

## 2. Importance of the *Garden City Character*

### 2.1 *Garden City Character* in the Municipal Strategic Statement

#### 2.1.1 Summary of existing description

The *Garden City Character* is defined in the Municipal Strategic Statement (MSS) as:

*It is characterised by a general feeling of 'greenness' created by significant tree canopy cover contained within large, vegetated set backs and areas of open space.*

The MSS notes the *Garden City Character* is a legacy of earlier planners in Monash and is a defining feature in the municipality. The policy of large front setbacks is noted to contribute to the retention of canopy tree cover which softens built form and provides shade. It goes on to describe that the presence of the trees and 'greenery' is visually appealing and benefits the environment in terms of air quality and water balance. The MSS acknowledges that the erosion to the *Garden City Character* has occurred through vegetation and tree canopy loss because of inappropriate residential and industrial development. While the MSS goes on to describe that retention of the *Garden City Character* is a key influence on planning decision making in Monash, there is a key issue that the canopy vegetation loss has continued to occur within the context of the existing planning controls in place including the Vegetation Protection Overlay.

#### 2.1.2 Contemporary context for *Garden City Character*

The importance of natural features and greenness to community health and wellbeing has been the subject of research over the past decade, since the original definition of *Garden City Character* was included in the MSS. Research identifies a quantifiable and tangible link between peoples physical and mental health and wellbeing and greenness. The Final Report on the *Inquiry into Environmental Design and Public Health in Victoria (May 2012)* notes that there is compelling evidence linking public health challenges to the

planning and design of our urban environments. Deakin University in their comprehensive study *Beyond Blue to Green: The Health Benefits of Contact with Nature in the Park Context - Literature Review, 2010* describes the growing evidence that access to the natural environment improves health and wellbeing, prevents disease and helps people recover from illness. People who visit green open space experience a range of psychological benefits including improved mood, lower levels of anxiety, lower stress levels, lower levels of depression and increased physical activity. There is also evidence in the study *Healthy parks, healthy people (Deakin University, 2008)* that people recover more quickly from surgery and illness if they are looking out on a natural scene in contrast to an urban scene, suggesting '*...that natural settings elicit a response that includes a component of the parasympathetic nervous system associated with the restoration of physical energy*'.

Additional to the health and wellbeing benefits above, the unsealed surfaces such as grass, garden beds and wetlands absorb moisture in our urban environments. This assists to mitigate urban heat island effect (the build up of heat during the day which does not fully dissipate overnight) through evapotranspiration when the right balance is achieved between built form and natural features and surfaces. With forecast growth and change, urban densities and built form is anticipated to increase, resulting in more people living in medium and high density housing and activity centres. The future planning for these high density precincts will need to prioritise canopy cover and moisture absorbing surfaces as an inherent part of their design.

In this time of climate change, severe weather events including extended droughts are forecast to increase which makes our urban landscapes more vulnerable to damage. This is exacerbated by the recent trend that has been measured as part of the research undertaken for this Strategy which concludes that over the past 23 years an approximate 10 per cent increase in sealed surfaces has occurred and a corresponding 10 per cent decrease in permeable, moisture absorbing surfaces in both the private and public realm.

Private and public open space that is designed with appropriate green infrastructure to encourage permeable surfaces that hold moisture allows effective evapotranspiration in the evening. This cools the local microclimate, and this will assist to mitigate the effects of urban heat and contribute to a more liveable city. This is particularly important during extended periods of heat such as experienced in Melbourne in early 2009 and in early 2014. Designing cooler public and private open spaces, particularly in urban centres, with increased shade from canopy trees, has the added benefit of providing the public places for the community to use during hot weather, particularly the vulnerable, the frail and the elderly in our community who do not have access to cooling in their homes.

Other benefits of a green *Garden City Character* is increased biodiversity values by expanding opportunities for habitat with increased permeable surfaces and tree canopy cover. The benefits of improved visual appearance and desirability of leafy green neighbourhoods with an established character in the context of the focus on new and establishing suburbs in the expanding growth corridors should also be acknowledged.

### 2.1.3 Changes to the *Garden City Character*

The *Garden City Character* is in the process of change, mainly due to a combination of increased site coverage with built form and increasing urban densities. The recent growth and development has resulted in an increase in built form and loss of greenness on private land to accommodate the additional population. This includes schools, higher education land and some public open space with sports facilities. The Victorian Government supports the direction for the middle ring suburbs to accommodate population growth, particularly around activity centres and transport hubs. The City of Monash is in the process of determining how best to accommodate the increase, which is articulated in the Monash Housing Strategy (2014) and by rezoning land for residential use.

This Strategy is a key tool for Council to reduce further vegetation loss during the forecast growth and urban development. This is to be achieved by documenting the existing landscape character types, the preferred character types and recommended actions to achieve preferred character types in the future within the context of forecast growth and change.

## 2.2 Contribution of canopy vegetation to *Garden City Character*

### 2.2.1 Benefits of canopy trees

Canopy trees in the public and private open space contribute to the liveability and inherent qualities, identity and character of a place. Research identifies that trees are valued at many different levels for:

- Shade and cooling reducing energy use and improving thermal comfort, mitigating the effects of climate change.
- Improved air quality.
- Contribution to biodiversity with habitat for native flora and fauna.
- The aesthetic values of the canopy trees in the urban environment including their contribution to a sense of place and the landscape character.
- Improving the mental health and wellbeing of the community through the benefit that trees have on the naturalness and leafy green



character that can reduce stress levels, improve air quality and the create a more comfortable and liveable urban landscape.

- Economic improvement to property values located in leafy streets, particularly boulevards.
- The contrast canopy trees provide to built form in the urban environment.
- Cultural heritage values associated with remnant indigenous trees and vegetation.
- Historical values associated with mature exotic trees.
- Increasing the appeal and comfort of public spaces, which encourages people into the public realm thereby improving the social connectedness and the physical health and wellbeing of the community.
- Carbon sequestration.

## 2.2.2 Supporting research on benefits of canopy trees

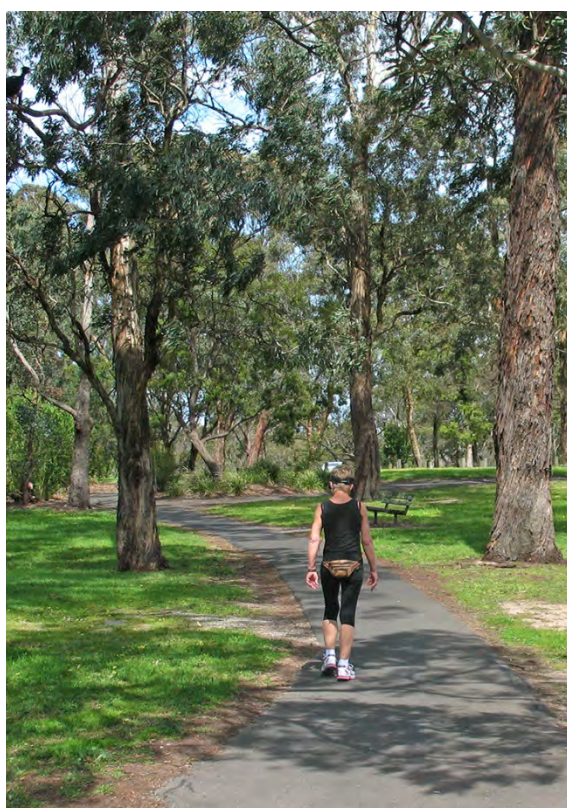
Research in Toronto, Canada indicates that mature trees with a 75cm trunk diameter intercepts ten times more air pollution, can store up to 90 times more carbon and contributes up to 100 times more leaf area to the city's tree canopy than a tree with a 15cm trunk diameter.

As noted previously large, long-lived healthy trees provide the greatest contribution to the structural and functional values provided by trees in the urban environment. This includes their biodiversity role as habitats for native birds and other fauna. Retention of the large, long-lived healthy trees in our urban environments is a priority, particularly during this time of climate change.

Much of the research into managing trees in the urban environment comes from the United States and Canada.

Recent research (Kardan, 2015) indicates that people who live in neighbourhoods with a higher density of trees (defined as 10 or more trees in a city block) on their streets report improved health compared to people living in streets with fewer than 10 street trees per city block. Translated to Australian conditions, this effectively means that street trees planted on both sides of the street at approximately 20 metre spacings have measurable benefits to community health and wellbeing over streets with one tree every 40 metres.

This research was undertaken specifically to identify how much a tree in a street or a nearby neighbourhood park could improve our health. Results from the study undertaken in Toronto Canada, suggest that people who live in areas with higher street tree density report better health perception and fewer cardio-metabolic conditions compared with their peers living in areas with lower street tree density. This study focussed on the street trees as they are more visually and physically accessible to people compared with trees in parks and on private land.



### 2.2.3 Benefits of other canopy vegetation

The presence of shrubs contributes to the green *Garden City Character* through the increased presence of naturalness, selective screening and softening of built form, increased biodiversity and habitat value. Shrubs are bird attracting as they provide dense foliage and flowers which are popular for avifauna nesting and foraging. Shrubs are often preferred forms of greening directly adjacent to buildings and in tight spaces due to their less vigorous root systems and reduced height.



*Example of the contribution of shrubs in the urban landscape*



*Example of the impact of lack of any planting including shrubs in the urban landscape*

### 2.2.4 Issues with canopy trees in urban landscapes

While the values of canopy trees are many, it is recognised that there can be issues associated with managing trees in urban settings. Trees are living and dynamic that grow and change and can impact on the built infrastructure. Common issues occur when:

- Trees are planted in inappropriate locations for their anticipated growth habit and size. This can potentially result in trees roots damaging built infrastructure including footpaths and road pavements which can impact on public access and safety.
- The flowers, seeds and leaves from a limited range of trees can cause allergies to people living nearby.
- Inappropriate management and maintenance of trees which can lead to issues such as poor form and structural integrity and unsafe branching structure causing a risk to public safety

- Lack of regular maintenance can result in low branching which impedes clear sight lines or branching that obscures public lighting.

While it is recognised there can be issues associated with canopy trees in urban settings, their benefits certainly outweigh the issues as they are mainly associated with inappropriate street tree selection and/or ongoing management/maintenance. Therefore, this Strategy is focussed on providing clear direction for maximising the retention of appropriately planted and healthy mature canopy trees and providing a clear set of criteria to guide future tree planting to achieve a sustainable canopy vegetation framework in the city in the future.



## 2.2.5 Size of trees

This Strategy refers to three sizes of trees (including palms), and the mature sizes for large, medium and small trees in Table 2-1.

**Table 2-1 Definitions of tree size and age**

Size	Height	Trunk cal. dia.	Age
Large	Minimum of 12 metres	>60 cm	>80 years
Medium	6.1 to 11.9 metres	>35 cm	>50 years
Small	Up to 6 metres	>20 cm*	>30 years

\* This may include multiple stemmed species such as *Lagerstroemia sp.* and *Callistemon sp.*

Large mature canopy trees are referred to specifically in the Strategy, and there are different recommendations for the protection of these, as distinct from protection of medium and small canopy trees. The reason for making the distinction in the controls is that the research reviewed for this Strategy highlights that mature large trees make a significantly greater contribution to the urban landscape than new or recently planted trees, or the medium and small trees. The medium and small trees are valued including for their contribution to the landscape character, however the large trees, where feasible, will be preferred due to their greater range of benefits they can make in the long term.