

Case Study: Cool Streets

COUNCIL NAME

Blacktown City Council

WEB ADDRESS

www.gallagherstudio.com.au/blacktown-green-streets-pilot-project

SIZE

240 square km

POPULATION

339,328

Overview

Blacktown City Council's Cool Streets urban heat project aimed to mitigate the effect of rising urban heat in Western Sydney by increasing the number of street trees. Community events in treeless streets engaged with residents, promoted the benefits of street trees and enabled resident participation. Street tree designs that maximise temperature reductions and lower residential energy consumption were developed, and an on-ground trial saw a whole street planted with trees that will lower surface temperatures, reduce home energy usage, sequester carbon and potentially increase property prices.

Background

The Blacktown Community Strategic Plan (CSP) identifies risks to western Sydney from increasing urban heat due to climate change. Residents will experience an increasing number of hot days each year and average temperature increases of 0.6 to 1.5 degrees by 2030 (CSIRO State of the Climate Report 2012). The Cool Streets project was initiated to adapt residential streets to rising urban heat and contribute to a specific focus area of the CSP – mitigate and adapt to the impacts of climate change.

The Cool Streets project combined scientific research with community engagement. Residents in two suburbs were surveyed about trees revealing:

- concerns about safety and leaf litter, but limited knowledge of the benefits of increased tree coverage such as lower ground temperatures and reduced home energy consumption.
- New street trees are often damaged or removed by residents. Formal applications to remove trees are due to perceived concerns about branches falling, damage to pipes and leaf litter.
- New street designs include street trees planted prior to new residents moving in, but many streets developed in the last 10 years did not have street trees, were not planted by the developer or original trees have died. Trees are often not replaced and several streets surveyed were without street trees for over two years.
- Residents were typically informed of future plantings in their street but not consulted.



Many streets do not include design features to mitigate and adapt to urban heat, despite western Sydney experiencing higher temperatures than the rest of Sydney. There was need to increase tree coverage and reduce urban heat while improving public opinion and knowledge of trees.

Implementation

The project had two linked parts: (1) designing alternative street tree layouts and (2) community engagement. The initial target audience was residents in two existing streets constructed within the last 8 years that did not have street trees. In July 2015 multiple street tree designs were designed for both streets that delivered different levels of shade, temperature reduction, carbon sequestration and lower home energy usage. The designs were developed by Dr. Libby Gallagher of Gallagher Studio based on her research at the University of Sydney. Designs were presented to the community on-site and residents asked which design options they preferred: large trees, medium trees, small trees, mixed species, deciduous, evergreen or no trees at all. Residents responded positively but showed a preference for smaller trees.

Residents were told about the benefits of street trees such as shade, temperature reduction, lower home energy use and increased property values and asked if their preferences had changed with such knowledge. The results of a second round of engagement showed that the majority of participants now preferred medium-to-large trees. A final design was created and another engagement event held with residents to illustrate their chosen layout. Responses were positive and only minor changes were required. A planting event celebrated the planting out of the entire street according to a street tree scenario chosen and approved by residents. Members of the community brought food and the Mayor attended to show support.

The street design and community engagement component of the Cool Streets was funded from the NSW Office of Environment and Heritage's Waste and Sustainability Improvement Payment Program. Tree planting was funded from Council's existing operational budget.

Outcomes

The on-ground trial provided proof-of-concept for the Cool Streets model. The project led to street tree planting designs made in collaboration with the community. These designs are transferable or easily altered for other treeless streets. By engaging with community and internal council stakeholders the project grew to include a practical component and proved that community engagement can lead to better outcomes for mitigating urban heat. With proof of concept the project will now be applied to all other future plantings.

Key Learnings

The project has had a positive impact on morale and improved attitudes to trees. Residents will benefit from the project for years to come as the new trees mature. Within 10 years the trees will be providing significant shade and cooling effect. At 20 years of age the trees will be saving each household in the street approximately \$109 (in today's money) on their electricity bills and \$232 in 40 years. Lessons learnt will be applied to other streets across Blacktown and used to develop street tree designs for future subdivisions in the north-west growth areas of the Blacktown City area.

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This project was a joint winner of the 2016 Climate Change Action Award at the LGNSW Excellence in the Environment Awards