

This presentation premiered at WaterSmart Innovations

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Closing the Loop on Savings

October 2, 2019 | WSI, Las Vegas, NV

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Overview



- Public Private Partnership Success
- Right Tools for the Job
 - Cooperation to Identify Opportunities
 - Expertise
 - Sustained Reduction Rebate Program
- Case Study: Amy's Kitchen Closed Loop Cooling

Amy's®



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City of Santa Rosa

- Population = 169,000
- Provide service to 52,000 Water Customers
- Deliver approx 20,000 acre-feet of water per year
- Treat approx 7 billion gal/year



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A Continuing Evolution



In 1987, while Rachel was pregnant with Amy and on bed rest, Andy went looking for ready-made meals at their local natural grocery store. When he couldn't find anything organic and vegetarian that satisfied their taste buds, they decided to make their own.



Category	Brand Rank
Frozen Entrée	#1
Frozen Convenience	#1
Frozen Pizza	#1
RTE Can Soup	#1
Shelf Stable Chili	#1

Working to Heal the Earth

Amy's



Campbell's

-6%

PROGRESSO

-8%

Amy's

+16%

Healthy Choice

-28%

-48%

WOLFGANG PUCK

-43%

-8%

- STRATEGY ALIGNED & deliberative
- Start with MATERIALITY
- Leverage PARTNERSHIPS

From Challenge to Opportunity

- From bad press to creative solutions
- Cooking up savings for Amy's Kitchen
 - Complex water balance
 - Water-use efficiency assessment



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City program helps Amy's Kitchen cut water use



SLIDE 2 OF 3

Hugo Calderon pre-cleans buckets at Amy's Kitchen in Santa Rosa, Thursday, August 14, 2014. Amy's has started a new system which has helped them reduce water use by 30 percent. (Crista Jeremiason / The Press Democrat)

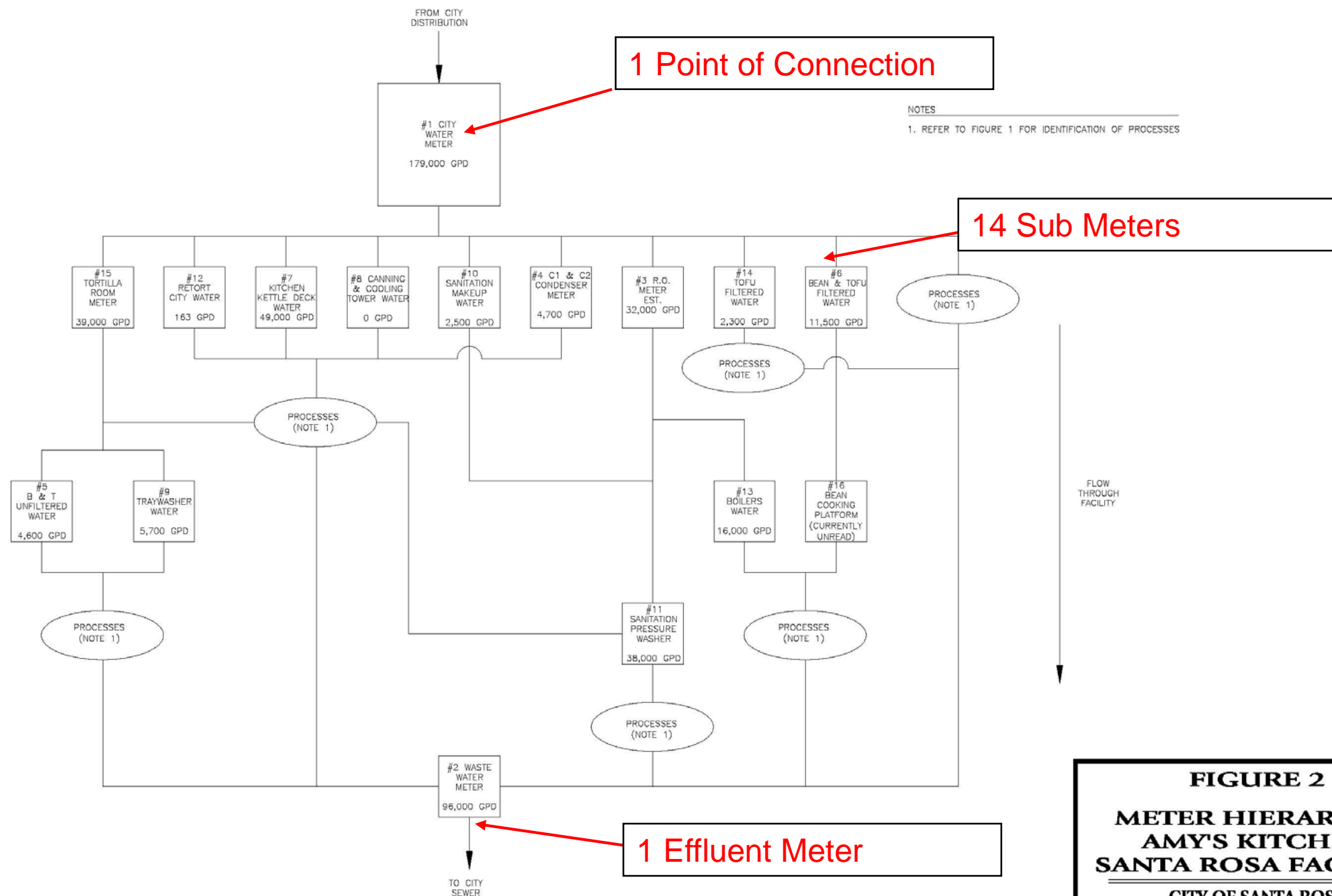


FIGURE 2
METER HIERARCHY
AMY'S KITCHEN
SANTA ROSA FACILITY
CITY OF SANTA ROSA
CII WATER USE EFFICIENCY PROGRAM
JULY 2014

- Clarifies water use distribution within a facility
- Indicates effective water use efficiency opportunities

Key Enabler - Sustained Reduction Rebate

- Hardware or process changes that result in sustained savings
- \$200 per 1,000 gallons avg monthly reduction in demand
- Cost effective program
 - \$362 per AF for rebate
 - \$918 per AF wholesale



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Maximizing Impact

Amy's



REPORT OF WATER BALANCE AND WATER-USE EFFICIENCY ANALYSES

AMY'S KITCHEN WATER- USE EFFICIENCY ASSESSMENT

CITY OF SANTA ROSA

JULY 29, 2014

Report of Water Balance and Water Conservation Analyses
Amy's Kitchen Water-Use Efficiency Assessment
City of Santa Rosa

6. RECOMMENDATIONS

It appears that Amy's Kitchen is already working internally to address water-use efficiency. The water balance presented in this report provides a map and baseline for planning and evaluating future conservation efforts. Two areas where considerable water savings may be realized are the R.O. unit and the cooling water system for the Kitchen Kettle Deck.

Amy's Kitchen personnel states that the R.O. unit is currently operating at a 50% recovery rate (i.e. one gallon of filtered water is produced for every two gallons fed into the unit). Typical recovery rate ranges for industrial R.O. systems are between 50% and 85%; thus, Amy's is currently operating at the low end of this range. If the recovery rate could be increased, the water savings would be significant. For instance, if the recovery rate was increased to 75%, the R.O. unit feed water requirements would be reduced from 32,000 gpd to 21,300 gpd and a savings of almost 4,000,000 gallons per year would be realized while still producing the same quantity of boiler feed water. In addition, nearly 2,000,000 gallons less per year of reject water would be produced and discharged to the sewer. Cost savings to be realized from this effort would be significant, but are not able to be accurately quantified until further analysis of boiler feed water quality requirements and electrical power consumption are undertaken.

A closed loop chilled water system should be evaluated for cooling product on the Kitchen Kettle Deck. If a closed loop system was put into place, a water savings of nearly 18,000,000 gallons per year could be realized, since only a small fraction of the current water use would be required as makeup water. However, the water cost savings attributable to this conservation measure would need to be compared to the capital costs of installing the closed loop system in addition to the ongoing costs of upgrading and running circulating pumps, chillers and associated heat rejection equipment.

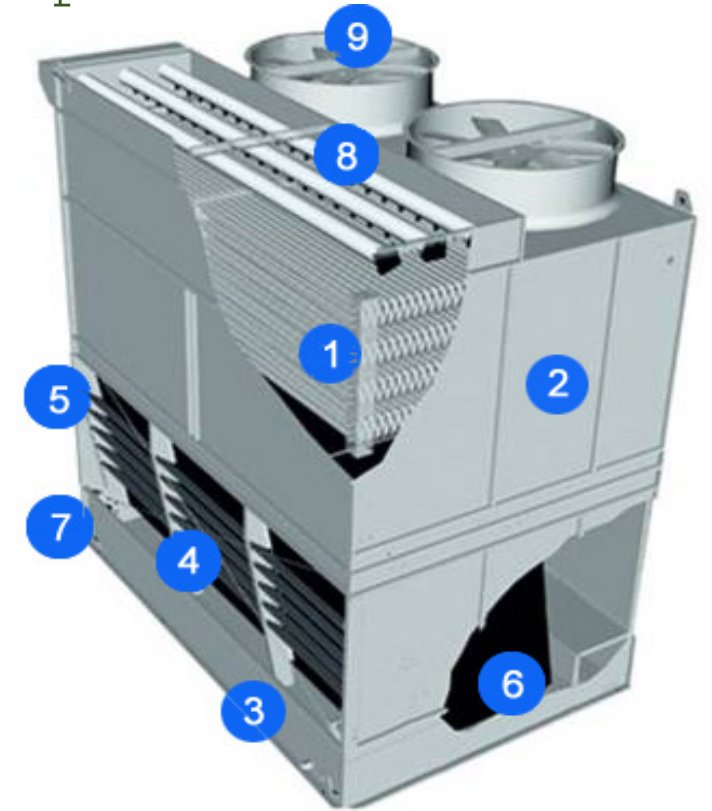


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SIGNIFICANTLY Reduce Water Usage in Product Cooling

Remove all (12) Kettles from the current once thru domestic water cooling system.

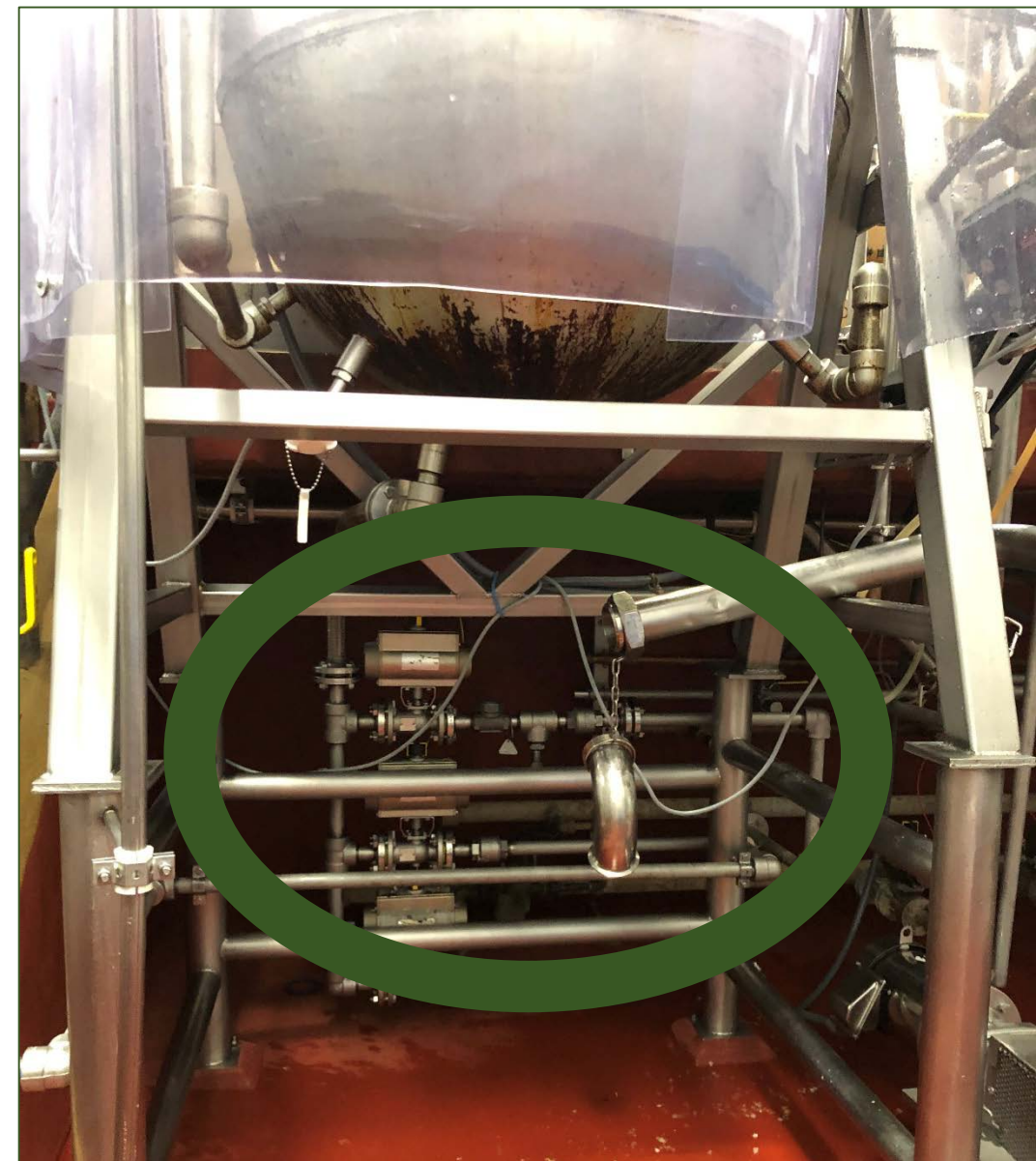
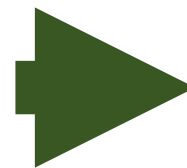
Replace with a closed circuit evaporative fluid cooler with plate and frame glycol heat exchanger.



BENEFITS

- Save ~12M gallons of potable water per year
- Increase rate of production capability

From this...

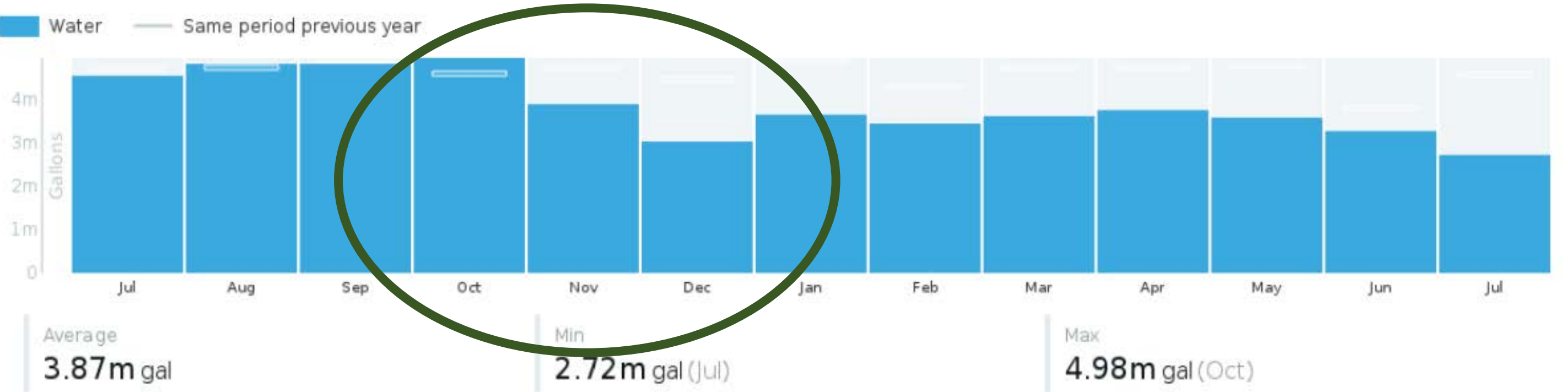


...To this

Measurable Savings



Monthly Water Consumption-12 Month / Jul 1, 2018-Jul 31, 2019

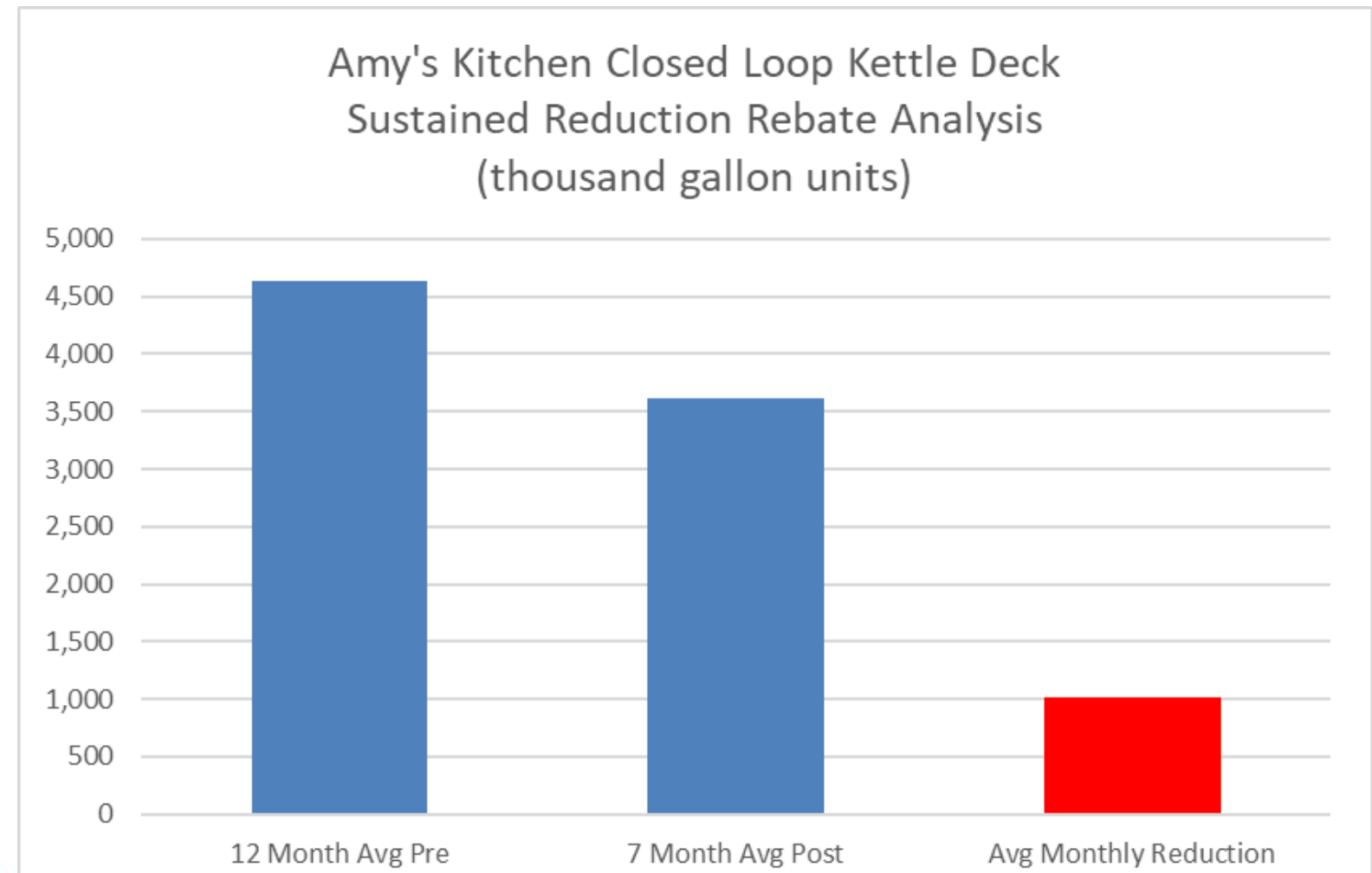




1.5x /
month

Sustained Reduction Rebate

**\$200,000 incentive
to support project
implementation**

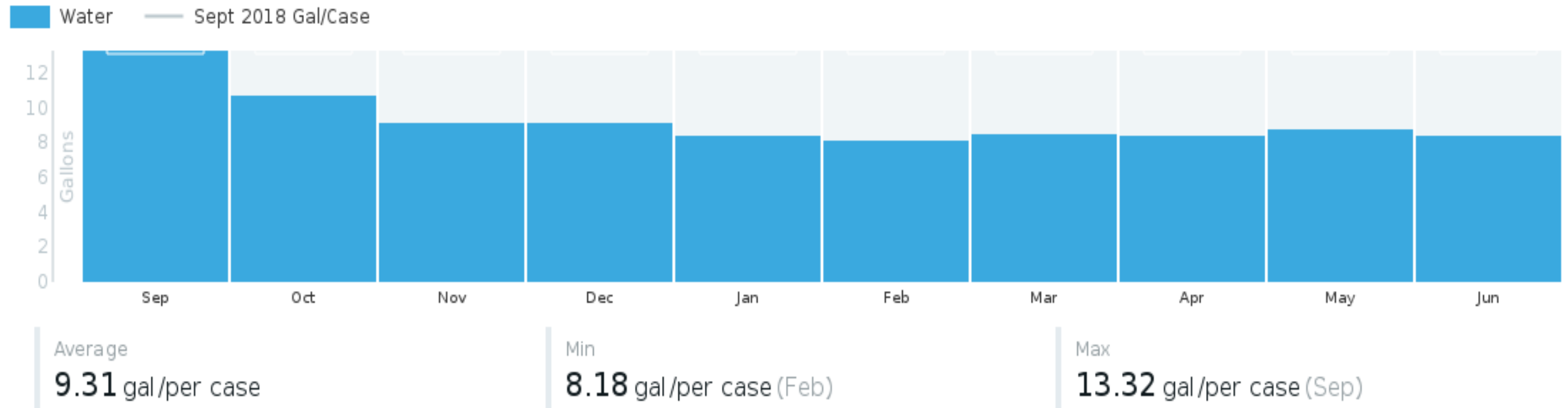


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Tangible Business Impact



Water per Case / Sep 1, 2018-Jun 30, 2019



Takeaways

- Communication
- Collaboration
- Tenacity
- Sustained Reduction Rebate
 - Flexible/adaptive
 - Drives innovation
 - Brings out the best in government



Questions?

