

Social norms based customer engagement on water efficiency

Roseville, California, USA

water scarcity impact



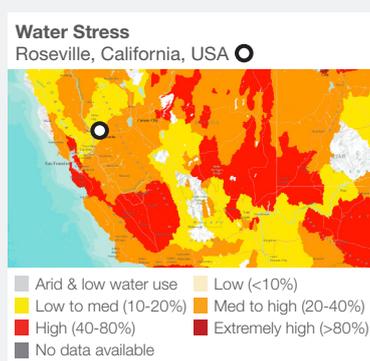
Reduced withdrawal	●
Reduced consumption	
Improved water quality	
Increased productivity	
Net basin benefit	

volumetric impact
880 000 m³/yr

programme cost
\$75 000



estimated unit cost of water
10 ¢/m³

Water Stress Map:
F. Gassert, P. Reig, T. Shiao, M. Luck and M. Landis, 2015. "Aqueduct Global Maps 2.1."

Confidence level
● Low ● Medium ● High

Water Scarcity Impact Key
● Main ● Minor

Credits
We would like to acknowledge Peter Yolles and Jeff Lipton of WaterSmart Software for their input in the preparation of this case study.

Project Overview

The Water Utilities Department of City of Roseville engaged WaterSmart to implement the Water Insights online platform to enhance the engagement with its residential customers. The aim was to provide them with personalised information about their water use, to educate them on the value of water and to improve water use efficiency through a social norms based programme.

The Water Insights initiative was delivered as part of a wider water efficiency programme, which included home water audits, water efficient retrofits, and rebates for low flush toilets and water efficient landscapes. The programmes were initiated in order to achieve the 20% reduction in water use by 2020, as mandated by the California Water Conservation Act 2009.

The Water Insights online platform currently provides households with a Home Water Report, which includes social norms based messages comparing their daily water use compared with cohort of similar households as well as with water efficiency households. This has been made possible due to universal use of Automatic Meter Reading (AMR) in the city.

With the aid of these tools, the City's Water Conservation Team has successfully informed, engaged, and educated the 18 000 participating households about their water use. This resulted in an additional 5.9% per year reduction in water use in comparison to the non-participating households.

Key Elements

- Regulatory mandate for 20% reduction in water use by 2020 by all sectors.
- Use of AMR meters and advanced analytics to monitor usage patterns for identification of potential leaks and to aid engagement and messaging.
- Home Water Reports with customised messages based on usage analytics and water savings recommendations for each household.

Key Outcomes

- 5.9% reduction in water use in comparison to non-participants.
- Expansion of the project to provide Home Water Reports to more residents.
- Enabled quick response to emergency drought orders imposed in 2015.



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Intervention Features

- Domestic demand reduction
- Tariffs and incentives
- Stakeholder engagement

Project Levers

(1) Regulatory mandated water use reduction

The California Legislature passed the Water Conservation Act in 2009 in response to ongoing drought. The Act mandated that communities greater than 3 000 residents must reduce their water use by 20% by 2020. Roseville's water use reduction programme was implemented with the aim to achieve these targets.

(2) Advanced metering and water use analytics

The installed advanced metering system enables provision of detailed information about water use by individual householders within the city, which are analysed to identify usage patterns and to identify potential leaks at an individual property.

The Utility Analytics Dashboard also maintains records of individual household's average water use and consumption patterns, as well as the level of engagement and prior communication. It also enables the Water Conservation team to customise messages, review their impacts and make changes where necessary.

(3) Home Water Reports

The Home Water Reports for participating households are available on the City's Water Insight portal. The reports provide personalised daily water use instead of the more abstract figure of monthly volume used. They also utilise social-norm-based messaging, which include comparisons of the household's water use to average use in the neighbourhood as well as by a similarly sized water efficient house. Finally, they recommend a list of measures that could be implemented to achieve further reductions in water use.

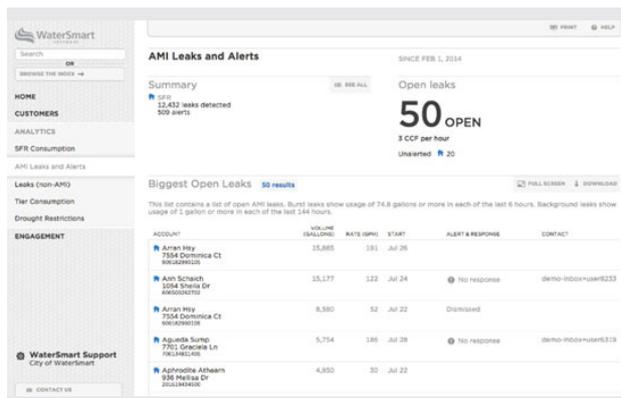
Outcomes and Challenges

The ongoing drought in Western United States and the unsustainable levels of withdrawals, as well as the resultant impacts on the environment and security of supply, prompted the Government of California to enact the Water Conservation Act in 2009.

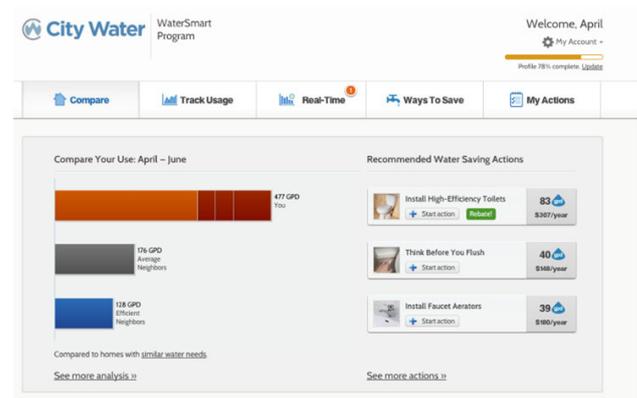
The City of Roseville and WaterSmart initiated the Water Insights programme in 2012. The AMR meters coupled with the analytics dashboard enables the Water Conservation Team to review current and historic water use by each household, evaluate the effectiveness of previous water efficiency messages and identify suitable new messages and recommended measures.

The charges for the WaterInsights programme are based on the number of participating households. For the 2013 - 2014 period, the platform cost Roseville \$75 000. This equates to \$0.08 per m³.

The Home Water Reports were found to be very adaptable and enabled the city authorities to quickly provide new guidance to participating households on complying with emergency drought orders that were brought into force in 2015.



Above: Leak alerts on Utility Analytics Dashboard (© WaterSmart)



Above: Measures to reduce water in Home Water Reports (© WaterSmart)