

As part of the ACT Government's Climate Adaptation Strategy, trials of new innovations are increasing the ability of our community to adapt to climate change impacts, reduce greenhouse gas emissions and build a more sustainable city.

CLIMATE ADAPTATION INNOVATION

Plant species trials for Light Rail Network

This innovation involved trialling plant species for the Gungahlin to City light rail. Trial plots were set up at the light rail depot in Mitchell to help find the most suitable plants and conditions for growth. Several useful lessons were learned.

DETAILS

As part of its public-private partnership with the ACT Government, Canberra Metro trialled a range of plant species (37) in preparation for planting along the length of the light rail network from Gungahlin to the City. The aim was to create an urban meadow adjacent to the light rail line. Following the trial, over 1 million ground covers, grasses and shrubs have been planted, with around 1,250 trees across the length of the light rail network. Located in Mitchell, the trial site provided similar planting conditions to the light rail corridor. Plants were trialled across nine plots, with the first plantings commencing in early 2017.



INNOVATION

This trial is the first of its kind in Australia for a light rail project. The trial plots provided insights into which species would be most viable for planting, before large-scale planting began across the network. They also tested plant spacing, soil reinforcement, soil type, drainage, soil cell structures, weed mats and mulch depths. Plants selected were resilient, local natives and cultivars, which generally reduce irrigation requirements. The choice of species was driven by the aim to respect Burley Griffin's vision of a 'city in a landscape', reflecting our 'bush capital character' in the premier approach route into the city.

INTERIM FINDINGS

- > Higher sand content as soil reinforcement in topsoil reduced compaction and vehicle track formation, but was difficult to install and maintain.
- > Hardening the selected species to climatic conditions at planting, and also progressively with the watering regime throughout the maintenance period, significantly increased the success rate, but is difficult to achieve in practice.
- > Plant losses can be minimised by delaying installation until early spring.
- > Plant availability can be difficult, especially when large numbers of naturally self-propagating species are needed. Therefore early seed collection and propagation of species was essential.
- > Some species and planting methods have had limited success and were substituted or adjusted as a result of the trials.
- > Heat and water effects at road and hard surface edges impact on plant size and species suitability, so this was considered early in the design process.

CLIMATE CHANGE BENEFITS

- > More shade for light rail users and cooler surface and air temperatures in surrounding area.
- > Shrubs and grasses can be cut back for bushfire risk reduction.
- > Drainage will incorporate rain water recycling into pits to distribute to plantings, and then to the subsoil.
- > Future climate-suitable trees for the avenues.
- > Trees absorb and store (sequester) carbon from the atmosphere.
- > Reduced requirements for irrigation with water sensitive urban design.
- > Reduced runoff from the median limiting flash flooding and permitting groundwater recharge.

CO-BENEFITS

- > Increased plant diversity and reduced weed spraying along Gungahlin to City corridor.
- > Intended continuous self-propagation of the plants in the median to reduce ongoing maintenance costs.
- > Increased opportunity for biodiversity and ecosystem services, including insects providing pollination.
- > Native trees do not have deciduous characteristics, reducing autumn and winter debris issues.

Canberra's climate is already changing, and in future the ACT can expect more
EXTREME WEATHER EVENTS.



Heatwaves

will become hotter, more frequent and last longer.



Droughts

will increase in severity and frequency.



Storms

will become more intense, causing flash flooding.



Bushfire

weather will become more dangerous.

A certain amount of warming is already locked in. The ACT Government is committed to ensuring Canberra adapts to the changing climate, so that it can remain a vibrant, resilient and liveable city.