Urban Cooling

Creating cool, green open space for communities and wildlife to enjoy

# Our cities are getting hotter

The combined effects of our changing climate and the urban heat island effect are driving temperatures in our cities up. Heatwaves are getting hotter and more frequent, affecting the liveability of our region.

Over the next few decades, the number of extreme hot days in all Australian cities is predicted to increase significantly, impacting people’s health, mortality rates, biodiversity, energy demand, and our State and national economies.

Cities are built with concrete, stone and asphalt paved roads. These hard materials create ‘heat islands’ – areas of significantly hotter temperature than surrounding suburban and rural areas – which generate a range of problems for those living and working within them. Native animals also live in our cities, and limited water and fewer trees increases the risk to them.

***“…built up areas have a greater capacity to absorb, hold and emit the sun’s heat compared to rural areas. The absorption of energy can increase day and night time temperatures in cities by several degrees.”***

City Cooling – Mitigation of the Urban Heat Island Effect, E2Designlab 2019

Open space is at risk of drying out due to less water from drought, hot days and the loss of trees, adding to the urban heat island effect.

# Planting more trees provides shade, helping to cool our cities

A growing body of evidence is showing that we can effectively lower local temperatures by planting extra trees to create more shade. Standing under a tree in the shade can feel 10 degrees cooler than standing in the sun.

As the manager of over 33,000 hectares of land across the Port Phillip and Westernport region, we are doing our part to making Melbourne cooler. We’re planting trees across the region as part of our Urban Cooling Program, to help lower temperatures on hot days. We’ve created 24 hectares of shade by planting trees – almost the same size as 10 MCGs.

**Helping to reduce temperatures**

Two pilot projects, at Jacana Wetlands in Melbourne’s north and Edithvale Wetlands in the city’s south-east, are helping to lower local temperatures. These sites were selected because they are close to homes, used for recreation, community education and active transport and were identified as being hot and dry in summer.

We partnered with Hume and Kingston councils, Friends of Moonee Ponds Creek and Friends of Edithvale Seaford Wetlands to plant hundreds of native trees at both locations along paths to create shade, make it cooler and improve biodiversity. Additional tree shade in these areas is expected to reduce the temperature by up to four degrees on hot days.

**Planning for a hotter drier future**

Making the city cooler with more trees and shrubs requires a consistent water supply to ensure Melbourne’s trees can withstand hotter temperatures, heat waves and drought. During heat waves, watering can make it feel cooler and supports tree health. Irrigated grass is also about 15 degrees cooler than dry grass and surrounding pavement and can bring night time temperatures down by one degree per hour.

Vegetation and water used to cool green spaces can also provide habitat, improve amenity and help manage stormwater flows to waterways, making them healthier. By working together with stakeholders and the community, we can create greener and cooler places to enjoy all year round.

Melbourne Water is investigating long-term water demand and availability for greening and cooling given competing demands for water to ensure non-potable supply sources are planned and secured to create a greener, cooler Melbourne – critically during periods of low rainfall.

Water sensitive urban design and integrated water management principles will be vital to making our parks and gardens resilient to rising temperatures, heat waves and drought. These approaches use planning and urban design to remove pollution and chemicals from stormwater.

Simple stormwater systems can be used to water trees, sometimes doubling their growth rate, while reducing impacts to rivers. We see a strong opportunity to make urban trees more resilient to Victoria’s changing climate by aligning the need to manage excess stormwater runoff and protect waterways, with the need to keep trees and green spaces healthy and thriving.

***“The combination of tree canopy and natural turf in urban parks results in 5-10 degree cooler radiant temperatures and 1-2 degree air temperature reductions in urban parks.”***

Guide to Urban Cooling Strategies, Low Carbon Living CRC, July 2017

