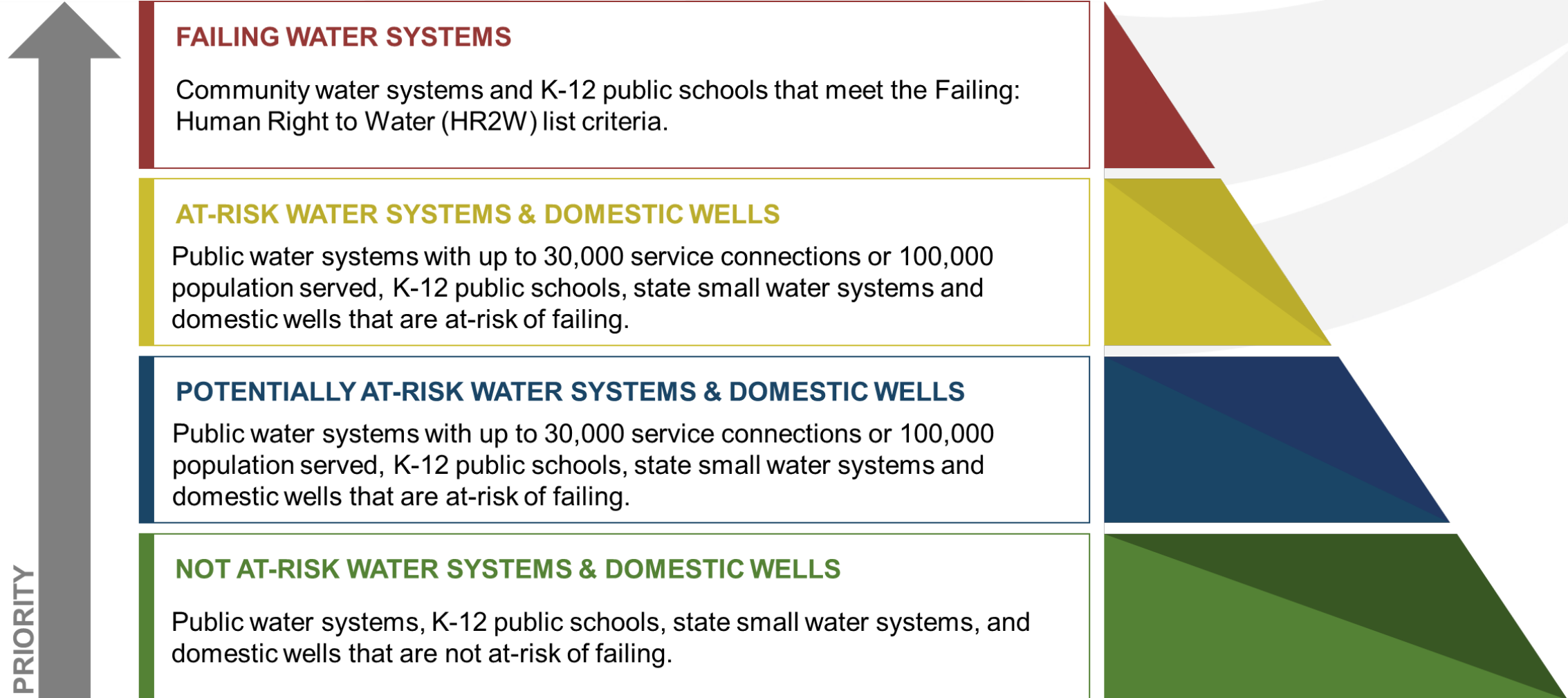
A graphic for Affordability Assessment featuring white line-art icons of a document with lines and a dollar sign. The background is a green-tinted image of houses.

Affordability Assessment

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		■	■ ■	■	■	■	■ ■ ■

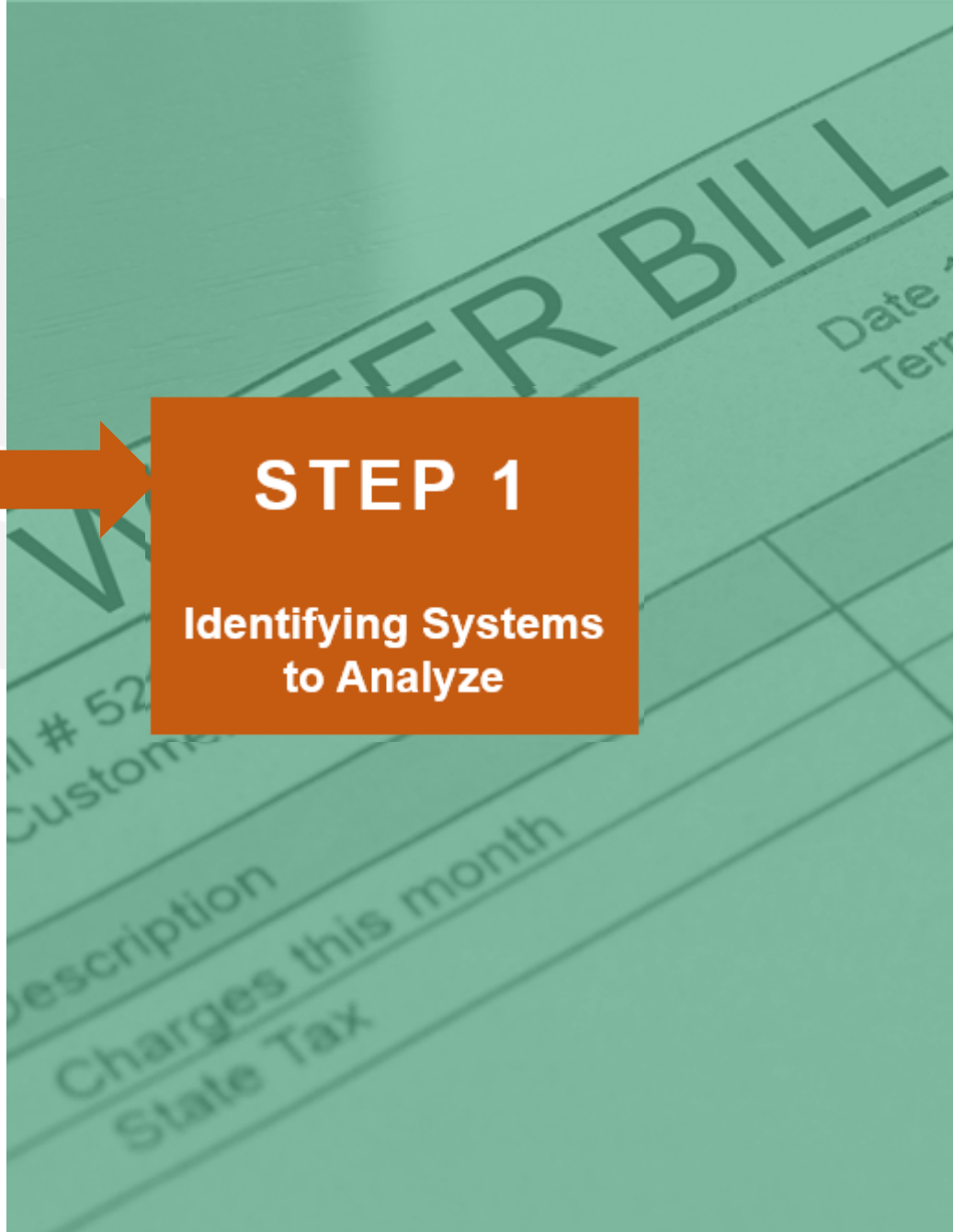
Affordability in the Needs Assessment

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.

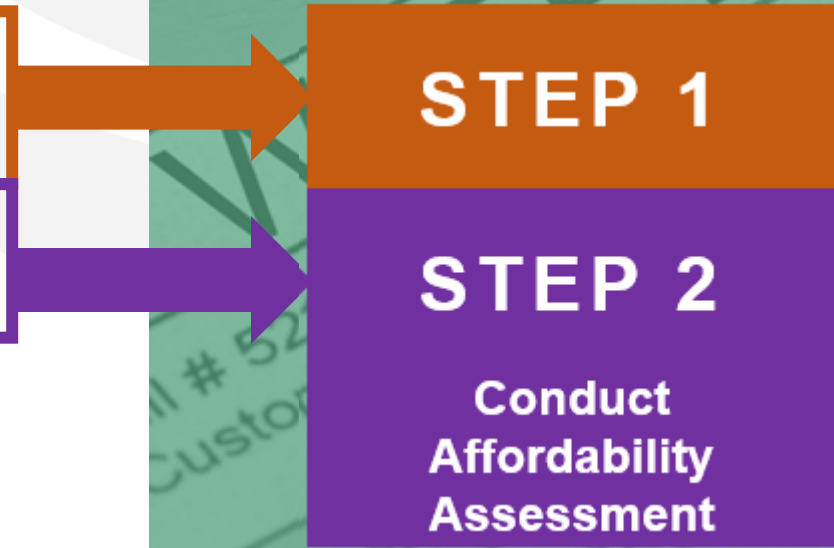


STEP 1
Identifying Systems to Analyze



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.



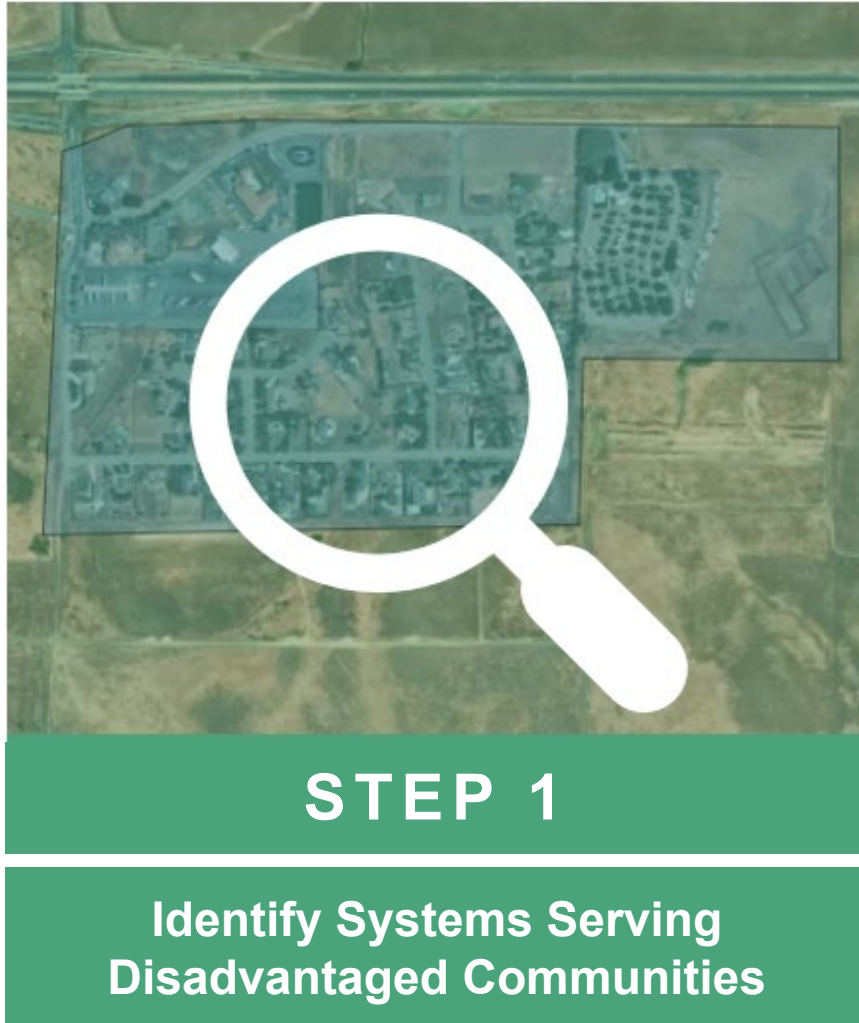
Re-Cap of Workshop 1 & 2 Recommendations & Feedback

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.

Identify Systems Serving DACs

Our recommendation for STEP 1 is to update the criteria for DAC identification.

A water system is a DAC if:

Its MHI is below the *county* low-income level*

OR

It's MHI is below *statewide* low-income level

*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)

Results of Recommended Method for Step 1

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

	<u>Current Approach</u> Systems below Statewide 80% MHI	<u>HCD Income Limits Only</u> Systems below HCD Low-Income Levels	<u>Recommended</u> Statewide MHI or HCD Methodology	<u>Difference</u> 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	108	
Total	2,868	2,868	2,868	

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

STEP 1: Public Feedback from Workshop 2

What do you think of identifying water systems serving DACs (Step 1) by **expanding the DAC criteria**?

Are the proposed additional HCD low-income and very-low income thresholds reasonable?

Support for incorporating regional incomes

Support for using HCD data with housing cost adjustments

Concerns about how expansion may impact priority systems

Concerns about second homes skewing data

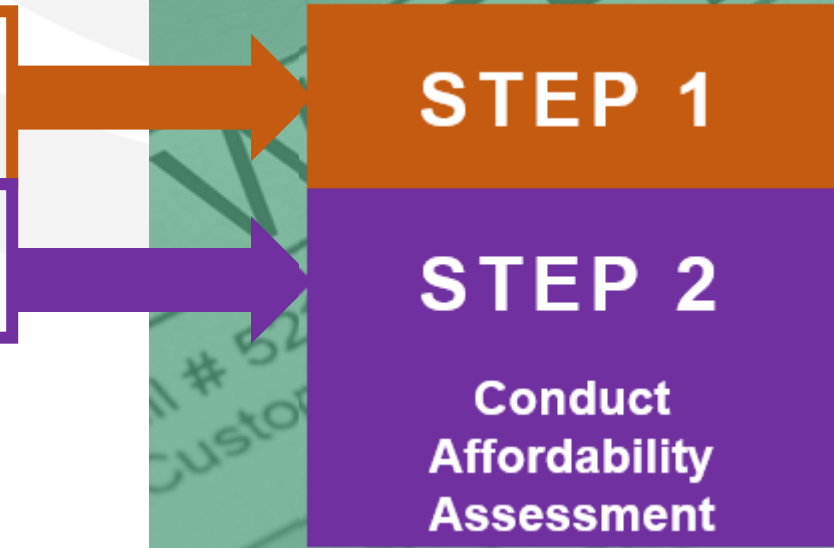
STEP 2

Affordability Assessment

The State Water Board is seeking feedback on how to calculate and incorporate a new affordability indicator

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.



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 = "Household Socioeconomic Burden"

% 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)

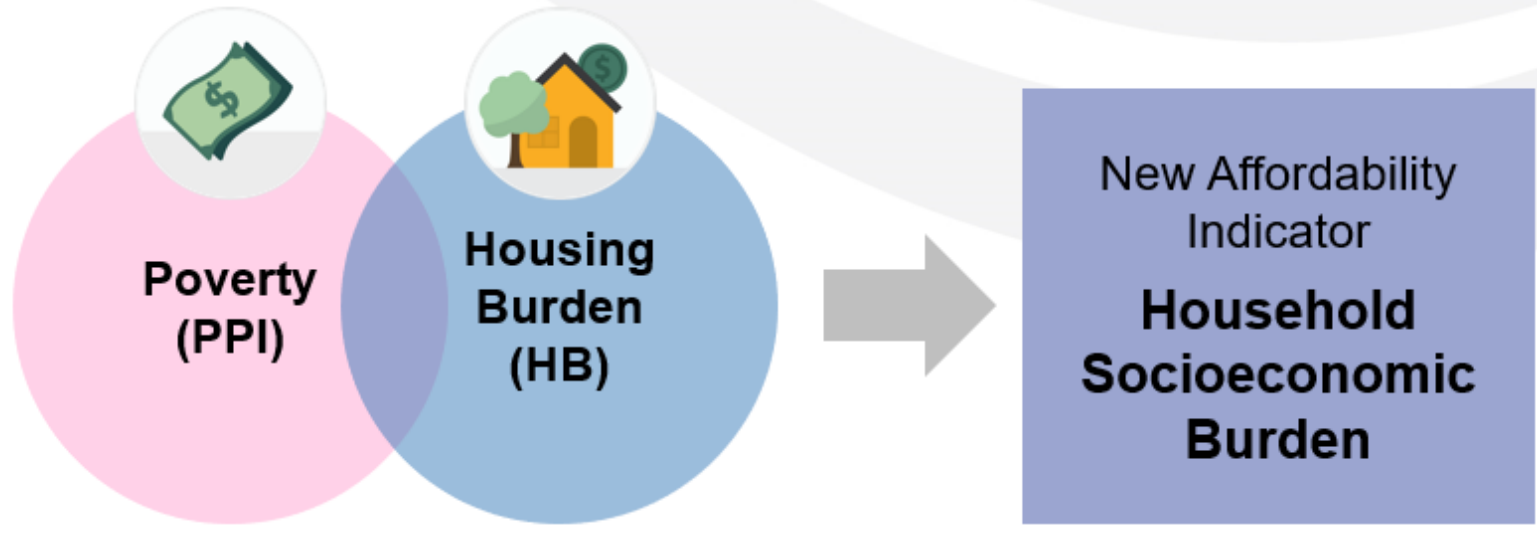
Extreme Water Bill

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.

NEW Household Socioeconomic Burden

New indicator that is a combination of “Poverty” and “Housing Burden”





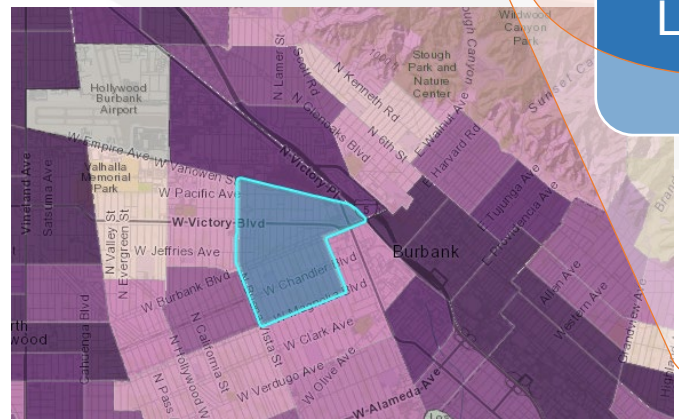
NEW Housing Burden

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)
- Severely burdened by housing costs (paying greater than 50% of their income to housing costs).

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

Example Tract: 6037310900



Number of Households: 2330

Low-Income Households: 990

Households Severely Burdened by Housing Costs: 510

Housing Burdened Low-Income Households
(510/2330) x 100 = 21.9%



NEW Poverty (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.

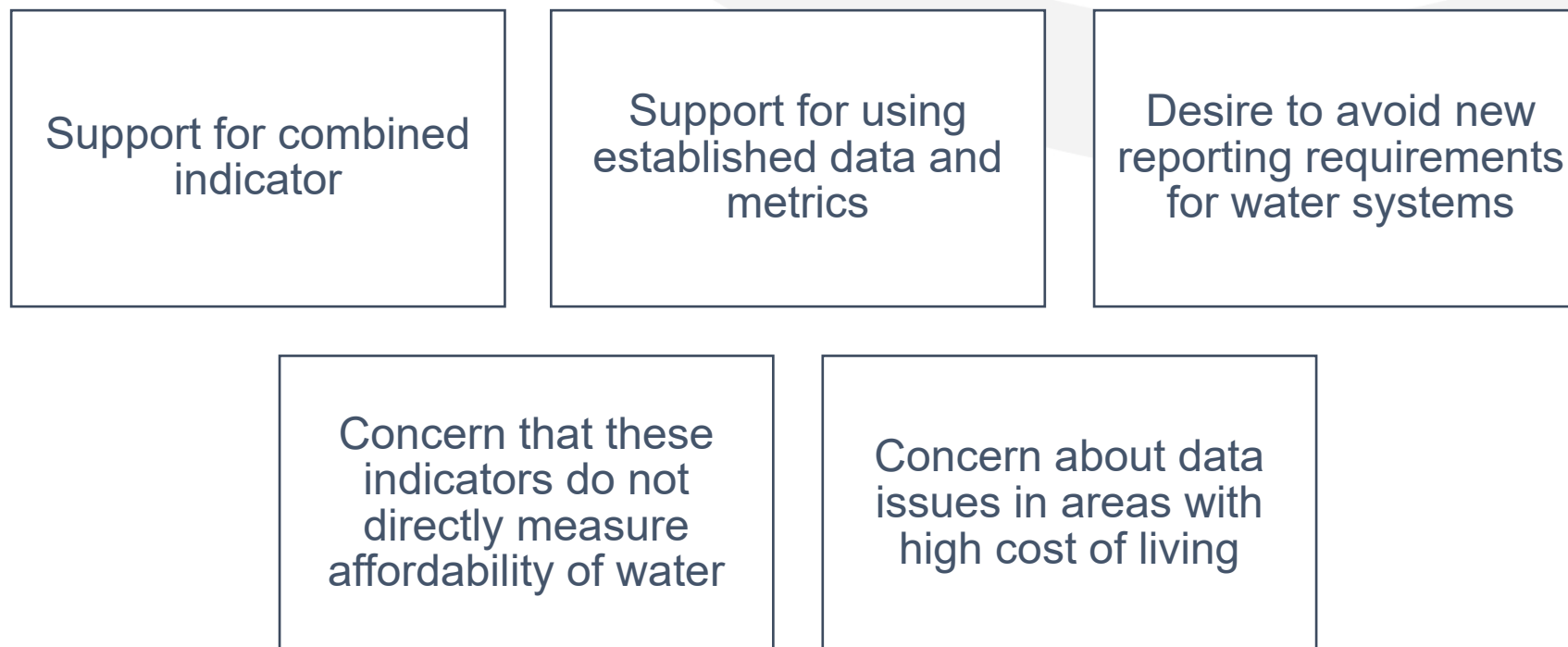
Source: 2015-2019 US Census, American Community Survey (ACS)

	Federal Poverty Level (2019)	2x Federal Poverty Level (2019)
For a 4-person household	\$25,750	\$51,500

STEP 2: Public Feedback from Workshop 2

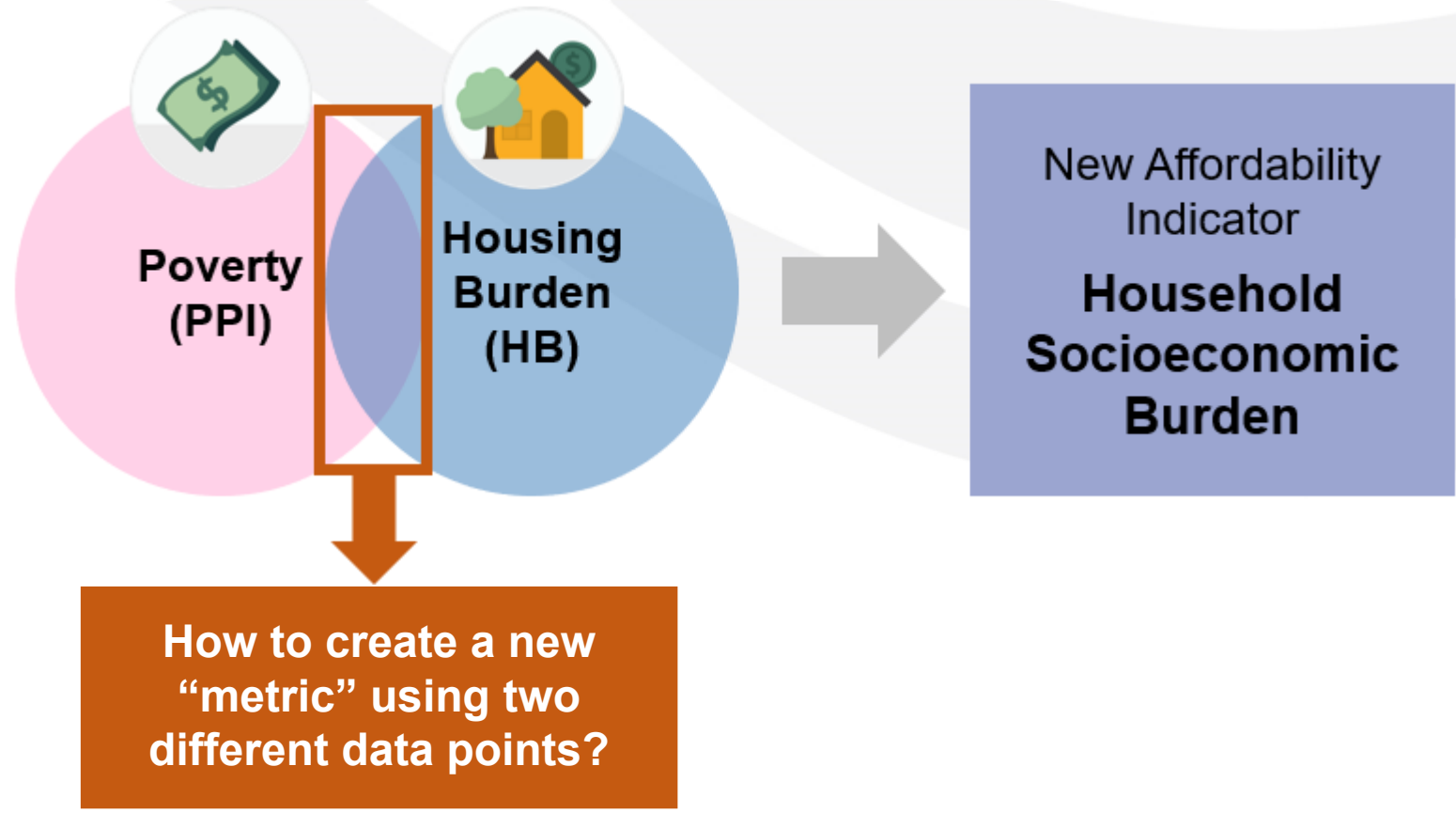
Should Poverty and Housing Burden be analyzed **separately** or **combined** as one indicator?

Does the proposed new socioeconomic indicator using Poverty and Housing Burden **contribute to a better understanding** of drinking water affordability for PWSs?



Calculation Methods Poverty & Housing Burden

Combining Poverty & Housing Burden Together



*White Paper details how each component (Poverty & Housing Burden) are calculated separately.

Options for Combining Poverty & Housing Burden Together

Option 1: Relative Ranking Approach

Percentile scores for all systems in the Assessment fall somewhere on this line

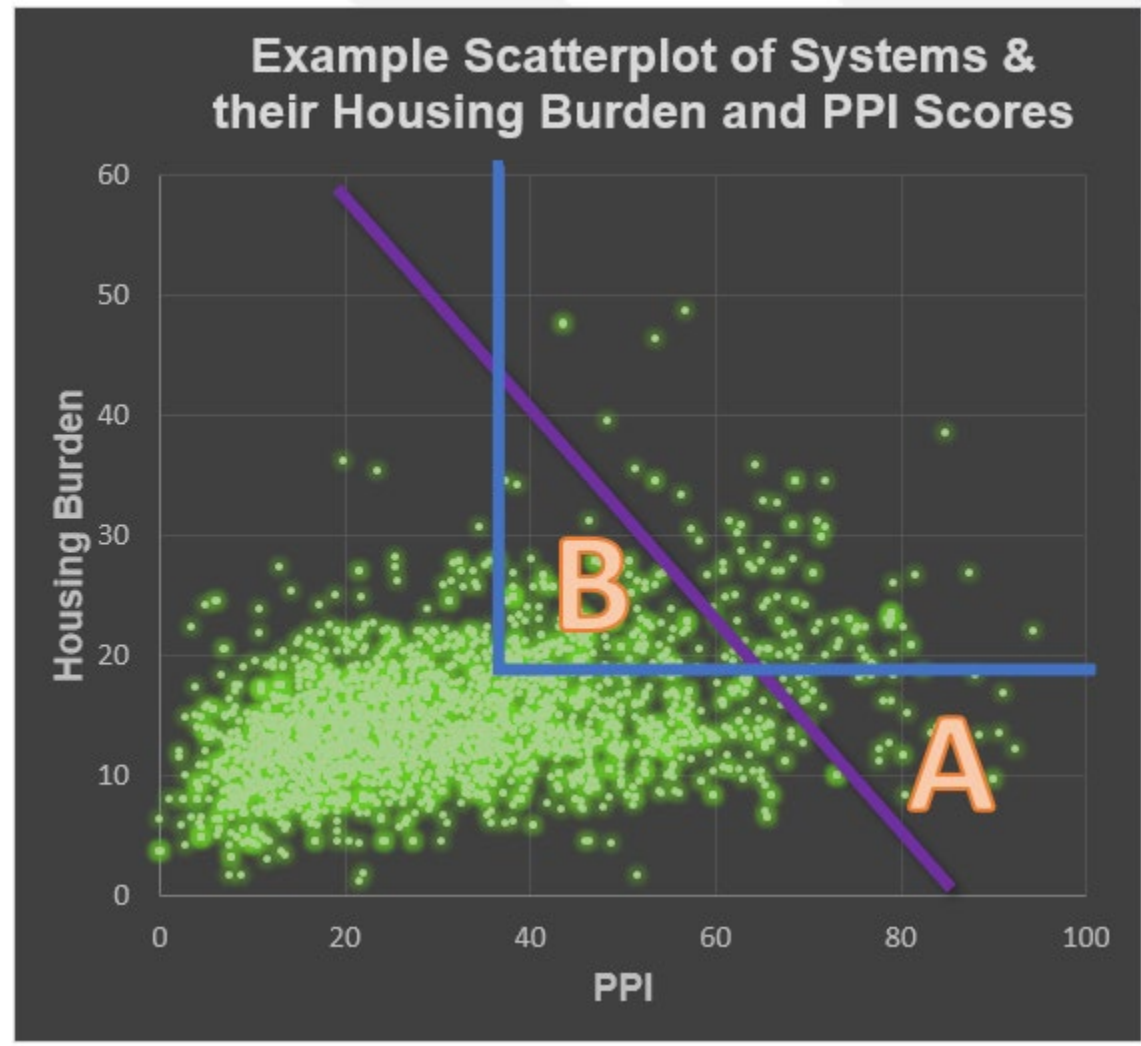


For example, a water system in the 92nd percentile means its value is higher than 92% of all other systems in the analysis.

Option 2: Matrix Approach Recommended

Poverty	High			
	Med			
	Low			
		Low	Med	High
		Housing Burden		

Combining Poverty & Housing Burden Together: *Difference of Results*



Relative Ranking Method

Systems above the purple line will score high (top 25%, for example)

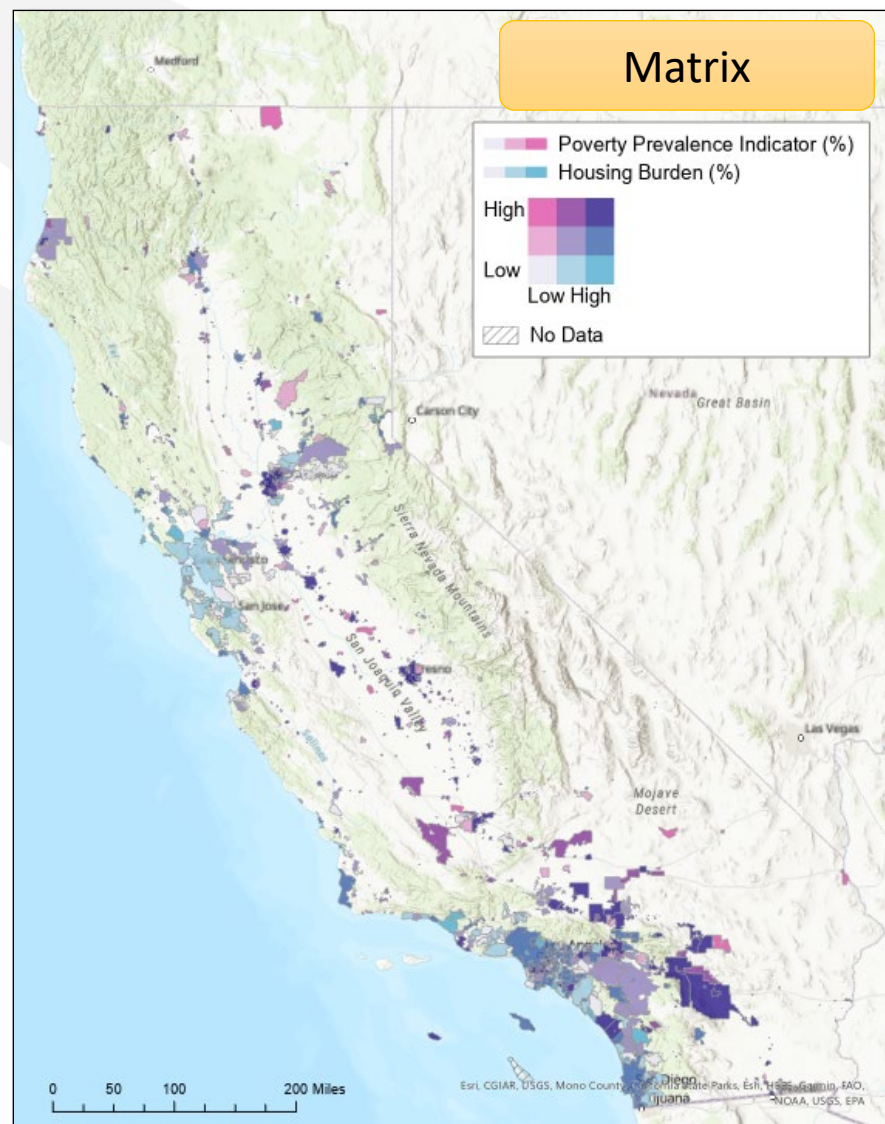
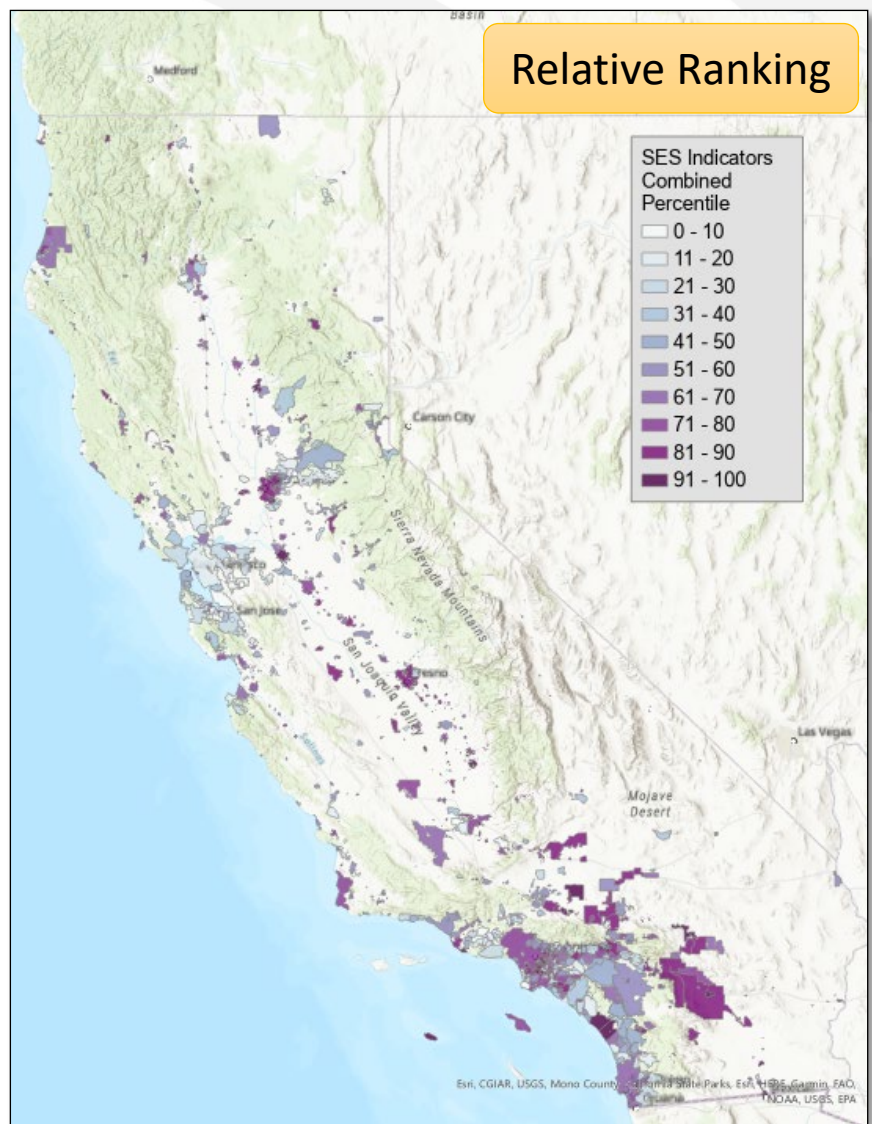
Systems in the area where B is will not qualify

Matrix Method

Systems within the blue square line will score high (score must be high for both categories to qualify)

Systems in the area where A is will not qualify

Combining Poverty & Housing Burden Together

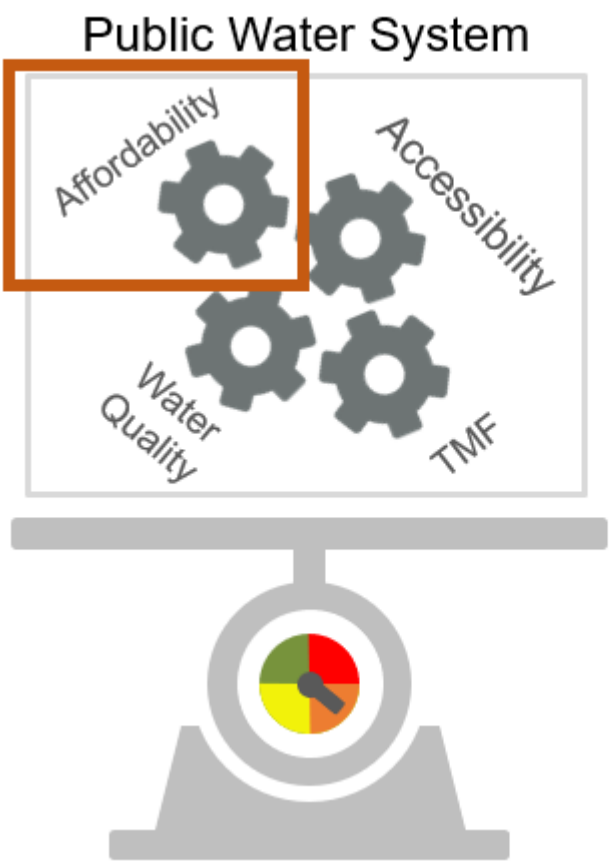


Discussion Topic 1: Combined Indicator Approach

Q1. Which combined indicator approach for analyzing Poverty and Housing Burden together do you support? The “Relative Ranking” or “Matrix Approach”?

Proposed Component Thresholds for Poverty & Housing Burden

Risk Assessment for Public Water Systems **Thresholds**



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 an indicator that designates when a water system is more at-risk of failing or facing a higher affordability burden.



THRESHLD SCORES & WEIGHTS

Application of normalized scores & weights to each indicator– some are more critical than others in contributing to overall risk or vulnerability.

Current Affordability Indicator Thresholds

Affordability Indicator	Thresholds	Risk Level = Affordability Burden
Percent of Median Household Income (%MHI)	Threshold 0 = Less than 1.49%	None
	Threshold 1 = 1.5% - 2.49%	Medium
	Threshold 2 = 2.5% or greater	High

Extreme Water Bill	Threshold 0 = Below 149.99% of the statewide average.	None
	Threshold 1 = 150% - 199.99% of the statewide average.	Medium
	Threshold 2 = 200% or greater of the statewide average.	High

Recommended **Poverty** Component Thresholds

Component	Thresholds	Risk Level = Affordability Burden
Poverty Prevalence Indicator (PPI)	Threshold N/A = Missing or not reliable PPI data	Unknown
	Threshold 0 = < 20% Indicates relatively low amounts of poverty	None
	Threshold 1 = 20% ≥ n < 35% Indicates moderate amounts of poverty	Medium
	Threshold 2 = ≥ 35% Indicates high amounts of poverty	High

Source: Raucher et al proposed this breakdown and it has been replicated many times in other studies and affordability assessments by other government agencies.

HBI - Water Costs as a Percent of Income at LQI	PPI - Percent of Households Below 200% of FPL		
	<20%	20% to 35%	≥35%
≥10%	Moderate-High Burden	High Burden	Very High Burden
7% to 10%	Moderate-Low Burden	Moderate-High Burden	High Burden
< 7%	Low Burden	Moderate-Low Burden	Moderate-High Burden

Recommended Housing Burden Component Thresholds

Component	Thresholds	Risk Level = Affordability Burden
Housing Burden	Threshold N/A = Missing or not reliable Housing Burden data	Unknown
	Threshold 0 = < 10.86%	None
	Threshold 1 = 10.86% ≥ n < 14.71%	Medium
	Threshold 2 = ≥ 14.72%	High

To our knowledge, consistent thresholds for this specific Housing Burden data have yet to be established. Given the lack consistent thresholds, the census tracts were grouped into **three categories** (or tertiles), based on the overall distribution of housing burden in the state to identify three levels of risk.

Household Socioeconomic Burden with Component Thresholds

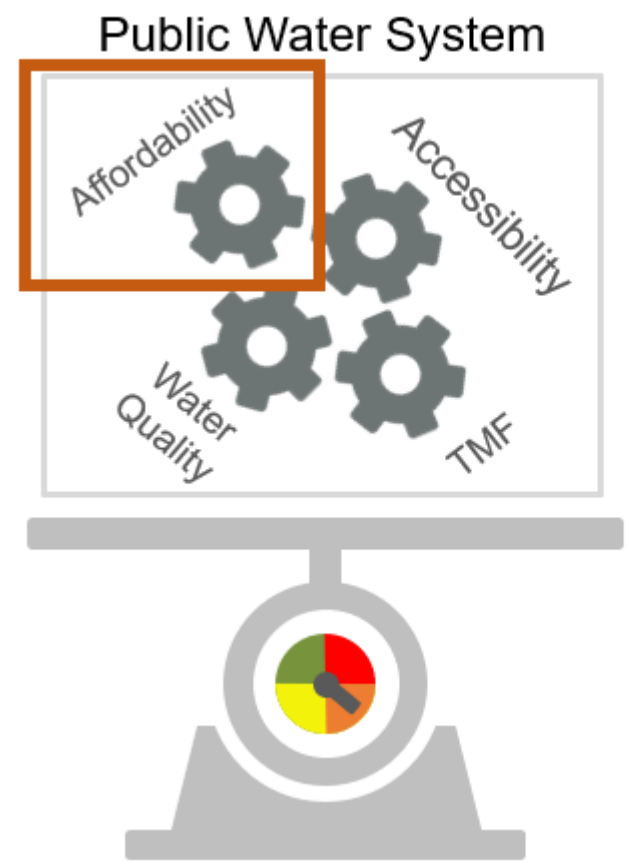
Poverty (PPI)	High Risk ≥ 35%	High (PPI) Low (HB)	High (PPI) Med (HB)	High (PPI) High (HB)
	Med Risk 20% ≥ n < 35%	Med (PPI) Low (HB)	Med (PPI) Med (HB)	Med (PPI) High (HB)
	None < 20%	Low (PPI) Low (HB)	Low (PPI) Med (HB)	Low (PPI) High (HB)
		None < 10.86%	Med Risk 10.86% ≥ n < 14.71%	High Risk ≥ 14.72%
Housing Burden (HB)				

Discussion Topic 2: Component Thresholds for Poverty & Housing Burden

Q1. Do you support the recommended component thresholds for Poverty and/or Housing Burden? Do you have any alternative recommendations?

Proposed Threshold Scoring for Poverty & Housing Burden

Risk Assessment for Public Water Systems **Threshold Scores & Weights**



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 an indicator that designates when a water system is more at-risk of failing or facing a higher affordability burden.



THRESHLD SCORES & WEIGHTS

Application of normalized scores & weights to each indicator– some are more critical than others in contributing to overall risk or vulnerability.

Current Affordability Indicator Threshold Scores & Weights

Affordability Indicator	Thresholds	Score	Weight	Max Score
Percent of Median Household Income (%MHI)	Threshold 0 = Less than 1.49%	0	N/A	0
	Threshold 1 = 1.5% - 2.49%	0.75	3	2.25
	Threshold 2 = 2.5% or greater	1	3	3
Extreme Water Bill	Threshold 0 = Below 149.99% of the statewide average.	0	N/A	0
	Threshold 1 = 150% - 199.99% of the statewide average.	0.5	1	0.5
	Threshold 2 = 200% or greater of the statewide average.	1	1	1

Recommended **Poverty** Component Indicator Threshold Scores

Component	Thresholds	Score	Risk Level = Affordability Burden
Poverty Prevalence Indicator (PPI)	Threshold N/A = Missing or not reliable PPI data	N/A	Unknown
	Threshold 0 = < 20% Indicates relatively low amounts of poverty	0	None
	Threshold 1 = 20% ≥ n < 35% Indicates moderate amounts of poverty	0.25	Medium
	Threshold 2 = ≥ 35% Indicates high amounts of poverty	1	High

Recommended Housing Burden Component Indicator Threshold Scores

Component	Thresholds	Score	Risk Level = Affordability Burden
Housing Burden	Threshold N/A = Missing or not reliable Housing Burden data	N/A	Unknown
	Threshold 0 = < 10.86%	0	None
	Threshold 1 = 10.86% ≥ n < 14.71%	0.25	Medium
	Threshold 2 = ≥ 14.72%	1	High

Household Socioeconomic Burden with Component Threshold Scores

Poverty (PPI)	High Risk ≥ 35%	Score = 1	N/A	0.5	0.625	1
	Med Risk 20% ≥ n < 35%	Score = 0.25	N/A	0.125	0.25	0.625
	None < 20%	Score = 0	N/A	0	0.125	0.5
	Unknown	Score = N/A	N/A	N/A	N/A	N/A
			Score = N/A	Score = 0	Score = 0.25	Score = 1
			Unknown	None < 10.86%	Med Risk 10.86% ≥ n < 14.71%	High Risk ≥ 14.72%
Housing Burden (HB)						

Preliminary Performance of Water Systems

Affordability Indicator	Thresholds	Score	Weight	Max Score	Risk Level = Affordability Burden
Household Economic Burden	Threshold 0 = 0 – 0.125	0	N/A	0	None
	Threshold 1 = 0.25 – 0.5	0.5	2	1	Medium
	Threshold 2 = 0.625 – 1.0	1	2	2	High

Recommended Household Serioconomic Burden Indicator Threshold Scores

Affordability Indicator	Thresholds	Risk Level = Affordability Burden	# of PWSs	% of PWSs
Household Economic Burden	Threshold N/A = Missing or not reliable Housing Burden data	Unknown	56	2%
	Threshold 0 = 0 – 0.125	None	776	28%
	Threshold 1 = 0.25 – 0.5	Medium	667	24%
	Threshold 2 = 0.625 – 1.0	High	1,248	45%

Discussion Topic 3: Household Socioeconomic Burden Scoring

- Q1. Do you support the recommended scoring for the individual Poverty and Housing Burden components?
- Q2. Do you support the recommended COMBINED scoring for Household Socioeconomic Burden, utilizing the score for Poverty and Housing Burden?

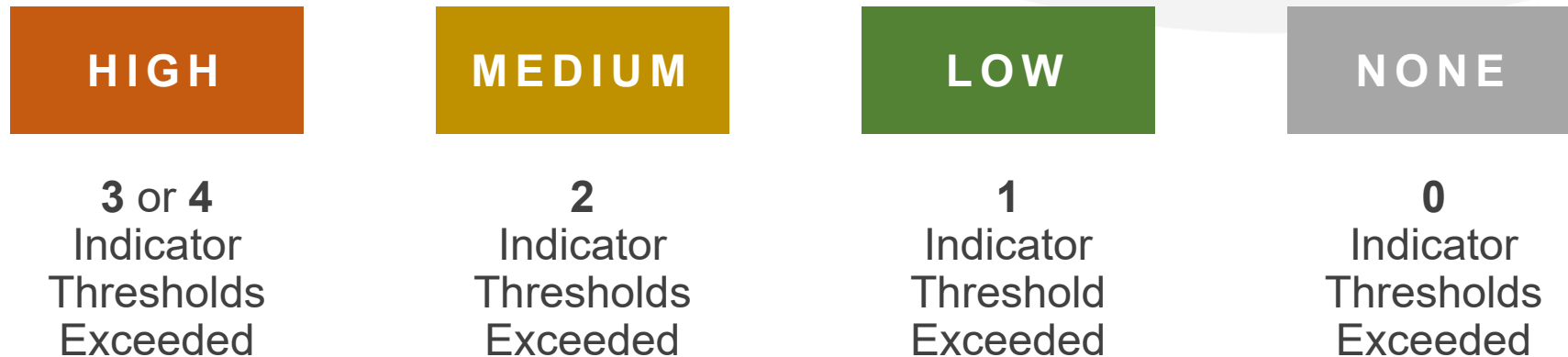


Affordability Assessment Methodology & Threshold Options

Developing an “Affordability Threshold”

The 2022 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.



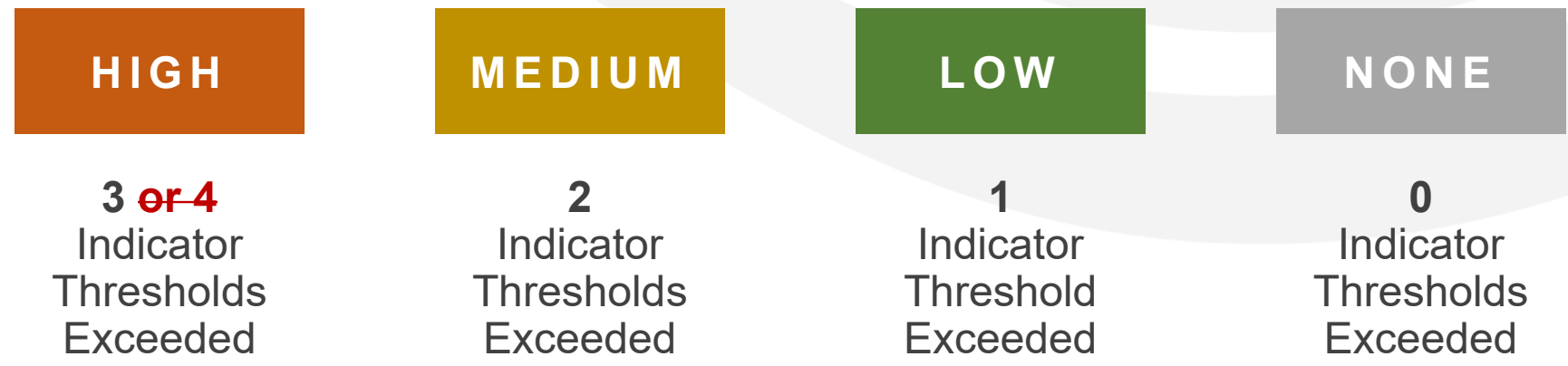
2022 Affordability Assessment Results

Included Indicators: %MHI; Extreme Water Bill; % Residential Arrearages; and Arrearage Burden

Systems	Total Systems	High Affordability Burden	Medium Affordability Burden	Low Affordability Burden	None
DAC / SDAC Systems	1,366	62 (5%)	176 (13%)	285 (21%)	843 (62%)
Non-DAC/SDAC Systems	1,394	21 (2%)	133 (10%)	275 (20%)	965 (69%)
Missing DAC Status	108	0 (0%)	4 (4%)	6 (6%)	98 (91%)
TOTAL	2,868	83 (3%)	313 (11%)	566 (20%)	1,906 (66%)

Current Approach: Updated for 2023 Affordability Assessment

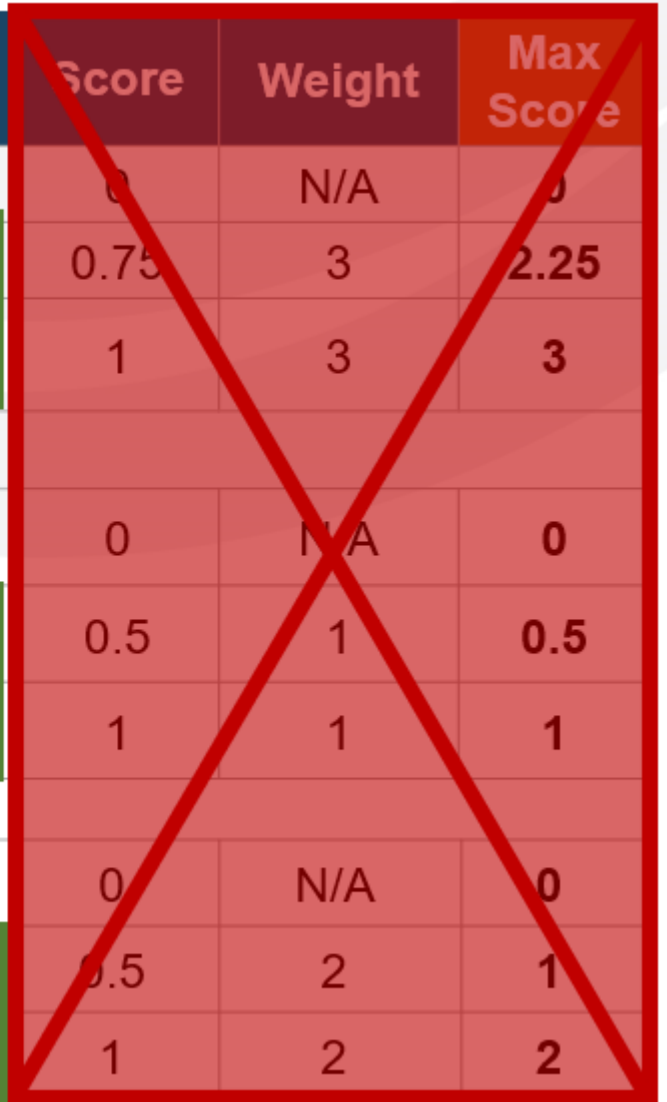
Updated to account for 3 affordability indicators rather than 4 from 2022.



Current Approach: Utilize Count Min. Threshold Met; **No** Scores or Weights

Affordability Indicator	Thresholds
%MHI	Threshold 0 = Less than 1.49%
	Threshold 1 = 1.5% - 2.49%
	Threshold 2 = 2.5% or greater
Extreme Water Bill	Threshold 0 = Below 149.99% of the statewide average.
	Threshold 1 = 150% - 199.99% of the statewide average.
	Threshold 2 = 200% or greater of the statewide average.
Household Economic Burden	Threshold 0 = 0 – 0.125
	Threshold 1 = 0.25 – 0.5
	Threshold 2 = 0.625 – 1.0

Score	Weight	Max Score
0	N/A	0
0.75	3	2.25
1	3	3
0	N/A	0
0.5	1	0.5
1	1	1
0	N/A	0
0.5	2	1
1	2	2



Example: System A

49 Connections

\$85,795 MHI (Non-DAC)

\$105 average monthly charges

2022 Affordability Indicator	Indicator Value	Threshold Met	Affordability Risk?	# Min. Threshold Met?
% MHI	1.4%	0	None	No
Extreme Water Bill	165% of state average	1	Medium	Yes
% Residential Arrearages	31 accounts (63%)	2	High	Yes
Arrearage Burden	\$11,023 in outstanding debt \$224.97 if spread out across all customers	2	High	Yes
				Total = 3

HIGH AFFORDABILITY BURDEN

Preliminary 2023 Affordability Assessment Results

Included Indicators: %MHI; Extreme Water Bill; and Household Socioeconomic Burden

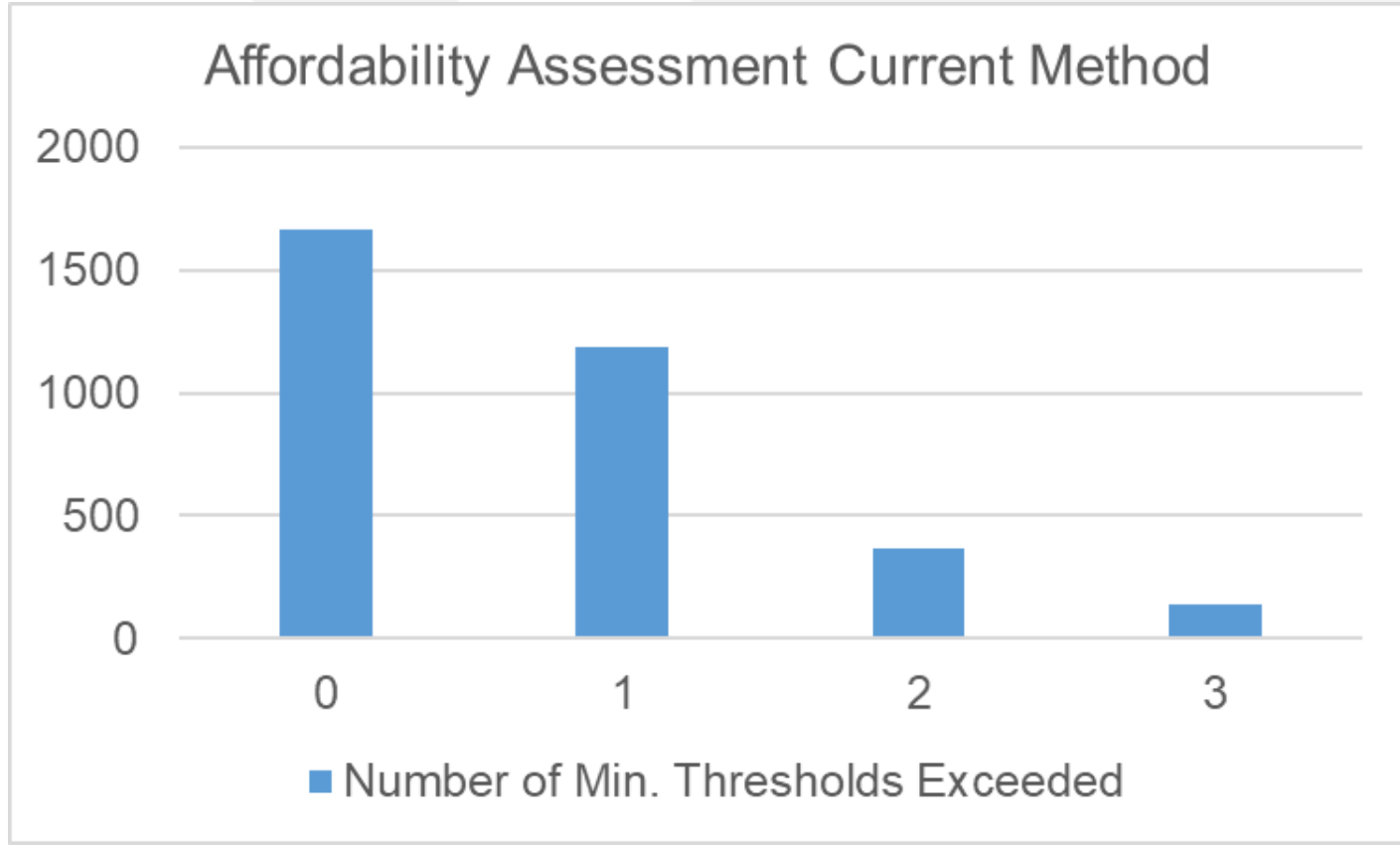
Systems	Total Systems	High Affordability Burden	Medium Affordability Burden	Low Affordability Burden	None
DAC / SDAC Systems	1,714	70 (4%)	276 (16%)	539 (31%)	785 (46%)
Non-DAC/SDAC Systems	1,470	72 (5%)	94 (6%)	583 (40%)	705 (48%)
Missing DAC Status	56	0 (0%)	0 (0%)	7 (13%)	49 (88%)
TOTAL	3,240	142 (4%)	370 (11%)	1,129 (35%)	1,539 (48%)
Diff. 2022 vs. 2023	↑ 372	↑ 59	↑ 57	↑ 563	↓ 367

Alternative Approach 1: Utilize Tired Threshold Scores; **No Weights**

Affordability Indicator	Thresholds	Score	Weight	Max Score
%MHI	Threshold 0 = Less than 1.49%	0	N/A	0
	Threshold 1 = 1.5% - 2.49%	0.75	3	2.25
	Threshold 2 = 2.5% or greater	1	3	3
Extreme Water Bill	Threshold 0 = Below 149.99% of the statewide average.	0	N/A	0
	Threshold 1 = 150% - 199.99% of the statewide average.	0.5	1	0.5
	Threshold 2 = 200% or greater of the statewide average.	1	1	1
Household Economic Burden	Threshold 0 = 0 – 0.125	0	N/A	0
	Threshold 1 = 0.25 – 0.5	0.5	2	1
	Threshold 2 = 0.625 – 1.0	1	2	2



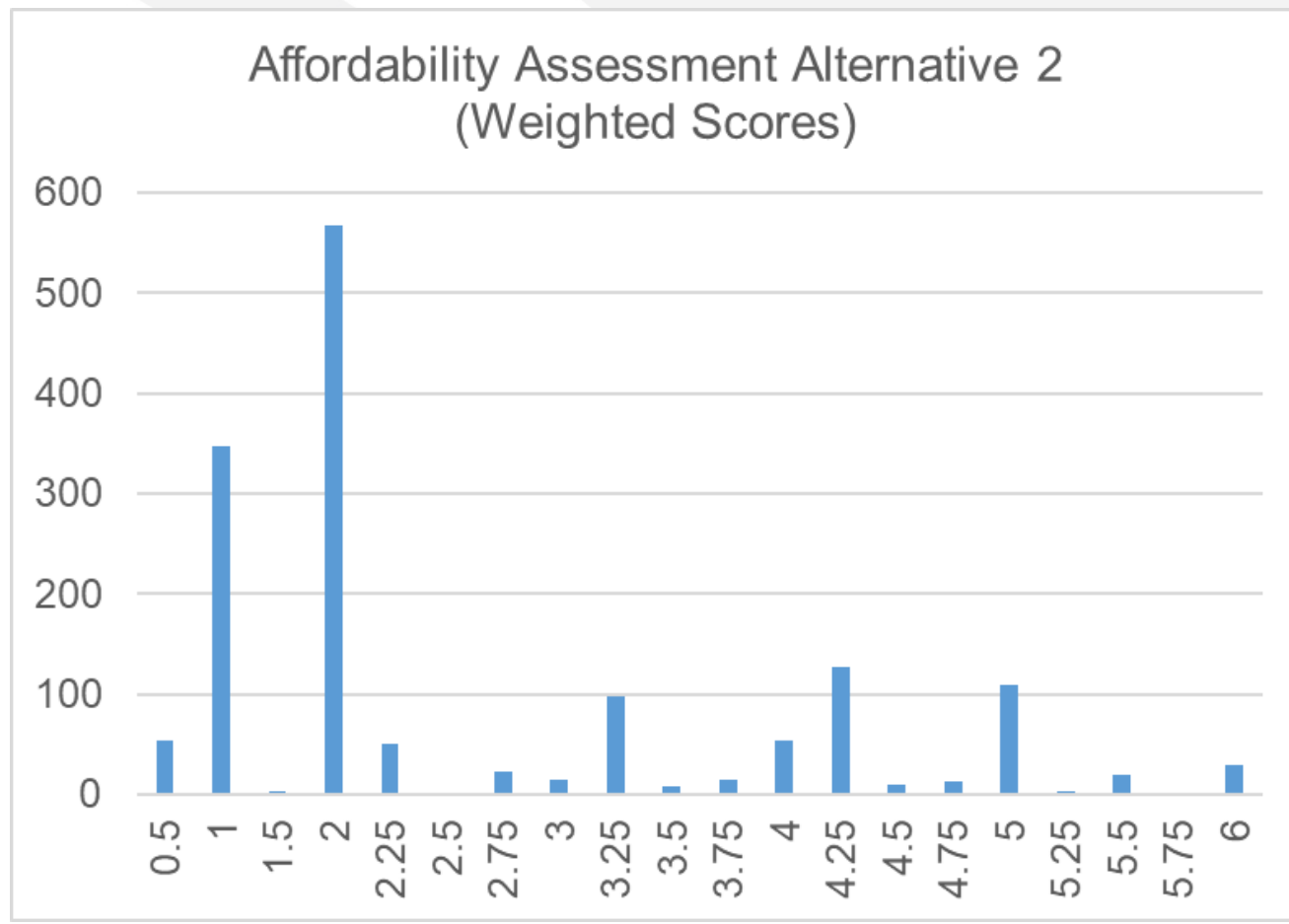
Alternative Approach 1: Distribution of Scores



Alternative Approach 2: Utilize Tired Threshold Scores; **With Weights**

Affordability Indicator	Thresholds	Score	Weight	Max Score
%MHI	Threshold 0 = Less than 1.49%	0	N/A	0
	Threshold 1 = 1.5% - 2.49%	0.75	3	2.25
	Threshold 2 = 2.5% or greater	1	3	3
Extreme Water Bill	Threshold 0 = Below 149.99% of the statewide average.	0	N/A	0
	Threshold 1 = 150% - 199.99% of the statewide average.	0.5	1	0.5
	Threshold 2 = 200% or greater of the statewide average.	1	1	1
Household Economic Burden	Threshold 0 = 0 – 0.125	0	N/A	0
	Threshold 1 = 0.25 – 0.5	0.5	2	1
	Threshold 2 = 0.625 – 1.0	1	2	2

Alternative Approach 2: Distribution of Scores



Pros & Cons of Alternative Approaches

Pros:

- Results in more nuanced degrees of affordability burden that are not captured in the current Assessment's results.
- Aligns more closely with how the affordability indicators are utilized in the Risk Assessment.

Cons:

- Approach 1: The results with Approach 1 closely mirror the current method's results.
- Approach 2: The distribution of system weighted scores would require grouping of scores to the final Affordability Assessment burden designations. The results would be similar to the current approach.
- More difficult to maintain affordability threshold, would need to adjust every time indicators are added/removed.

Discussion Topic 4: Affordability Assessment Options

- Q1. Which approach for conducting the Affordability Assessment do you prefer? Do you agree with our recommendation to continue utilizing the current approach?
- Q2. Do you agree with the current approach for applying “Affordability Thresholds” = “Affordability Burden” levels: High, Medium, Low, None?
- Q3. If we use one of the alternative approach for the Assessment, do you have a recommendation for the new “Affordability Thresholds”?

Next Steps

Feedback Requested

Complete online survey about discussion topics discussed today:
<https://forms.office.com/g/Cs83p2wvYN>

Public Feedback due **December 1, 2022**

Future Workshops

Jan. 2023 **Workshop 4: 2023 Needs Assessment Workshop**

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

Spring 2023 **Results Webinar: 2023 Needs Assessment Results**

- Overview of the 2023 Needs Assessment results.
- Opportunities to discuss enhancement for future iterations of the Needs Assessment.



Thank You

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