



# How can social norms be leveraged to promote water sensitive cities?

## What innovative, non-price approaches are available to manage water demand?

How can current conservation programs be modified to better promote water savings, particularly amongst high-use households? Is there a way to harness people's pre-existing beliefs and motivations in order to increase water sensitive practices? Recent studies suggest an understanding of social norms can provide valuable opportunities to target and tailor conservation programs and drive more effective policy development and outcomes.

Growing populations and diminishing water supplies are placing increasing pressure on public water providers to reduce demand for water. A range of newer demand management tools, such as social comparisons, personalised information, and peer communication and punishment mechanisms, offer the possibility of leveraging **social norms** – the ideas people hold about acceptable behaviour within their community – to improve the effectiveness of conservation programs and foster greater pro-social behaviour.

## What can social comparisons achieve?

**Social comparisons** inform households how their water use compares to the water use of their neighbours, and are an increasingly popular non-price water demand intervention.

Significantly, the first long-term (18-month), large-scale (7,361 households), multi-city (A, B and C, each in California, USA) randomised field experiment conducted on social comparisons in the water sector has found that social comparisons can engender reductions in water consumption – particularly amongst high-use households – and encourage the uptake of existing conservation programs (see Table 1).

Table 1. Key findings from the study of Brent et al. (2015)

The impact of social comparisons	
<b>Decrease water demand</b>	<ul style="list-style-type: none"> <li>• By 5% in A and B, when paired with personalised information on water conservation programs</li> <li>• No effect in C (different rate structure and method of information delivery)</li> </ul>
<b>Increase participation in conservation programs</b>	<ul style="list-style-type: none"> <li>• By at least 6 percentage points in A and B</li> <li>• Accounted for up to 25% of the water savings in A</li> <li>• Accounted for 3% of the water savings in B (where fewer high-use households signed up to conservation programs)</li> </ul>
<b>Best amongst high-users</b>	<ul style="list-style-type: none"> <li>• High-users were the most responsive to social comparisons (see Figure 1)</li> </ul>

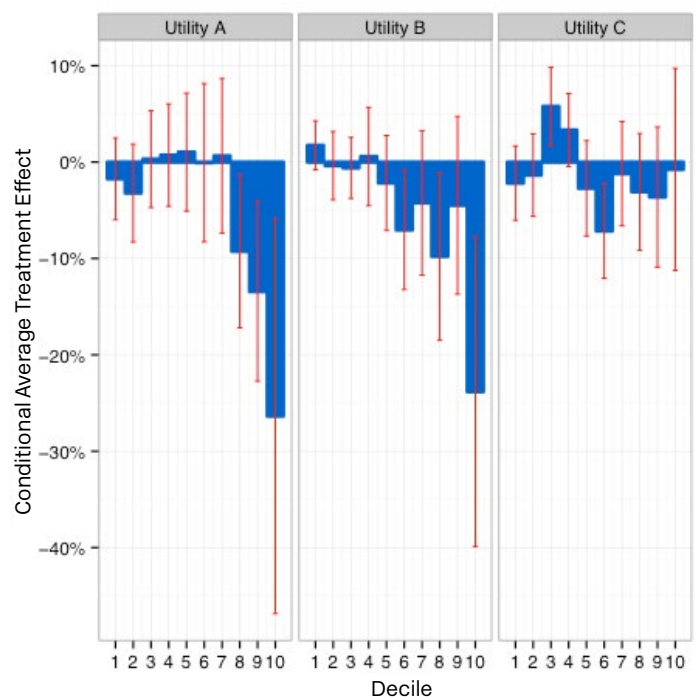


Figure 1. This is Figure 3 in Brent et al. (2015). The bars are estimates of conditional average treatment effects based on deciles of pre-treatment water use, and represent the effect of social comparisons on low and high water users. The error bars are 95% confidence intervals.



## What information should be given to water users?

Social comparisons promote water-saving behaviour by creating extrinsic (financially-based) and intrinsic (morally-based) motivations.

To explore these motivations, five water saving mail-outs (see Table 2) were recently tested in a large-scale (40,000+ household) randomised field experiment in Nevada, USA, where the local water provider had implemented a major media campaign aimed at reducing 2015 summer water use by 10%. Notably, the study found substantial scope for using personalised, targeted, tailored mail-outs to boost water savings, particularly amongst high water users (see Table 3).

Table 2. The mail-outs sent to water users in the experiment

Mail-out		Motivation
<b>M1</b>	Information Sheet	N/A
<b>M2</b>	Info Sheet + Water Use History	N/A
<b>M3</b>	Info Sheet + Water Use History + Rate Information	Extrinsic
<b>M4</b>	Info Sheet + Water Use History + Social Comparison (gallons)	Extrinsic and intrinsic
<b>M5</b>	Info Sheet + Water Use History + Social Comparison (percent)	Primarily intrinsic

Table 3. Key findings from the study of Brent et al. (2016)

The effectiveness of water saving mail-outs	
<b>Mail-outs reduce water consumption</b>	<ul style="list-style-type: none"> <li>By 1.0-1.5% (on top of the 10% requested of all water users)</li> </ul>
<b>M1 has no effect</b>	<ul style="list-style-type: none"> <li>Purely technical water saving information did not reduce water use</li> <li>Personalised information is important</li> </ul>

<b>M3-M5 work best amongst high-users</b>	<ul style="list-style-type: none"> <li>Scope to target information and social comparisons programs to high-use households to improve the programs' cost-effectiveness</li> </ul>
<b>Optimal mail-out conditions vary</b>	<ul style="list-style-type: none"> <li>The ideal timing and number of mail-outs, and the durability of water savings, varied across M1-M5</li> <li>Scope to tailor interventions to maximise their impact</li> </ul>

## Can peer communication and peer punishment help solve water dilemmas?

Social dilemmas, such as overconsumption of scarce water and pollution of shared waterways, arise where individuals acting in their own self-interest lead to the community as a whole being worse off.

**Peer communication** (mechanisms that allow community members to talk to, and establish non-binding agreements with, each other) and **peer punishment** (mechanisms that enable community members to monitor and report / penalise each other) are two devices that have traditionally been relied on to overcome these dilemmas. Each of these harnesses social norms to encourage pro-social behaviour.

The question is: do they work in the case of more complex water dilemmas? A series of laboratory experiments found that peer communication mechanisms remain effective in water-related scenarios, while peer punishment policies (like allowing community members to sanction each other for breaching water regulations) are ineffective when used alone, but can improve outcomes when combined with other measures.

For example, in the case of water pollution, peer punishment was found to have a positive effect when combined with a tax imposed on all polluters if water quality fails to meet required standards, (over and above the effect of the tax alone), highlighting the benefit of applying peer punishment mechanisms in appropriate circumstances.

### About the research

This research was conducted as part of the CRCWSC project Cities as Water Supply Catchments: Economic incentives and instruments (Project A1.3). This project addresses the design and development of an effective range of policy mechanisms to promote the uptake of water-sensitive practices.

### Further information



**Dr Daniel Brent**  
Department of Economics,  
Louisiana State University  
dbrent@lsu.edu

**Professor Lata Gangadharan**  
Department of Economics, Monash University  
lata.gangadharan@monash.edu



Level 1, 8 Scenic Blvd  
Monash University, Clayton  
Victoria 3800, Australia



info@crcwsc.org.au



<http://www.watersensitivecities.org.au/content/project-a1-3/>



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