



Final Study Results:

Water Use Projections, Water Demand Elasticity, and Customer Affordability

Program Update:

Water Rate Assistance Program

July 14, 2026

Presentation Agenda

**Raftelis & Hazen
Final Study Results**

**Water Use Projections
Water Demand Elasticity
Customer Affordability**

**Valley Water's
Office of Civic Engagement**

**Water Rate Assistance Program
(WRAP) Update**

www.valleywater.org/WRAP

Santa Clara Valley Water District

Final Results

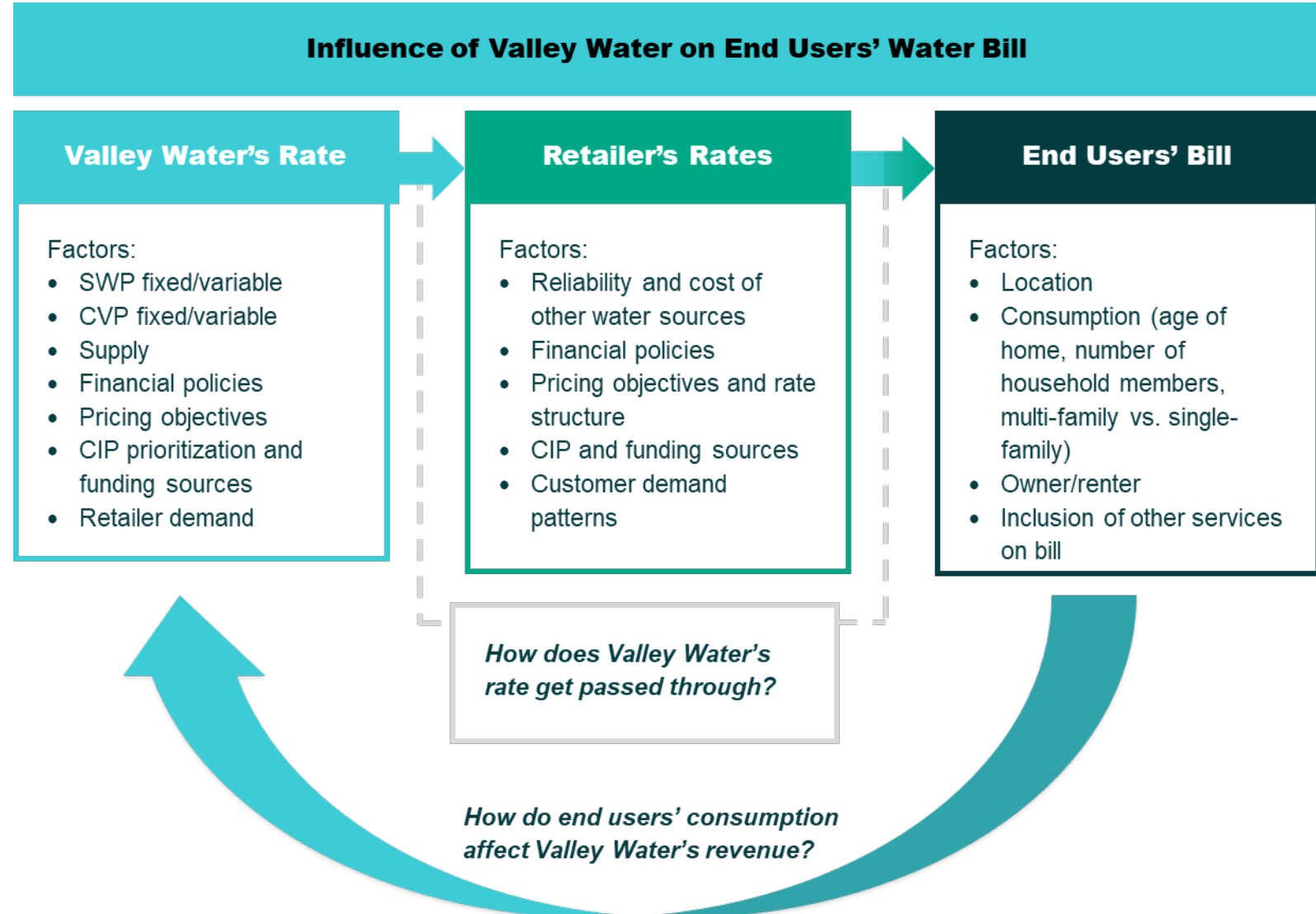
Water Use Projections, Water Demand Elasticity, and Customer Affordability Study

July 14, 2026



Project Goals

- Identify how Valley Water's rates impact water demand (elasticity) and affordability of water service in Santa Clara County
- Validate and/or refine water demand forecasting for purposes of annual rate setting and long-term capital planning
- Tasks:
 - › Demand Forecast
 - › Elasticity Analysis
 - › Affordability Assessment



Preliminary Results – Fall 2025 Meetings



Final Results – Spring 2026 Meetings



Summarized Feedback

- **Affordability results averaged by retailer may not tell the whole story within a community**
- **How to harmonize these affordability indicators with other non-utility indicators? How does affordability relate to other known socio-economic indicators?**
- **At what change in rates would people make behavioral changes? What is that elasticity estimate?**
- **Does Valley Water have a low-income assistance program?**
- **What is Valley Water doing to increase recycled water use?**

Key Findings

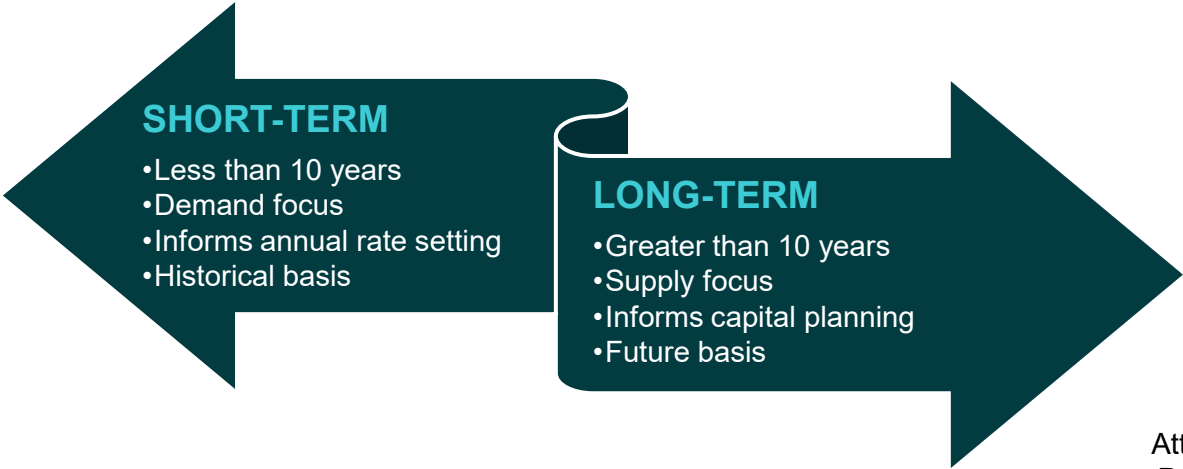


Task 1: Water Use Projections (for rate setting)

- Declining demands across the Valley Water service area
- Demand forecasting approach is consistent with peers and largely accurate
- Evaluation of alternatives demonstrate Valley Water’s approach falls between other approaches

FY 2025	Valley Water Method	Time Series Method	Regression Method	Average
Low Range	208	187	221	205
Medium Range	217	198	230	215
High Range	223	204	234	220

Values in thousand acre-feet per year (TAF)



Task 2: Water Demand Elasticity

- Goal: Estimate the relationship between water prices and water consumption
- Estimates across three methods: **-0.18 to -0.21**
 - › Confirms water demand is inelastic with respect to price
 - › A 10% change in price would be expected to drive a 2% change in demand
- Results align with prior Valley Water studies and academic literature
- Supplemental finding: wholesale-to-retail volumetric pass-through
 - › **83%** of the annual variation in retail volumetric prices is explained by the change in Valley Water's wholesale rates (statistical significance)

Task 3: Customer Affordability

Retail Metrics	North Zone	South Zones	Total Valley Water Service Area	Metric Thresholds
 AR20	1.5% - 3.4%	1.3% - 3.4%	2.5%	5%
 HMW	2.7 – 3.8	2.8 – 5.4	4.6	4
 LQI RI	0.7% - 0.9%	0.7% - 1.6%	1.2%	2%
 MHI RI	0.4% - 0.5%	0.4% - 0.8%	0.7%	2%

¹All results shown at essential water use of 6 HCF

Affordability results averaged by retailer may not tell the whole story within a community.

How to harmonize these affordability indicators with other non-utility indicators?

Single Family Residential Affordability Results by Retailer

Single Family Residential Water Affordability Metrics				
Retailer (and Service Area)	LQI	MHI	HMW	AR ₂₀
City Of Gilroy	0.7%	0.4%	2.7	1.5%
City Of Milpitas	1.1%	0.7%	4.6	2.0%
City Of Morgan Hill	0.9%	0.5%	3.8	1.6%
City Of Mountain View	0.9%	0.5%	3.1	1.8%
City Of Santa Clara	1.1%	0.6%	4.2	2.3%
City Of Sunnyvale	0.7%	0.4%	2.8	1.4%
CWSC Los Altos Suburban	0.9%	0.5%	4.1	1.6%
Great Oaks Water Company	0.8%	0.5%	2.9	1.7%
San Jose Municipal Water System (Coyote)	1.1%	0.7%	3.6	2.5%
San Jose Municipal Water System (Evergreen/Edenvale)	1.2%	0.8%	5.4	2.0%
San Jose Municipal Water System (North San Jose/Alviso)	0.8%	0.6%	4.6	1.3%
San Jose Water	1.6%	0.8%	5.3	3.4%
Valley Water Service Area of Included Retailers*	1.2%	0.7%	4.6	2.5%
<i>Affordability Thresholds - Water Service</i>	<i>2.0%</i>	<i>2.0%</i>	<i>4.0</i>	<i>5.0%</i>
<i>Census tract information - American Community Survey maintained by the US Census Bureau and Consumer Expenditure survey</i>				

**Weighted based on the population served by each retailer*

Single Family Residential AR₂₀ by Retailer and Census Tract

Retailer (and Service Area)	Weighted Average Census Tracts	Affordable Census Tracts (Count)	Unafford. Census Tracts (Count)
City Of Gilroy	1.5%	13	1
City Of Milpitas	2.0%	16	5
City Of Morgan Hill	1.6%	9	2
City Of Mountain View	1.8%	22	3
City Of Santa Clara	2.3%	26	7
City Of Sunnyvale	1.4%	40	1
CWSC Los Altos Suburban	1.6%	40	2
Great Oaks Water Company	1.7%	18	5
San Jose Municipal Water System (Coyote)	2.5%	4	1
San Jose Municipal Water System (Evergreen/Edenvale)	2.0%	18	4
San Jose Municipal Water System (North San Jose/Alviso)	1.3%	8	1
San Jose Water	3.4%	125	88
Valley Water Service Area of Included Retailers	2.5%*	339	120

**Weighted based on the population served by each retailer*

Comparison with Non-Utility Indicators

Source/Method	% of Households
Social Security Income (SSI) Households	8.3%
Supplemental Nutrition Assistance Program (SNAP) Enrolled	7.7%
Public Use Microdata Sample (PUMS) Analysis	5.95%

- PUMS analysis is based on a survey of self-reported income and self-reported household size
- The estimate of 5.95% of households in the Valley Water service area having unaffordable water bills tracks with other indicators that reflect lower income and needs based households
 - Translates to an estimated 37,000 households in Santa Clara County

Customer Assistance Programs (CAP) and Valley Water

- Retailers offer their own customer assistance programs
- Programs vary by retailer and are distinct between private / IOUs and public / municipal utilities
- Valley Water can further work with retailers on related assistance like payment programs, and customer outreach

Valley Water's Water Rate Assistance Program (WRAP) complements other local & regional customer assistance programs

Establishing a Foundation | Recognizing Challenges

Study results can inform future rate setting cycles and policy decisions:

- Demand forecasts drive rate levels and are key to rate stability.
- Rate increases reduce demand through price elasticity.
- Wholesale prices pass through to volumetric retail rates.
- Affordability constrains rate-setting flexibility.

Known challenges exist for monitoring customer behaviors:

- Detailed water use data is generally unavailable to Valley Water as the wholesaler posing a challenge for ongoing monitoring of customer behavior

QUESTIONS





Water Rate Assistance Program Update

July 14, 2026

Rachael Gibson, External Affairs

WRAP Program Summary

Current Status: Third program year (PY) in progress.

Goal: Provide one-time (per program year) emergency water bill payment assistance to LIHEAP-eligible households in Santa Clara County.

Current Challenges:

- Projected funding gap for PY3
- Barriers to customer access

Opportunities:

- Program Evolution
- Streamline Intake

Participant Profile:

Historical Baseline (Program Years 1 & 2)

Households with:



Person living
with disability

679 (15%)



Person older
than 60

2,543 (59%)



Children
under 5

1,186 (28%)

Average annual household income: **\$26,412**

Participation barriers and Impacts

- **Overcoming stigma & power imbalances**
- **Eliminating administrative hurdles & verification red tape**
- **Strategic bottom line**

WRAP Utilization Across Program Years:

Total Payments: **5,544** as of May 26, 2026

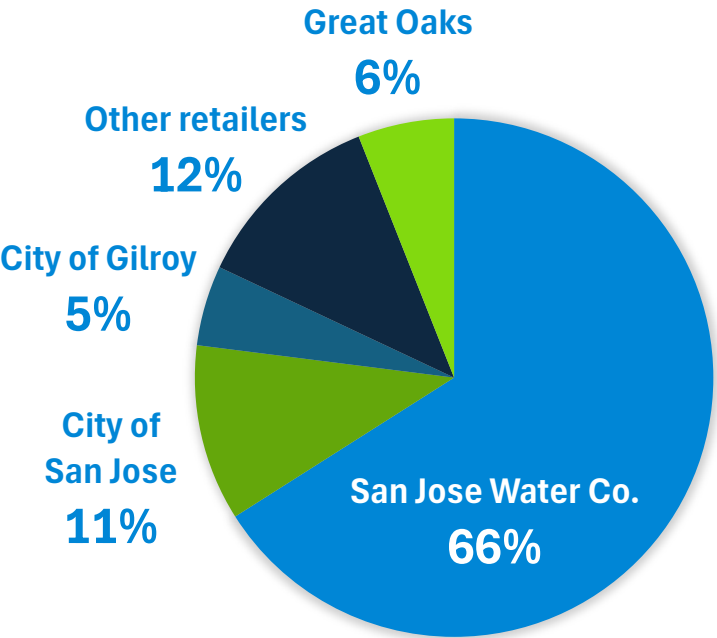
Total Funding Distributed: **\$2.53M** as of April 26, 2026

Program Year 1 (Sept. 21 – May 23)		Program Year 2 (Jun. 23 – Nov. 24)		Program Year 3 (Sept. 25 – Apr. 26)	
# of eligible applications	2,119 (44%)	# of eligible applications	2,135 (40%)	# of eligible applications	1,290 (90%*)
# of applications	4,793	# of applications	5,401	# of applications	1,436
Funds distributed	Total: \$1.02M/\$1M Aver. Bill: \$481	Funds distributed	Total: \$982K/\$1M Aver. Bill: \$460	Funds distributed	Total: \$532K/\$1M Aver. Bill: \$412

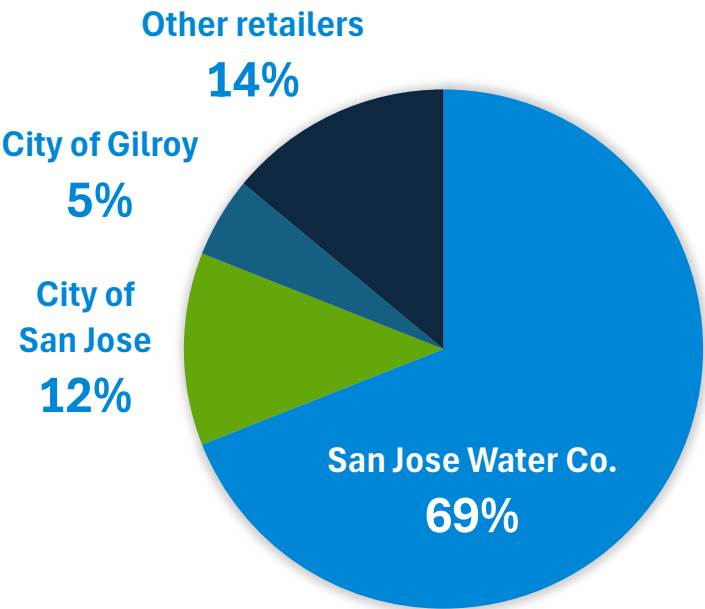
*Includes backlog of eligible applicants from PY2

Percentage of Payments by Retailer

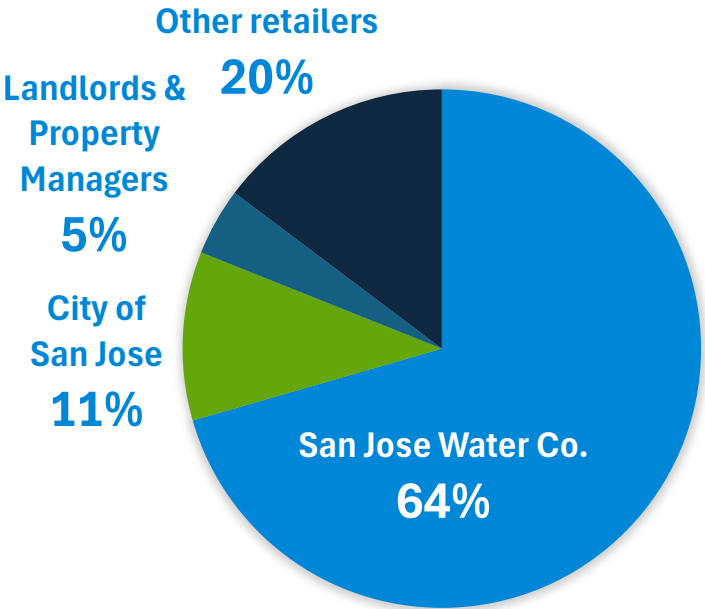
Program Year 1



Program Year 2

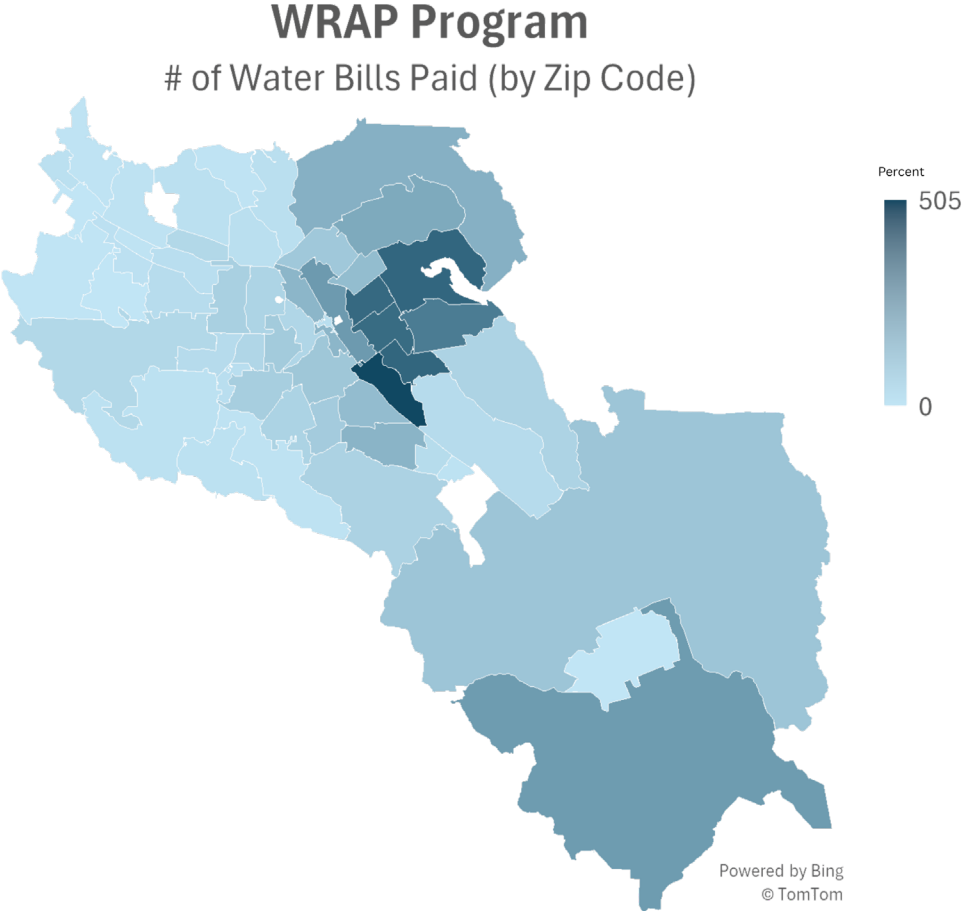
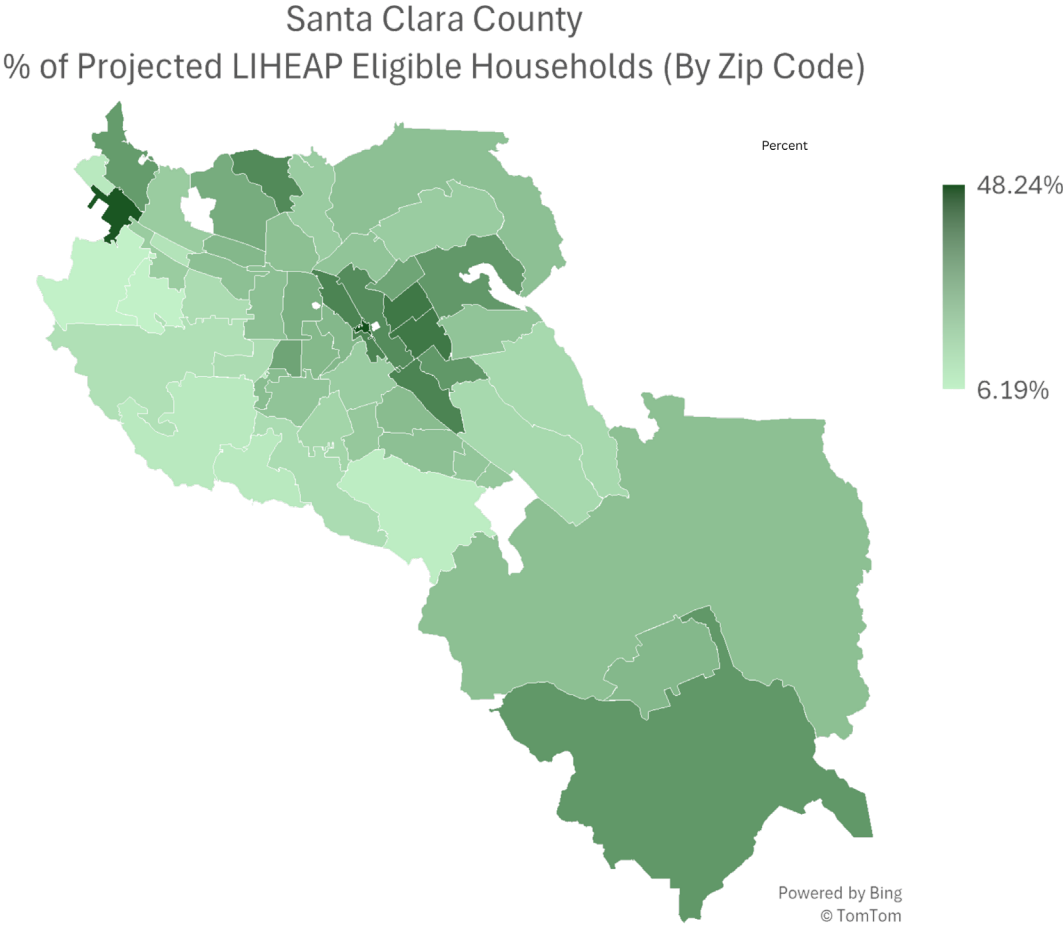


Program Year 3



Geographic Utilization

- Alignment of impact
- Core saturation



Opportunities

- **Program Year Alignment**
 - Transition to a standardized calendar year cycle
- **Coordination with other customer assistance programs**
 - Streamlined intake options

Transition to a sustained assistance model

- Operational efficiencies to reduce barriers
- Bolster utilization tracking

Questions

Backup

**Raftelis & Hazen
Final Study Results**



Glossary of Terms

- HCF: Hundred Cubic Feet (748 gallons)
- gpcd: gallons per capita per day
- MHI: Median Household Income
- LQI: Lowest Quintile of Income
- AR: Affordability Ratio
- HW: Hours at Minimum Wage
- PPI: Poverty Prevalence Indicator
- HBI: Household Burden Indicator
- SFR: Single Family Residential
- MFR: Multi-Family Residential
- PPH: Persons per Household
- CPUC: California Public Utilities Commission
- EPA: United States Environmental Protection Agency
- MIT: Massachusetts Institute of Technology
- CIP: Capital Improvement Program
- SWP: State Water Project
- CVP: Central Valley Project
- SFPUC: San Francisco Public Utilities Commission
- RI: Residential Indicator
- AWWA: American Water Works Association
- WEF: Water Environment Federation
- NACWA: National Association of Clean Water Agencies
- PUMS: Public Use Micro Statistics
- FPL: Federal Poverty Level
- California Urban Water Agencies (CUWA)
- California Water Association (CWA)

Residential Affordability Indicators

Measurement Approaches (Metrics):		Used By
MHI RI: Median Household (Income) Residential Indicator	<i>Average</i> Water Bill / 50 th Percentile Household Income	California Urban Water Agencies (CUWA), California Water Association (CWA), EPA, SFPUC
LQI RI: Lowest Quintile Income	<i>Essential</i> Water Bill / 20 th Percentile Household Income	EPA, SFPUC
HMW: Hours at Minimum Wage	<i>Essential</i> Water Bill / Minimum Wage Rate	California PUC, EPA
AR₂₀: Affordability Ratio	<i>Essential</i> Water Use Bill / (Total Income - Non-Discretionary Expenses ¹)	California PUC ²
HBI: Household Burden Index (HBI)	<i>Average</i> Water Bill / LQI	AWWA/NACWA “New Framework”
PPI: Poverty Prevalence Indicator	Population at or below 200% FPL/ Total population	AWWA/NACWA “New Framework”
Essential Water Use Bill	Bill at 47 gallons per capita per day	California PUC, CWA
Average Water Use Bill	Bill at 64 gallons per capita per day	CUWA, EPA, SFPUC

Retailer Affordability Characteristics*

Characteristics	North Zone	South Zones	Total Valley Water Service Area
% of Total Service Area Population	4% - 52%	3% - 5%	100%
Average Household Size	2.3 – 3.5	3.1 – 3.4	3.0
Minimum Hourly Wage	\$18.20 - \$19.00	\$18.20	\$18.30
Median Household Income (MHI)	\$120k - \$236k	\$142k - \$169k	\$169k
Lowest Quintile Income (LQI)	\$68k - \$80k	\$69k - \$112k	\$76k
Monthly Water Bill @ Essential Use (~6 HCF)	\$54 - \$98	\$45 - \$64	\$83
Monthly Water Bill @ Average Use (~8 HCF)	\$65 - \$118	\$52 - \$71	\$96

29 *All figures are rounded

Resulting Retailer Metrics – AR20, HMW, LQRI, MHRI¹

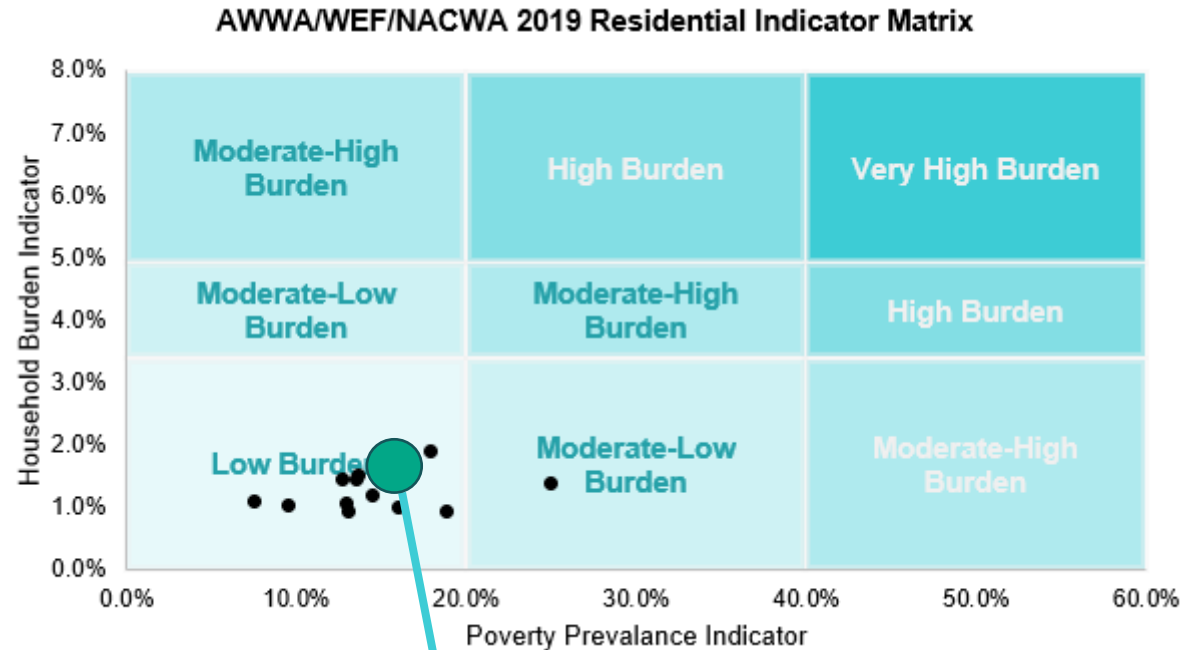
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 LQI RI	0.8% - 1.7%	0.8% - 1.0%	1.3%	2%
 MHI RI	0.4% - 0.7%	0.4% - 0.5%	0.6%	2%

¹All results shown at essential water use of 6 HCF

- AR20, LQI, and MHI are all below thresholds across the service area
- HMW is modestly above the threshold value across the service area
- Results are generally lower (water bill is less burdensome) in the South zones

Resulting Retailer Metrics – HBI/PPI Matrix

Retail Metrics	North Zone	South Zones	Total VW Service Area	Metric Threshold Low Burden
HBI	0.8% - 1.7%	0.8% - 1.0%	1.3%	3.5%
PPI	7.5% - 25%	13% - 19%	15.7%	20%



- HBI and PPI are both within the low burden category
 - › All but one retailer are in the Low Burden category
- Both metrics have a wider range in the North zones than in the South zones

Valley Water Service Area
Result (Weighted Average)

Resulting Retailer Metrics – Estimate of Affordability Impact¹

Retail Metrics	North Zone (per Retailer)	South Zones (per Retailer)	Estimated Households Valley Water Service Area ²
Estimated Number of Customers with Unaffordable Water Bills	200 – 24,000	1,000 - 1,200	37,000

¹ Estimate of customers that could be have bills considered unaffordable

² Out of approximately 625,000 households

- Estimates extrapolated based on public use micro statistics (PUMS) household survey data including self reported income, water use, household size, and/or payment of a water bill
- Then, calculate bills over 2% of reported household income *and* estimated essential water use at each retailers' service area rates
- **Household water bills estimated as unaffordable across the Valley Water service area is 5.95%**

Groundwater Benefit Zones

North County Zone W2

- Santa Clara County north of Metcalf Road

South County Zone W5

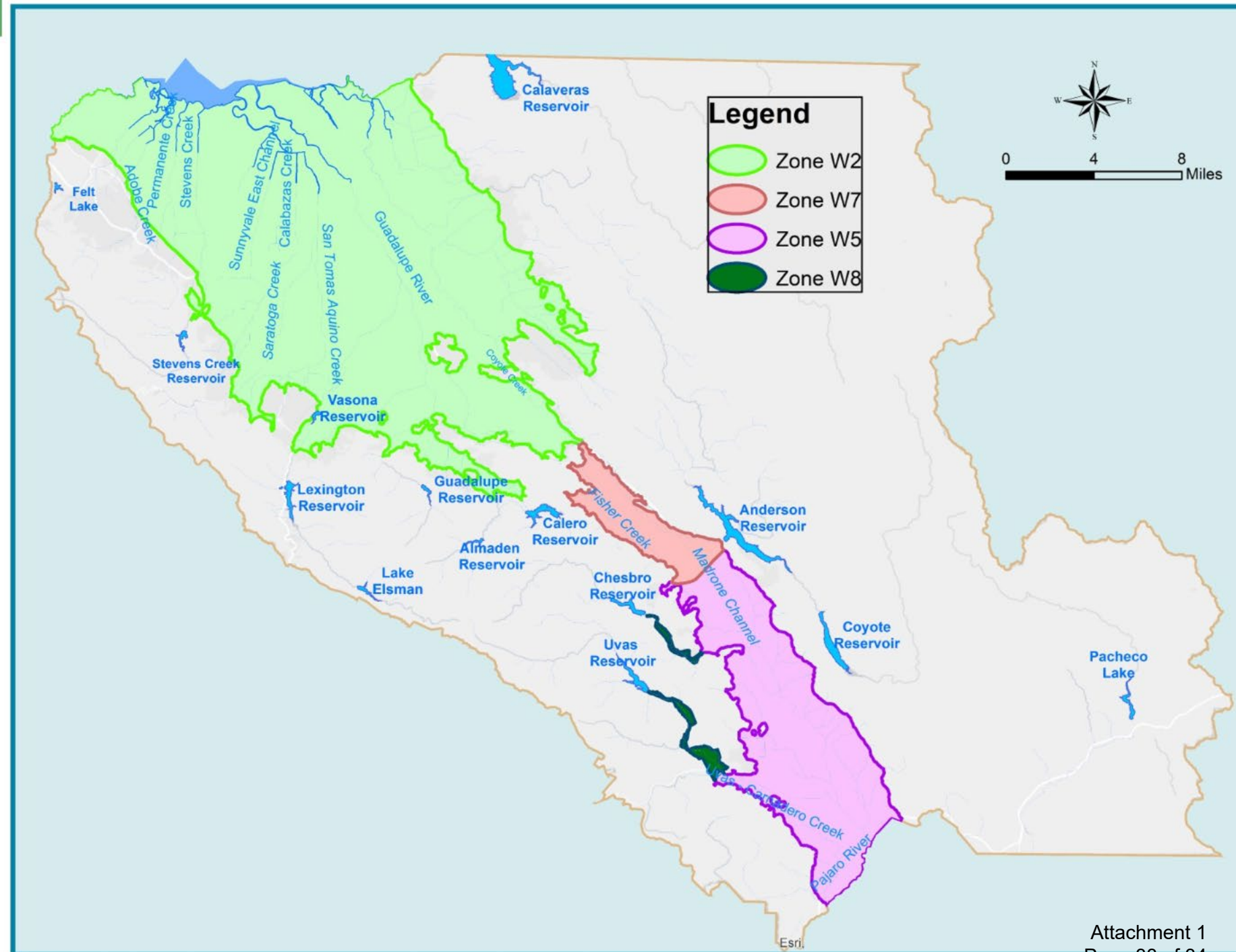
- Morgan Hill to Pajaro River

South County Zone W7

- Coyote Valley

South County Zone W8

- Foothills below Uvas & Chesbro Reservoirs



Water Retailers in Santa Clara County

