

This presentation premiered at WaterSmart Innovations

watersmartinnovations.com





Behavioral Water Efficiency = Power to Nudge

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City of Sacramento

Peter Yolles, Founder
WaterSmart Software

City of Sacramento

Population

475,112

Water sources

85% surface water; 15% ground water

Surface water sources

60% Sacramento River; 40% American River

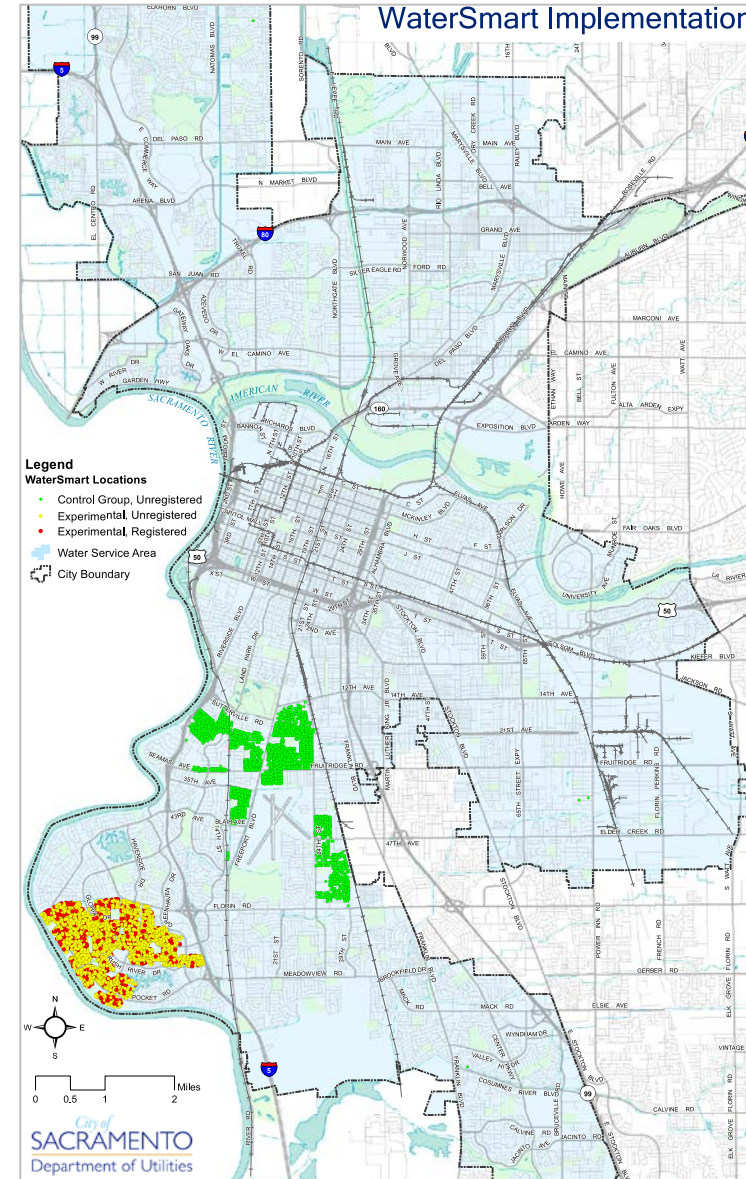
Accounts

over 130,000; 92% residential single-family

52% metered

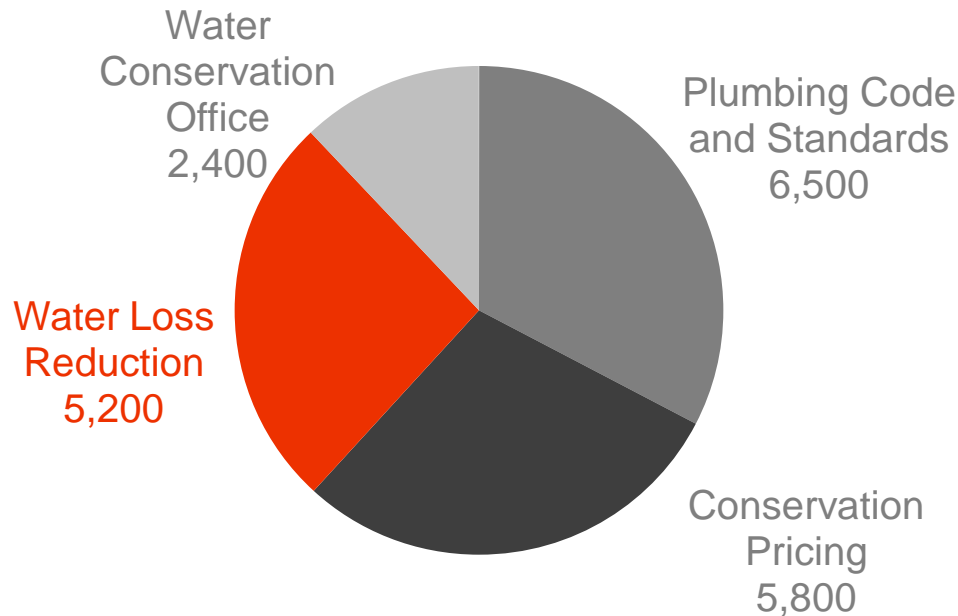
- 26,999 AMI
- 38,505 mobile meters
(will be converted to AMI within 18 months)

WATERSMART SOFTWARE



Planned efficiency efforts

WATER SAVINGS IN YEAR 2020 (AFY)
FROM CITY OF SACRAMENTO'S WATER CONSERVATION PLAN



- Water conservation measures
- Metering, customer leak detection and pricing
- System leak detection

Goals

Increase:

- Water-use efficiency
- Leak detection using AMI & alerts
- Program participation (e.g., rebates)
- Gauge interest in consumption information

Fulfill grant requirements:

“Follow the Meter” program funded by U.S. Bureau of Reclamation



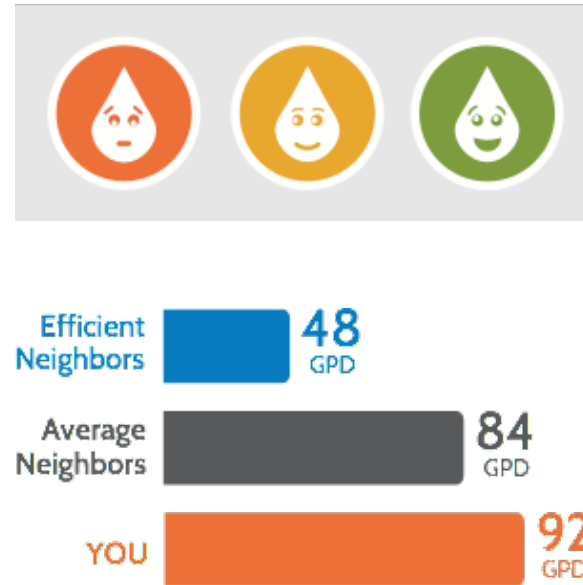
Behavioral water efficiency

Engage customers with enhanced water-use information that motivates and enables efficiency.

INFORMATION



SOCIAL NORMS



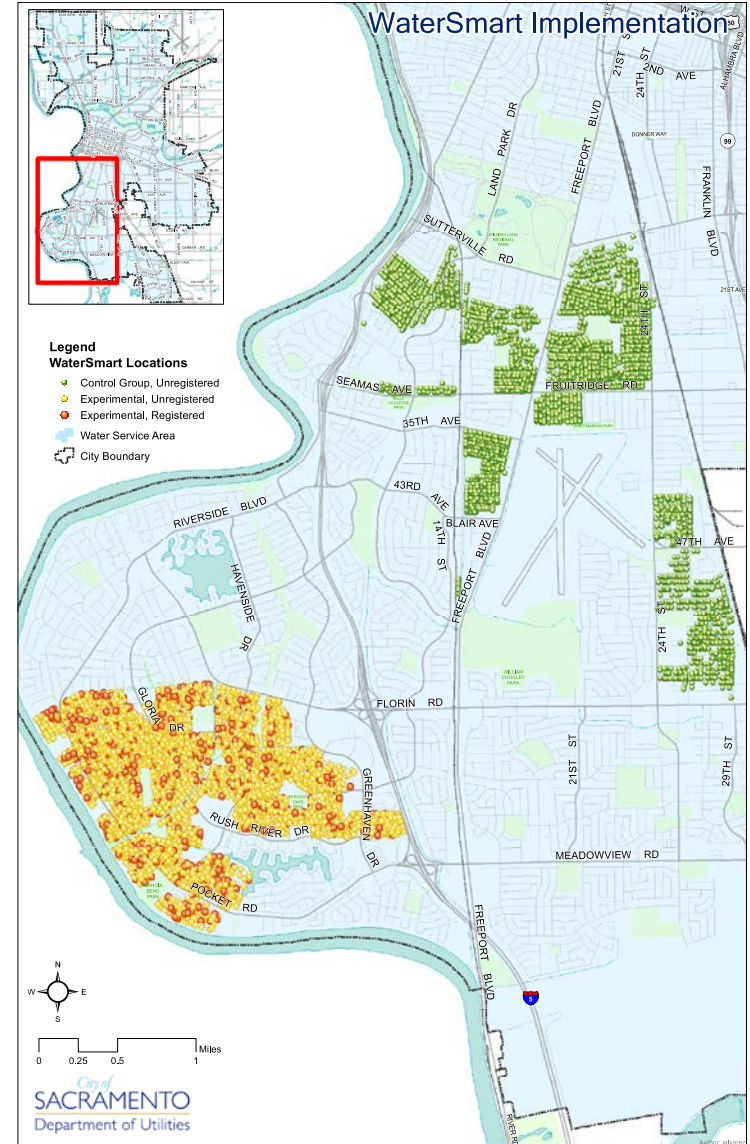
Pilot set-up



5,000 homes in
Land Park/Pocket
neighborhood receive
Home Water Reports
beginning September, 2013.

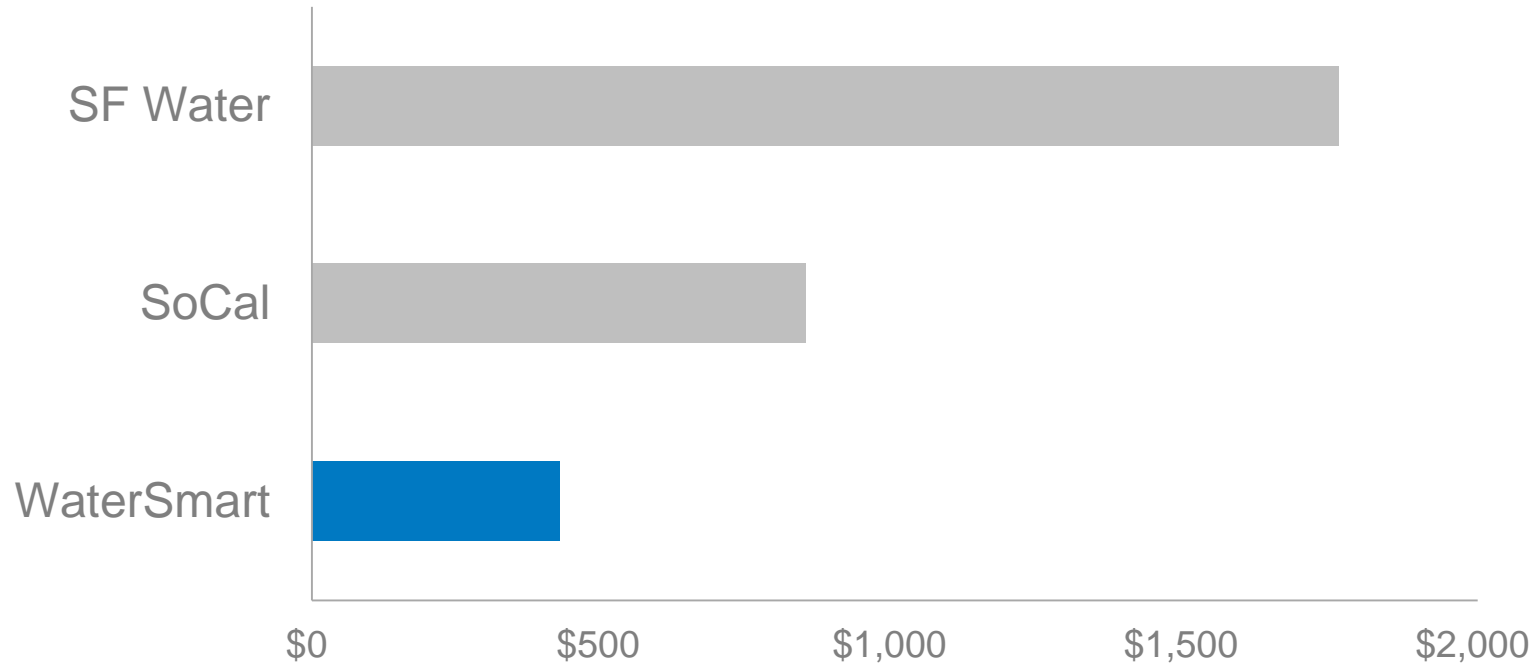


6,400 homes in
Control Group, from which
propensity-matched
homes drawn for analysis.



WHY CONSERVE?

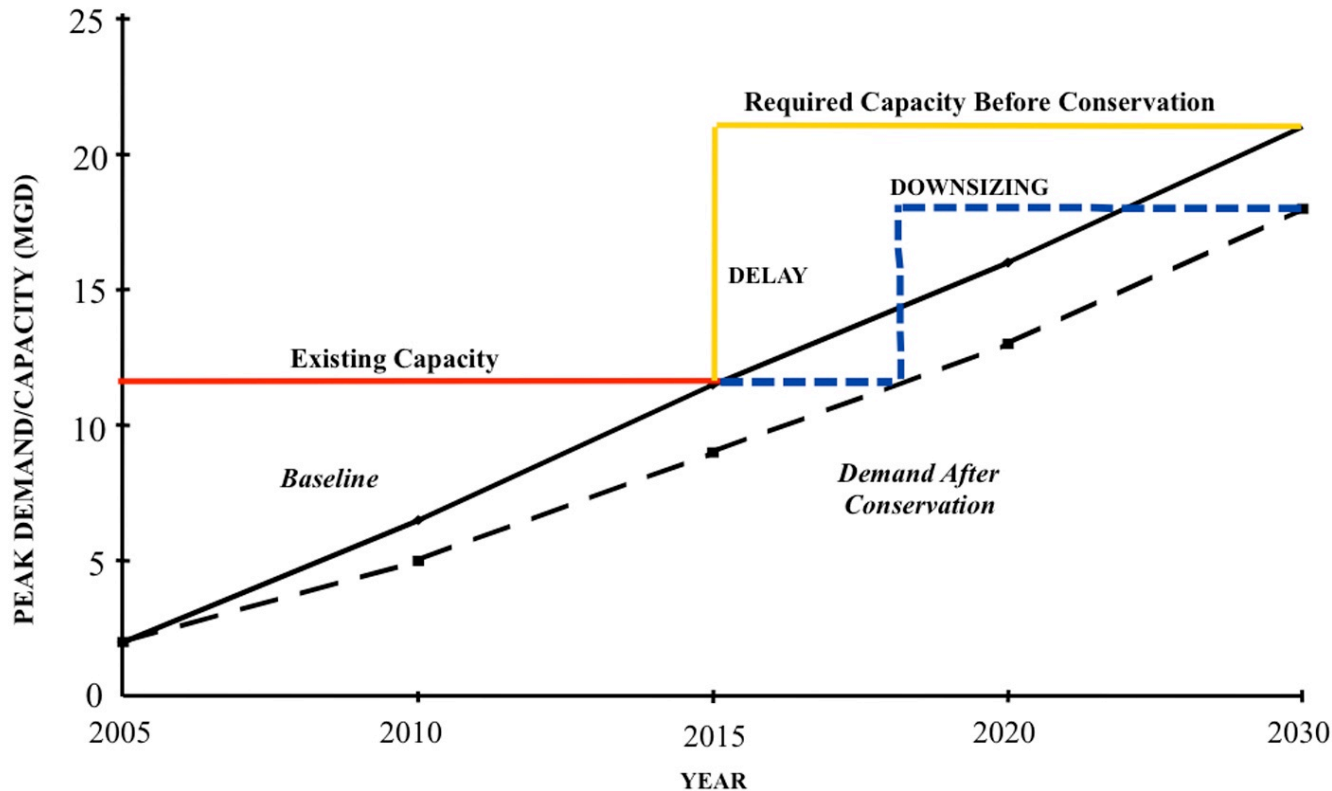
Reduce operating expenses



SAVING WATER IS CHEAPER THAN BUYING WATER OR BUILDING

WHY CONSERVE?

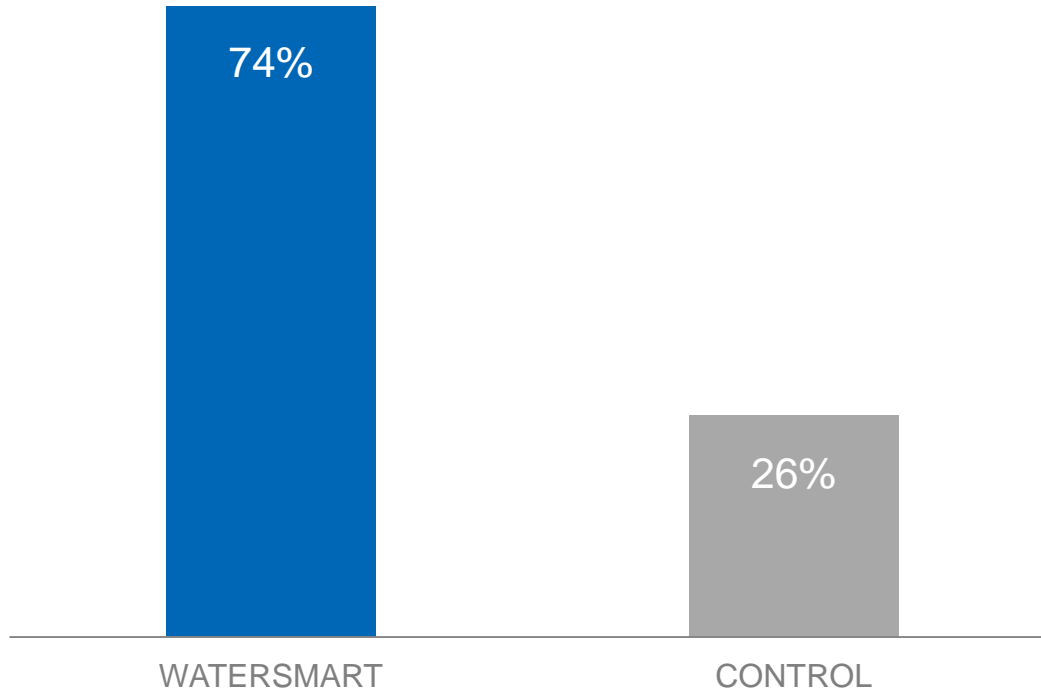
Reduce capital expenses



DELAY, DOWNSIZE OR AVOID NEW WATER SUPPLY PROJECTS

WHY CONSERVE?

Triple customer engagement



Requested Onsite Water Consultation

CUSTOMERS AS PARTNERS INSTEAD OF RATEPAYERS

WHY CONSERVE?

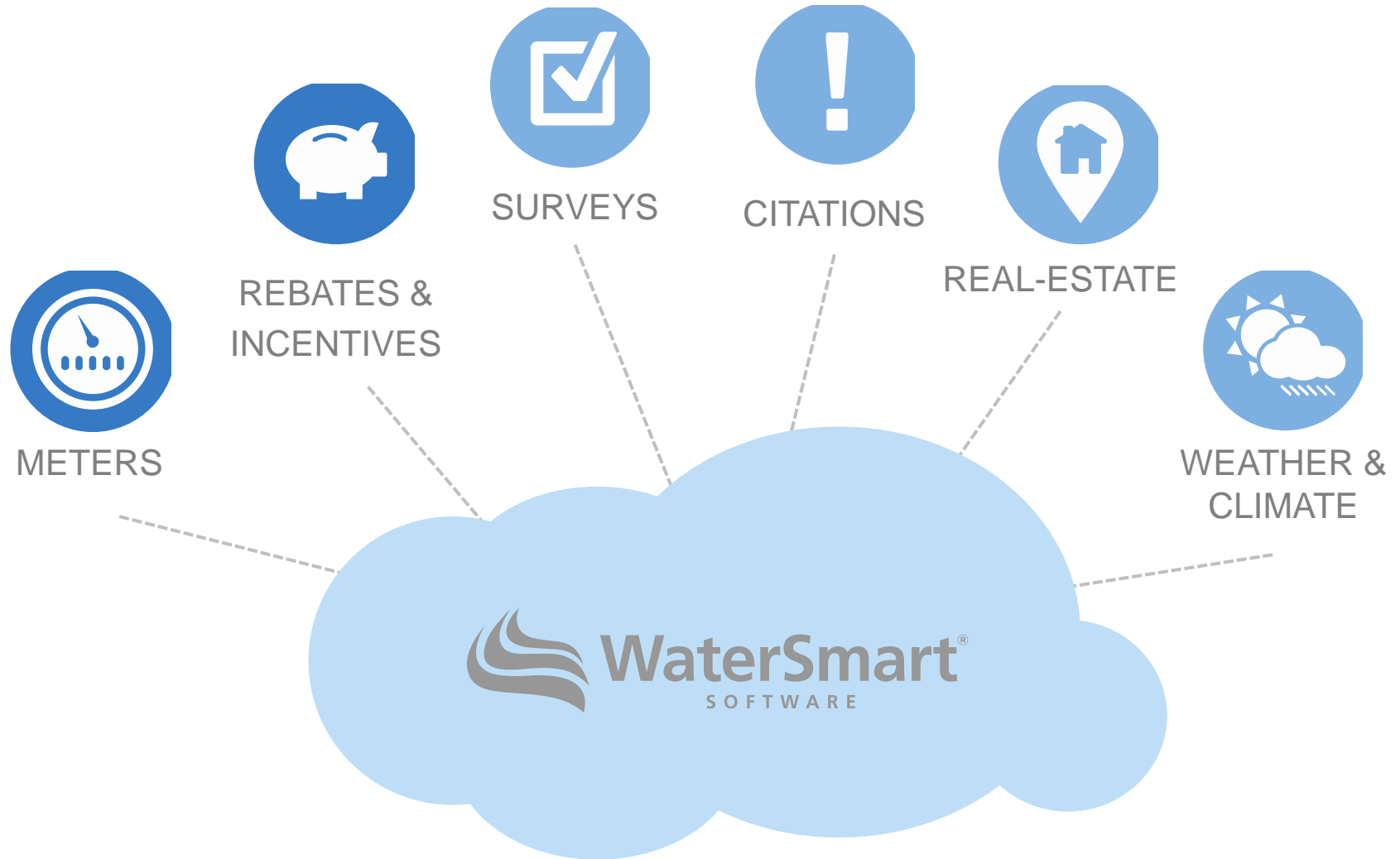
Awareness affects behavior



PERCEIVED USE OFTEN DOES NOT MATCH ACTUAL USE

WaterSmart makes
it personal

Data inputs



Outputs



CUSTOMER
HOME WATER REPORTS &
WATERINSIGHT PORTAL



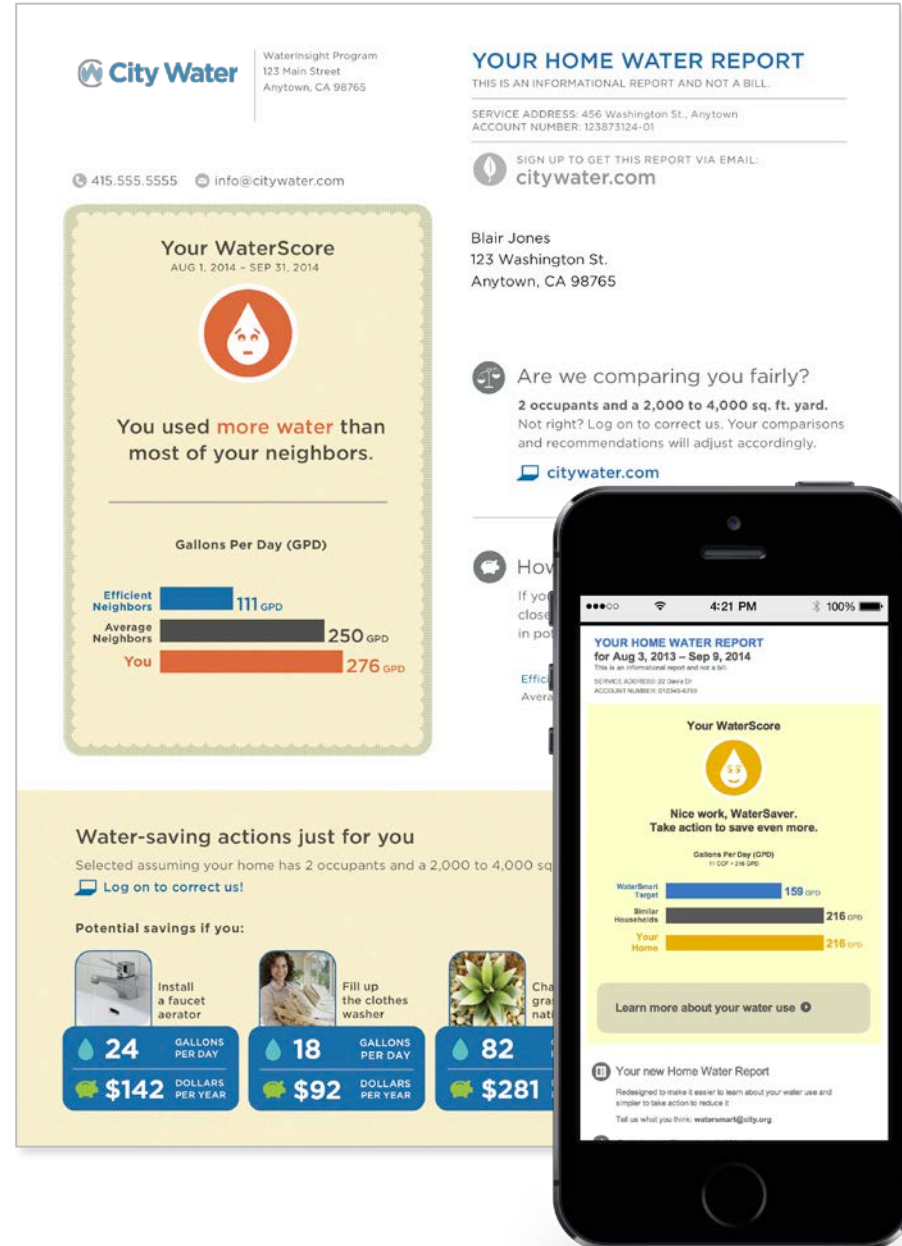
UTILITY
DASHBOARD &
PROGRAM OUTCOMES



Home Water Report

Contents

- WaterScore
- Water use in GPD
- Comparative consumption
- Rotating message modules
- Personalized water-saving actions
- Prominent URL placement



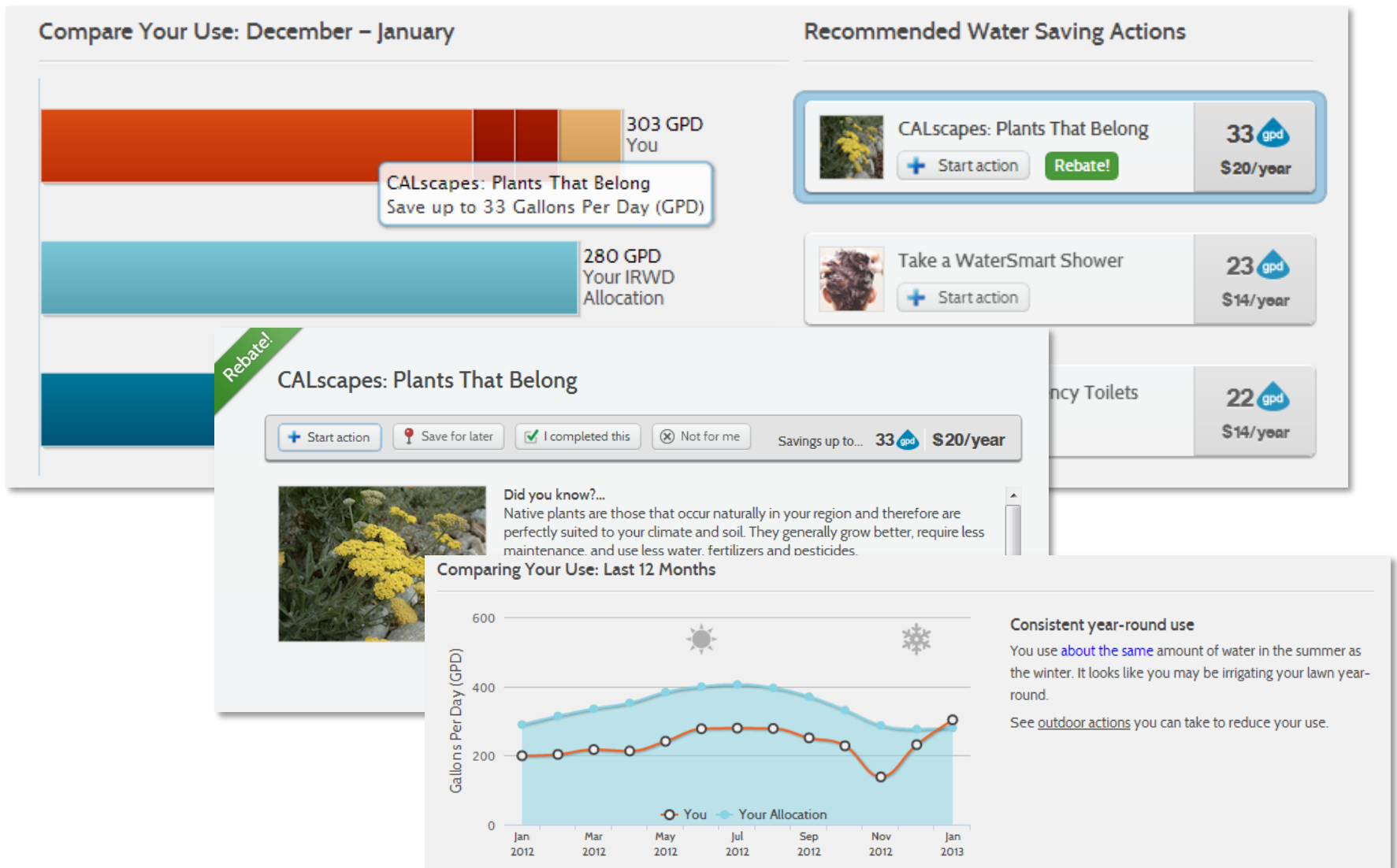
Customer Portal

Contents


- Neighbor comparisons
- Historical trends
- Seasonal use
- Estimated end use
- Targeted Recommendations
- “My Actions”
- Nudges & Alerts
- Real-time use (if AMI)





Personal and relevant analysis



Visual actions and savings

 **Track Usage**

 **Ways To Save**

 **My Actions** 4

Recommended (6) Cash Back (0) Yard (11) Home (15) All (22)

Irrigation Controller Rebate

[Get started](#)



 Save

Savings up to... **97 gpd** | **\$340/year**

Take a WaterSmart Shower

[Get started](#)



 Save

Savings up to... **57 gpd** | **\$198/year**

High-Efficiency Toilet Rebate

[Get started](#)



 Save

Savings up to... **26 gpd** | **\$93/year**

Raise Lawnmower Blades

[Get started](#)



 Saved [undo](#)

Savings up to... **14 gpd** | **\$50/year**

Brushing Teeth? Water Off!

[Get started](#)



 Save

Savings up to... **9 gpd** | **\$32/year**

Fill Your Bathtub 1/3 Full


[Get started](#)





 Save

Savings up to... **5 gpd** | **\$18/year**

Personal action plan


 **Track Usage**


 **Ways To Save**


 **My Actions** 4


Started Saved Completed (0) Ignored (0)

Water saving actions you have started.

 **Mulch Under Shrubs, Bushes and...** **Expert Advice**


 **Wash Your Car at Home Respon...** **1 gpd**
\$5/year

 **Clothes Washer Rebate** **18 gpd**
\$61/year

 **Hello Natives, Goodbye Grass** **365 gpd**
\$1274/year

Mulch Under Shrubs, Bushes and Trees

☒ I completed this ☐ Not for me

 Started on Oct 26, 2012. [undo](#)

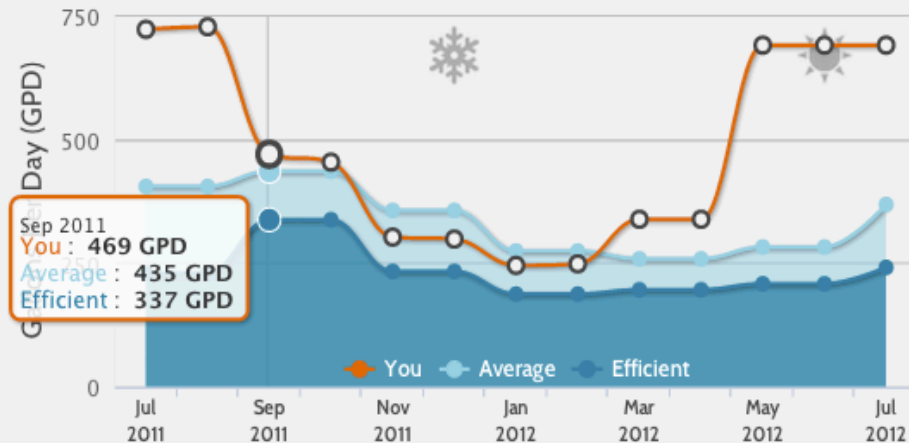
A 2-3" layer of mulch around the base of shrubs, bushes and trees helps to:

- Retain soil moisture;
- Provide essential nutrients; and
- Reduce weed germination and growth.

Remember to place mulch around your annuals, vegetable and flower gardens, too.

End-use tracking

Comparing Your Use: Last 12 Months



Strong seasonal use

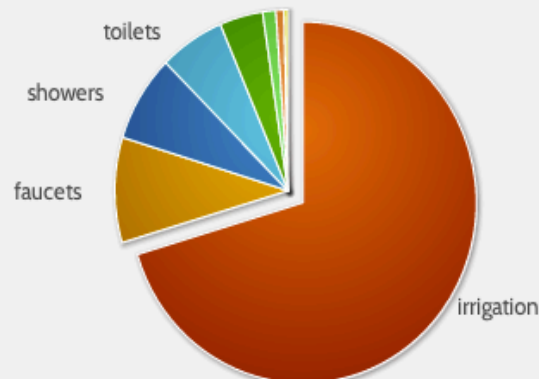
Seasons can have a strong effect on water use. You use **+155% more** when it's dry, likely due to outdoor watering.

Savings in summer

With high outdoor use, summer presents a great opportunity for savings.

Breaking Down Your Use: Last 12 Months

Estimated based on your [household profile](#).



Watch your irrigation

Your **biggest use** is irrigation at **70%**. The amount of water used by irrigation depends on climate, lot size, landscape, and your controller. Grass requires much more water than shrubs or plants, and a modern irrigation controller can help. [See outdoor recommendations.](#)

Real-time AMI + Leak Detection

 Home

 Track Usage

 Real-Time

 Ways To Save

 My Actions 1



Possible Continuous Leak

You used at least 3 gallons per hour continuously since Wed. Jul 10 2013.
That's 1,277 gallons!

[Investigate Possible Leak](#)

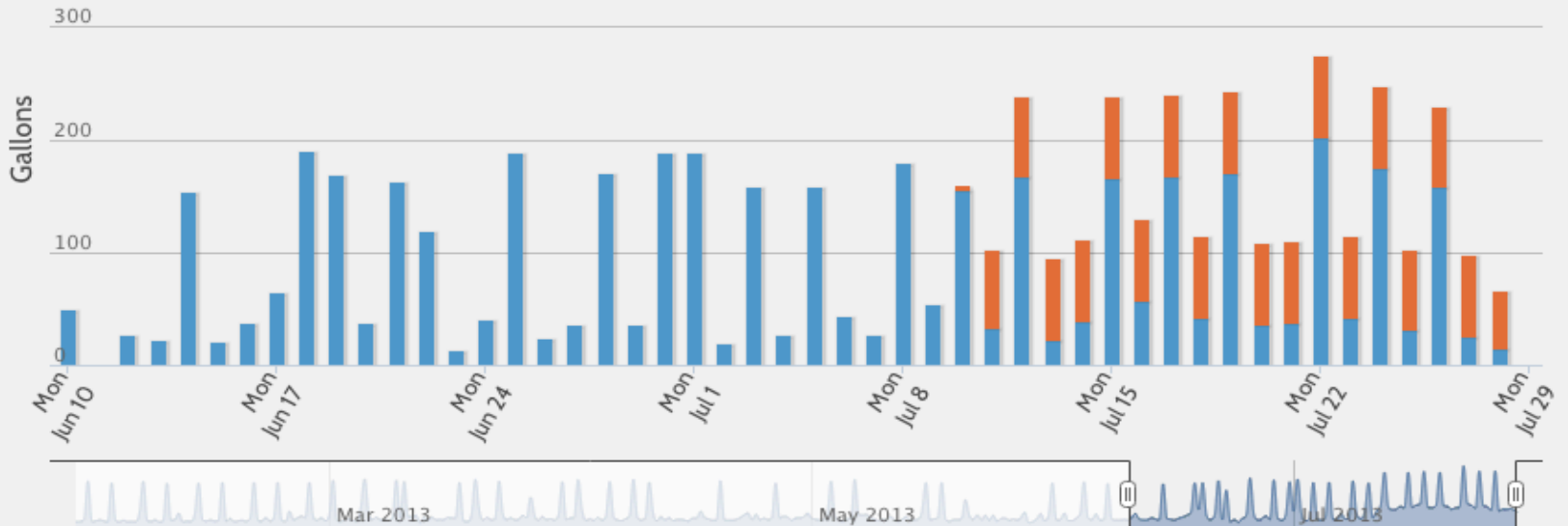
Day Week **2 Weeks** 2 Months Year

From: Jun 9, 2013 To: Jul 28, 2013

Your Water Use

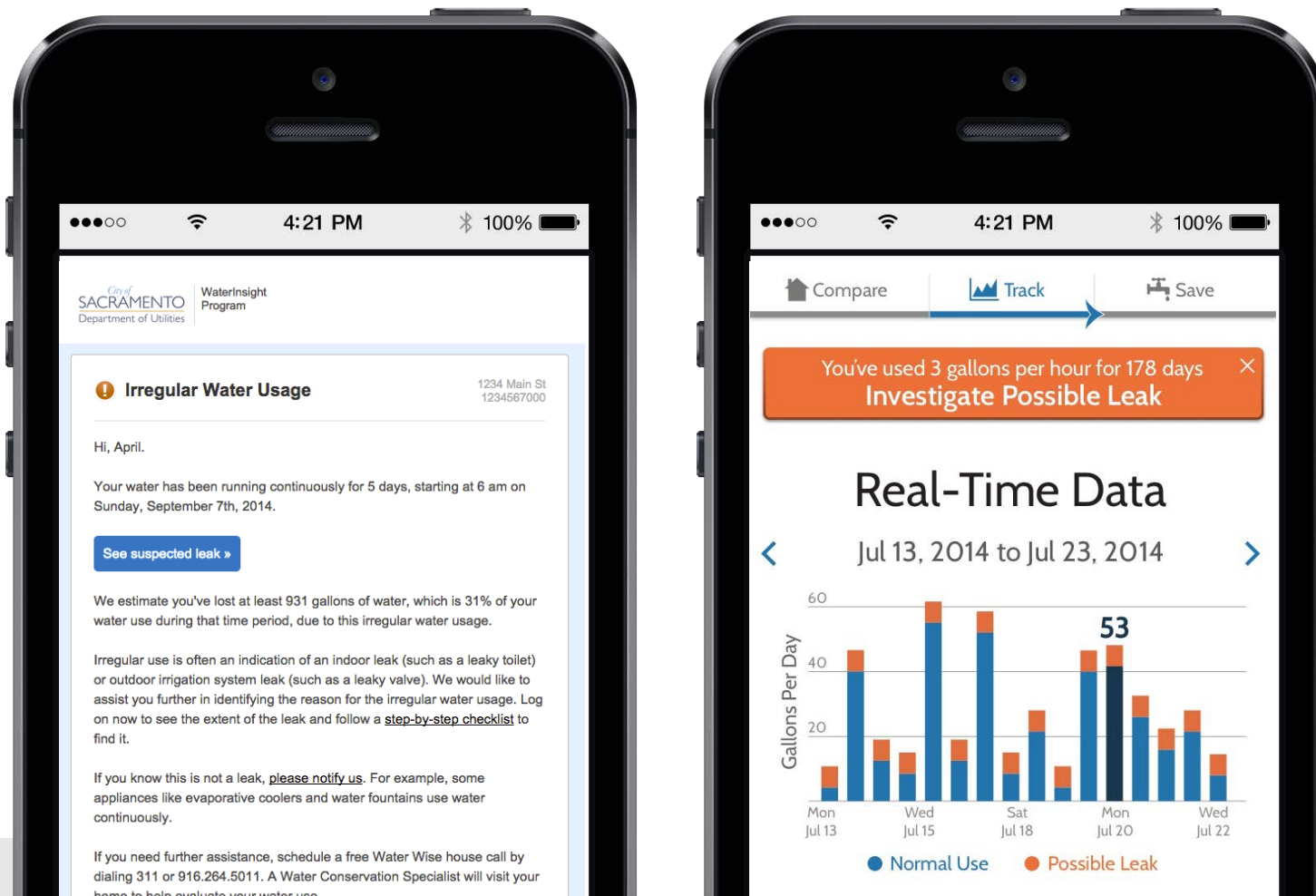
Normal use Possible leak

Last updated Sunday, Jul 28, 2013, 4pm



Leak alerts go mobile

- 71 leak alerts since Jan 10
- 37% viewed or investigated their leak



How the utility
monitors progress

Analytics Dashboard

Tools

- Customer relationship management
- Business intelligence & reporting functions
- Program management
- Water use analysis
- Feedback & tracking
- Leak & high use alerts
- Violation tracking TBD



CUMULATIVE SAVINGS TO DATE

5.4%, 98 Acre Feet



CUMULATIVE SAVINGS IN AF FOR ALL HOME WATER REPORT RECIPIENTS

AMI makes a difference



AMI customers saved
50% more water



Customers
without AMI:
4.4%

Customers
with AMI:
6.6%

Positive feedback

“I took two actions after the first report. I love receiving and reading my reports.”
—Linda P.

“I always wanted to conserve water, but the reports encouraged me to check my water use more often.”
—Julie H.

“I realized I have higher than average usage because I discovered a small leak at the connection of the anti-siphon valve. Continuous leak. I have replaced it with a new anti-siphon valve today.”
—Thomas L.

What's next

- Positive feedback from Director, City Manager, and customers
- Thank you to U.S. Bureau of Reclamation for funding
- Continuing and expanding the program

Thank you

City of
SACRAMENTO
Department of Utilities



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