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## AUSTRALIA, MELBOURNE

### Turning a Great City Green

Melbourne is the capital of Victoria, the southern-most mainland state of Australia, and includes 31 Local Government areas totalling over 4.14 million people. The City of Melbourne itself is a rapidly growing municipality, with over 100,000 residents, which increases to over 800,000 each day as people enter the city centre to work, visit and play. In recent years, Melbourne has experienced extreme climate conditions from record-breaking low rainfalls to extreme heat events. Rising temperatures in Australia are now expected to outpace global warming worldwide. This poses major challenges for Australia and also for Melbourne. In 2009, 374 people died across metropolitan Melbourne in one heatwave. By 2009, the city's urban rainforest, an invaluable environmental asset, was in a state of unprecedented decline due to thirteen years of drought in tandem with severe water restrictions. It was estimated that 23% of the City's current tree population would be lost by 2020 and 39% by 2030 as a result of drought.

To respond to this threat, City of Melbourne developed a new approach to urban planning, through an ecosystem-based climate adaptation programme, embracing what the City refers to as 'nature sensitive' urban design and planning. This approach emphasises the services that nature provides to the city and focuses on how it can be protected, restored, created, enhanced and maintained within the urban setting. The urgency posed by the current impacts of climate changes resulted in the City creating a multi-million dollar integrated ecosystem-based climate change adaptation program in 2010 – the 'Urban Landscapes Adaptation Program'.

The primary goal of this programme was to reduce drought vulnerability and to cool the city by 4°C in an effort to safeguard its citizens and the ecosystem services of its environmental assets from the impacts of climate change. The programme is underpinned by two strategies: the Open Space Strategy, which aims to increase green space by 7.6% and the Urban Forest Strategy, which is projected to double the City's tree canopy to 40%.

The Urban Landscapes Adaptation Program has already led to the planting of over 12,000 new trees and the addition of new green spaces throughout the city. Over 40 inner-city streets have been retrofitted to increase permeability and introduce raingardens, swales and water sensitive tree pits. A stormwater harvesting network is also being developed, which is already delivering 25% of annual landscape water requirements and is reducing reliance on potable water. As part of plans to double the urban forest canopy, the City ran a four-year citizen engagement programme to develop public awareness about the impacts of climate change and to co-design 10-year implementation plans. These plans detail how the urban forest strategy will be implemented in each precinct, they define the vision for each precinct, the desired future character and the priority locations for budget allocations and for work to be undertaken. The overall benefits that are expected to result from the City's continuing work are numerous including increased climate resilience, improved air quality, reduced energy demand and associated costs, increased liveability of the city, reduced heat-related illness and morbidity, increased thermal comfort and recreational space for citizens, and improved visual amenity of the public realm.