Water Affordability in California: Linking Affordability Indicators to Policy Decisions

Laura Feinstein
Senior Researcher, Pacific Institute
Take-Home Points

• Some affordability indicators are better than others, but all reflect at least some subjective choices and simplifying assumptions.

• We need to understand water affordability to answer questions about management of water: rate setting, cost management, identifying feasible new sources of supply.

• We need to understand poverty to answer questions about how to run an a customer assistance program: who is struggling to meet basic needs?

• Low-income bill discounts aren’t the only tool in the box for improving affordability.
Section I. Why Do We Measure Affordability?
Goals & Definitions

• Water is affordable when households do not face tradeoffs between paying for basic water and sanitation needs and other essential expenses (United Nations Special Rapporteur on Water, 2015)

• “Water-cost burdened” – a household that faces tradeoffs between water and other essential expenses
Two Levels of Affordability Problems, Two Sets of Solutions

• System-level: Are a large proportion of households in a system water-cost burdened?
  • Cost-management
  • Rate-setting
  • New Investments
  • Conservation and efficiency

• Household-level: Is an individual household water-cost burdened?
  • Customer Assistance Program
Section II. Developing a Useful Set of Affordability Indicators
Improved Affordability Indicator

• Affordability Ratio (AR) =

\[
\frac{\text{number of persons} \times \text{cost of basic water use}}{\text{income} - \text{essential nonwater expenses}}
\]

Source: Teodoro 2018

• Basic Water Use includes drinking water for indoor use, wastewater, and stormwater. Excludes outdoor irrigation and leaks.

• Simplying assumptions and calculations
  • Use available government tables to estimate cost of nonwater essential expenses on a county

• Challenge: hard to disaggregate income level and household size
## Suggested Performance Indicators

<table>
<thead>
<tr>
<th>Service Level</th>
<th>Household-Level Performance Measure</th>
<th>System-Level Performance Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfactory</td>
<td>Basic water needs cost ≤10% of income after nonwater essential expenses.</td>
<td>Fewer than 33% of households spend &gt;10% income on basic water needs after non water essential expenses.</td>
</tr>
<tr>
<td>Moderate</td>
<td>Basic water needs cost &gt;10% but ≤50% of income after nonwater essential expenses.</td>
<td>Fewer than 40% of households spend &gt;10% income on basic water needs after non water essential expenses.</td>
</tr>
</tbody>
</table>

Also suggest Marginal and Unsatisfactory standards. Unsatisfactory = >100% for basic water use

Source: Feinstein (2018, forthcoming)
Section III. Connecting Affordability and Customer Assistance Programs
Eligibility for Customer Assistance

- Really only need to answer a simple question: is a household struggling to meet basic needs?
- Existing social assistance programs have advantage of adjusting for income by household size
- Best to avoid extensive questionnaires and identifying eligible households from scratch
- The quickest and most expedient way to enroll people in a CAP is to use an existing list
The Cost of Water Isn’t a Big Determinant of Which Households are Cost-Burdened

Households making less than $30,000 annually are typically just meeting basic expenses

Source: US Consumer Expenditure Survey 2017
Recommendation on Eligibility for Customer Assistance Indicator

- Household income threshold: 200% Federal Poverty Line (FPL) or Very Low Income (VLI), whichever is higher
Bill Discounts Aren’t the only Tool in the Box to Improve Affordability

• Conservation and Efficiency Programs, especially targeted to low-income homeowners, renters, landlords, and nonprofit affordable housing
• Rate Setting: tiered rates and budget-based rates
• Choose the most economic source of new supply
  • Energy sector principle: conservation and efficiency is first in the loading order
• Consider whether regionalization or consolidation can help spread fixed costs across more ratepayers
Conclusion

• Measurements of water affordability are useful for monitoring the impact of system-level management decisions – Affordability Ratio

• Take a simpler approach to determining eligibility for customer assistance – 200% FPL/VLI

• Consider other options besides bill discounts to improve affordability.
Questions?

For a more detailed discussion, see forthcoming report,

*Measuring Progress Toward Universal Access to Water and Sanitation in California: Defining Goals, Indicators and Performance Measures*

Laura Feinstein  
Senior Researcher  
Pacific Institute  
510-877-3193  
lfeinstein@pacinst.org
Extra Slides
Comparing Affordability Indicators and Eligibility for Customer Assistance

- **Marin**: Households spending more than 1.5% of gross income on drinking water.
- **Santa Clara**: Households spending more than 10% of DI on basic water use (water, sewer, storm).
- **Napa**: 200% FPL/VLI.
- **Monterey**: 200% FPL/VLI.
- **San Bernardino**: 200% FPL/VLI.
- **Inyo**: 200% FPL/VLI.
- **Humboldt**: 200% FPL/VLI.
- **Trinity**: 200% FPL/VLI.

Source: pacinst.org | @PacificInstitut