

# GREENING PORT PHILLIP

AN URBAN FOREST APPROACH  
2010



This strategy was developed with technical input from TreeLogic and using the results of extensive community consultation undertaken in 2009. Consultation included two tree summits, telephone, online and in-person surveys and a community reference group. Consultation with council staff and councillors was also undertaken.

Council would like to acknowledge the input of all of the people who contributed to this strategy. In particular, council would like to acknowledge the efforts of the community reference group, who played a key role in guiding the development of the strategy.

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Algerian Oaks, St Vincent's Garden, Albert Park



Boulevard of Plane Trees, Richardson St, Middle Park

# Greening Port Phillip's vision

Trees and other vegetation in public and private spaces can be thought of as an urban forest that provides shelter, shade, beauty, cleans the air, regulates the temperature, reduces energy needs of nearby spaces, treats and cleans stormwater, reduces loads on stormwater drains, protects and increases the life of infrastructure and provides habitat. An urban forest is defined as the 'sum total of all trees and associated vegetation growing within an urban area'.

## The vision for the future

*"The City of Port Phillip will have a healthy and diverse urban forest that uses innovative greening solutions to enhance the community's daily experience, ensuring environmental, economic, cultural and social sustainability for future generations."*

## The City of Port Phillip is uniquely positioned to achieve this vision because:

- We are located in a landscape of natural beauty – Port Phillip Bay, right next to the heart of Melbourne, creating a unique and desirable place to live and work.
- Good planning in the past has left a legacy of beautiful and green historic parks, public and private gardens and many tree lined streets that contribute to a mature tree canopy cover and greening across most of our neighbourhoods.
- There is a high level of awareness and commitment within the community of the need to take action now to ensure the current liveability is enhanced into the future.

**This vision will be achieved by council, residents, businesses and local communities taking action together to green the municipality for the future.**

# What is Port Phillip's urban forest?

## The City of Port Phillip's urban forest is made up of:

- Front and backyard gardens
- Balcony gardens
- Rooftop gardens and green roofs
- Vertical gardens – vegetation growing up the walls of buildings and fences
- Street trees, shrubs and ground covers on nature strips, median strips and round-a-bouts
- Trees and gardens in public parks and reserves
- Trees and gardens in other open spaces – shopping strips, industrial properties, etc.

All of these green spaces form an urban forest that provides an essential balance to our highly urbanised environment and has a direct impact on residents daily lives and visitors, as well as on the liveability of the city in the long term.

The concept of an urban forest enables a united approach to the management of our green spaces by considering the role of public and private trees and vegetation in regional planning and development.

*An urban forest is the sum total of all trees and associated vegetation growing within an urban area.*



# Greening objectives

## Council will achieve its vision for greening Port Phillip by:

- 1 Enhancing liveability - Creating a sense of place, shaping the future of Port Phillip and caring for our natural environment (Council Plan Goal 4, Strategies 4.1 - 4.4).
- 2 Adapting and sustaining - Preparing the Port Phillip's community and council assets for a different climatic future (Council Plan Goal 2, Strategy 2.1).

### Council will enhance liveability by:

- Ensuring planning policies and strategies including the Municipal Strategic Statement, Urban Design Frameworks and Structure Plans incorporate trees to achieve the desired neighbourhood character.
- Ensuring that greening activities in open spaces, including tree planting and alternative greening options, maintain and enhance the unique character and beauty of Port Phillip.
- Maintaining and enhancing streetscapes for improved amenity, liveability, character and sustainability through tree planting and implementing alternate greening options.
- Maintaining and enhancing trees in key boulevards and developing new boulevards.
- Having an integrated approach to tree planting to ensure that tree planting aligns with key capital works projects and initiatives.

### Council will prepare community and council assets for a changed climate by:

- Managing and maintaining trees within the City of Port Phillip to ensure that they survive for future generations.
- Minimising the impact of the heat island effect by increasing the number of trees and overall canopy cover in the City of Port Phillip and by seeking other greening opportunities where trees cannot be planted.
- Ensuring equitable access to mature trees across our city by maintaining an optimum coverage and mix of tree type and age.
- Enhancing wildlife habitat, strengthening wildlife corridors and increasing biodiversity within the context of Port Phillip's highly urbanised environment.

# Measuring our success

We will measure progress towards achieving the Greening Port Phillip vision using five key indicators.

| Indicator                         | Desired outcome                                                                                                           | Measure – reported every 5 years                                                                           |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Number of hot spots*              | A reduction in the total number of hot spots contributing to the heat island effect                                       | Total % reduction in hot spots and % increase in cooling and temperature control in treated hot spot areas |
| Tree canopy cover                 | An increase in the total area of tree canopy cover in the City of Port Phillip                                            | Total tree canopy cover                                                                                    |
| Number of trees                   | An increase in the number of trees in streets and parks in the City of Port Phillip                                       | Total number of trees in streets<br>Total number of trees in parks                                         |
| Alternative greening activity     | New greening initiatives undertaken where trees are not an option                                                         | Number of alternative greening activities undertaken in streets that cannot be planted with trees          |
| Community satisfaction with trees | The City of Port Phillip community are satisfied with the action being undertaken by council to maintain the urban forest | Levels of satisfaction with council action being taken                                                     |

\*Hot spots - sites that show up as hotter than surrounding areas using thermal imaging.

# Strategic framework

*The Greening Port Phillip Strategy provides the strategic framework and policy context for the development and management of trees in the City of Port Phillip.*

Urban forestry is an integrated approach to the management of trees. It recognises that trees cannot be managed in isolation from other elements of the urban environment such as buildings, roads, footpaths and bike paths, utilities, open spaces and activity centres. Protecting heritage values and enhancing neighbourhood character also need to be taken into consideration when planting and maintaining trees in parks and open spaces.

**The key components of the Greening Port Phillip Strategy's integrated approach to tree management are:**

- A Tree Policy
- A Street Tree Planting Guide
- Tree Management Guidelines
- Strategic/Master Plans

Figure 1 (page 8) shows the components of the strategic framework.

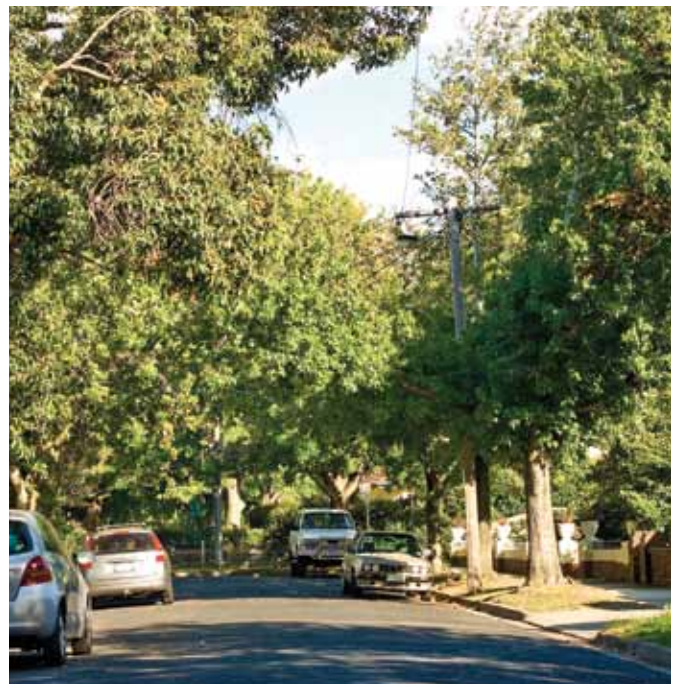
## Tree Policy

The Tree Policy is the key mechanism by which council will take action towards achieving its Greening Port Phillip vision and objectives. The policy is divided into eight key policy areas (Page 24), which are:

- 1. Tree protection**
- 2. Tree planting and selection**
- 3. Tree removal and replacement**
- 4. Climate change adaptation**
- 5. Tree root management**
- 6. Tree asset management**
- 7. Trees and the urban character**
- 8. Community consultation and involvement.**

In each of these policy areas are a number of statements that describe council's position for particular aspects of a key policy area. Each policy statement has specific actions and timeframes listed against it that details what council will do to implement the policy and when.

The policies and actions (Page 24-34) are based on council's previous tree policy, which has been revised to reflect current challenges being faced by the city such as a changing climate, an aging tree population and increasing population. The new policies and actions are closely aligned with other key council strategies (listed on Page 7) that also address these challenges. The Policy also reflects the outcomes of extensive community consultation undertaken in 2009 as part of the development of the Greening Port Phillip Strategy.



Liquid Ambers, Monkstadt Avenue, Balaclava

## Street Tree Planting Guide

The Street Tree Planting Guide is listed as a key action in the tree planting section of the tree policy. The Street Tree Planting Guide is a discrete document that will guide street tree planting in the City of Port Phillip for the next five years and inform the annual capital works budget. The plan will be revised every five years to reflect the changing status of street trees and to ensure that council achieves the objectives of the Greening Port Phillip Strategy.

### Specifically, the plan aims to ensure that council:

- Maintains a balance of young, semi mature and mature trees across the municipality (to minimise risk of simultaneous mature tree loss across the city).
- Undertakes in-fill / replacement planting to replace street trees that have died or been removed.
- Increases the overall number and canopy cover of trees in the municipality.

The plan is based on an independent assessment of the status and condition of trees in each street within the municipality undertaken in 2009 by TreeLogic. This provides council with a systematic method for prioritising street tree replacement and upgrade works annually in the capital works budget.

Once a street has been scheduled for works in the annual budget, a community consultation process will be undertaken for each tree planting project to determine the tree species and associated infrastructure required for that street.

Streets that have been identified in the plan as having no opportunities for tree planting because they are too narrow, are not included in the Street Tree Planting Guide. The plan addresses opportunities for tree planting only. Opportunities for greening streets that cannot accommodate trees will be identified by council through other means and is listed as an action in the tree policy.

## Tree Management Guidelines

The Tree Management Guidelines detail all the tree planting and management processes used by the City of Port Phillip. All activities undertaken involving tree planting and management, either by council staff or contractors on behalf of council, will be in accordance with the Tree Management Guidelines.

## Strategic/Master Plans

Tree Management Plans include such plans as precinct master plans, streetscape design plans and park master plans. These detailed design plans ensure that tree planting is aligned with other aspects of urban planning and design, in the context of neighbourhood character and taking into consideration historic, iconic and other important elements in the urban landscape.



Perc White Reserve, Port Melbourne



# Relationship to key council strategies and policies

**There are a number of council strategies and policies that influence or inform the Greening Port Phillip Strategy. The key documents include:**

- City of Port Phillip Community Plan 2007-2017
- City of Port Phillip Council Plan 2009-2013
- Municipal Strategic Statement
- Structure Plans and Urban Design Frameworks for key precincts
- Open Space Strategy
- Water Plan
- Open Space Water Management Plan
- Climate Adaptation Plan

These key council strategies and policies are described below. Figure 1 shows the relationship of the Greening Port Phillip Strategy to other key council policies and strategies.

## City of Port Phillip Community Plan 2007-2017

The Community Plan provides a ten year vision for the future of the City of Port Phillip. The goals of social equity, economic viability, environmental responsibility and cultural vitality remain central to our desire to foster a sustainable community. The Community Plan identified ten top priorities, three of which guide the management of open space. These are:

- Manage water use and reuse, planting and park usage for prolonged drought.
- Encourage environmentally sustainable design, while advocating for mandatory state government controls to reduce greenhouse gas emissions and water consumption.
- Make the physical environment support community - "claim our streets" for example, street parties, better lighting to improve safety at night, recreational space for young people, extend community bus, better use of public gardens, better public transport links and better spaces for pedestrians.

The community places a high degree of importance on maintaining open space through times of drought and climate change.

## City of Port Phillip Council Plan 2009-2013

The City of Port Phillip Council Plan 2009-2013 outlines directions, strategies and actions for Council over the next four years. The Council Plan was developed with four key strategic directions:

- Engaging and governing the City.
- Taking action on climate change.
- Strengthening our diverse and inclusive community.
- Enhancing liveability.

In the context of tree management, the City of Port Phillip places an emphasis on protecting and preserving the local environment with a focus on maintenance of existing trees and open space. The objectives of the Greening Port Phillip Strategy reflect key priorities and strategies in the council plan and other key strategic documents as listed below.

## Municipal Strategic Statement

The Port Phillip Municipal Strategic Statement (MSS) sets out the council's strategic planning objectives and underpins the land-use and development provisions of the Port Phillip Planning Scheme. The MSS has been developed with input from the community. Together with local planning policies, the MSS is a part of the Local Planning Policy Framework (LPPF) in the Planning Scheme and is a statutory component of all planning schemes prepared in the new format.

The Municipal Strategic Statement defines key elements of the urban structure and character of Port Phillip (as shown in Figure 2) including such things as retail strips, residential neighbourhoods and formal/ tree-lined boulevards.

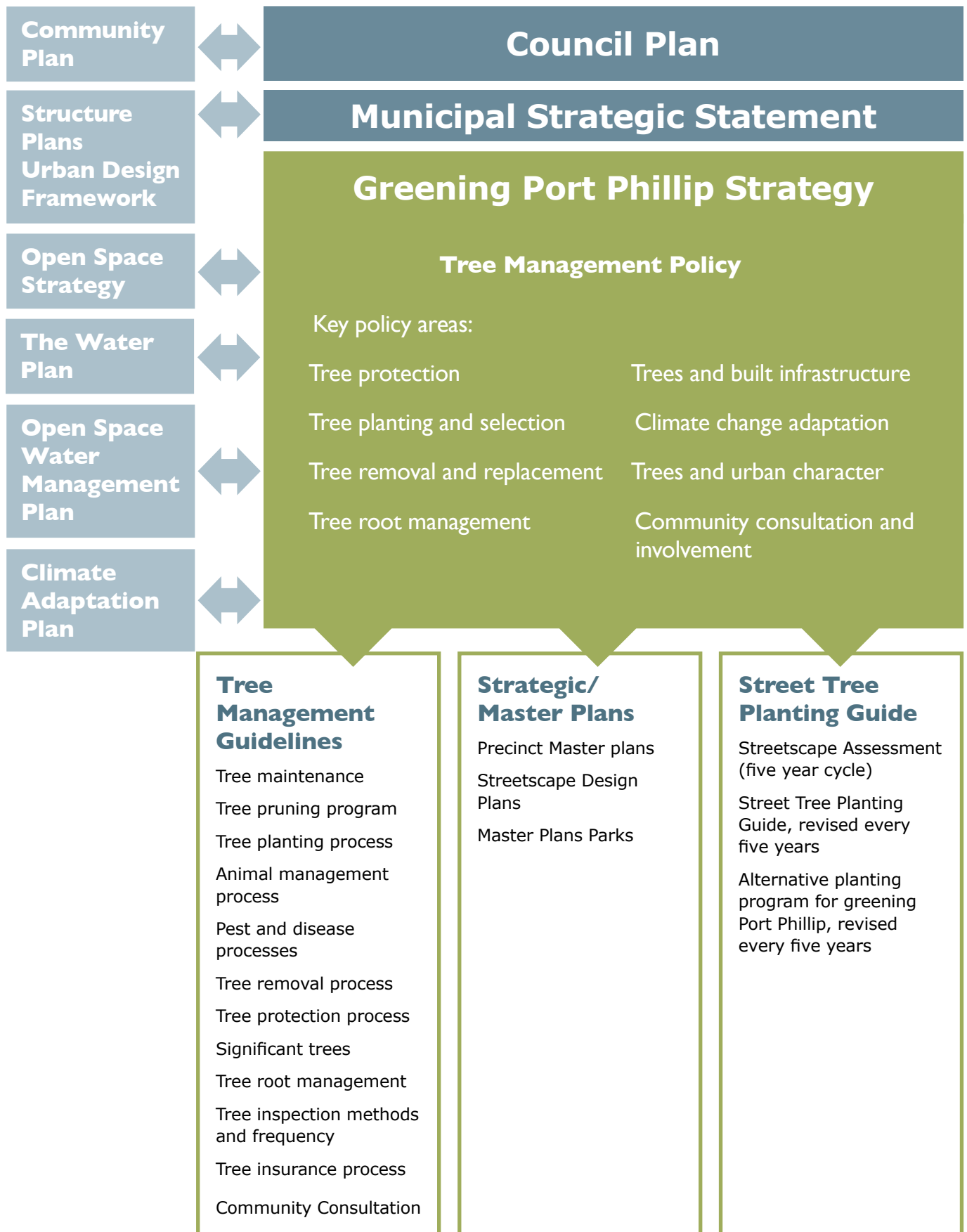


Figure 1. Relationship of Greening Port Phillip Strategy and Street Tree Planting Guide to other council policies and strategies

# Structure Plans and Urban Design Frameworks for key precincts

These are detailed plans that provide the framework, vision and strategies for development of special precincts and activity centres. Structure Plans and Urban Design Frameworks, where they are in place, guide all development activities, including tree planting. Figure 2 describes the key elements of Port Phillip’s urban structure and how the Municipal Strategic Statement guides the more detailed structure plans and urban design frameworks, which in turn informs Greening Port Phillip.

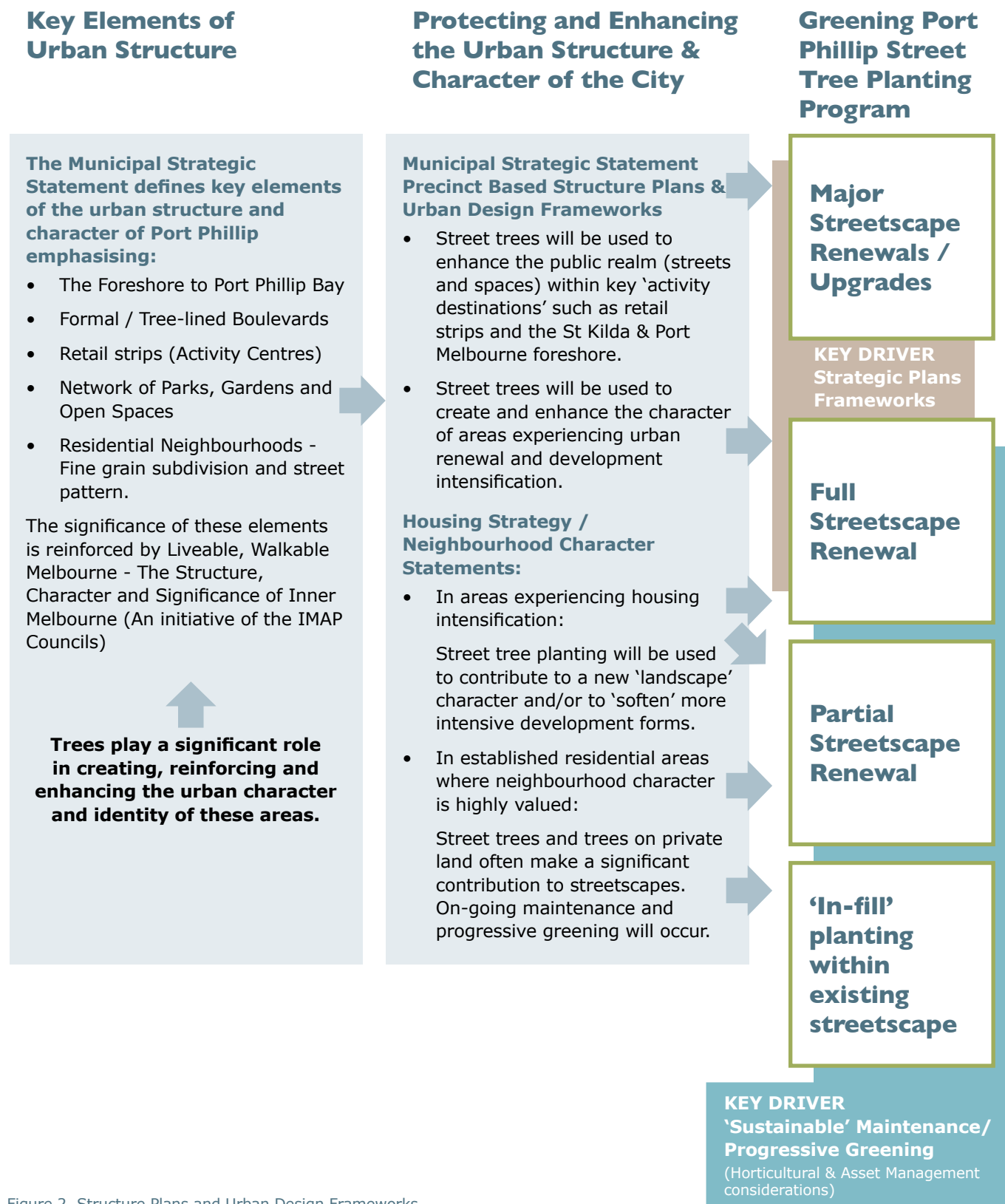


Figure 2. Structure Plans and Urban Design Frameworks

# Open Space Strategy 2009

**A city where public open spaces define the city's character and respond to its people's need for places to rest, recreate and be inspired (Open Space Strategy 2009).**

The Open Space Strategy (updated 2009) was developed following a review of public open space within the municipality and provided recommendations for linking existing open spaces and opportunities for improvement within existing reserves and streetscapes. A number of principles have been identified and adopted by council to help plan, develop and manage our open space within the municipality.

The principles are:

## **Principle 1: Optimum provision of open space**

Provision of optimum open space will be addressed by:

- Increasing the amount of useable open space in appropriate locations to offset increases in population and the decline in private open space
- The use of urban design strategies that produce functional and pleasing spaces irrespective of size
- Strong design elements in the creation and renewal of open space to inspire people and develop parks that will respond to community needs
- Creating connections between spaces to maximise use and functional public open space
- Community benefit to underpin the use of open spaces

## **Principle 2: Commercial events in public open space**

Commercial events in parks need to demonstrate net community benefit. The impacts of commercial events upon public access to open space will be monitored and regulated.

## **Principle 3: New residential development and public open space**

The boundaries of public and private open space in residential developments should be clearly delineated. Where residential developments border public open space, the values of the existing public open space must be enhanced or preserved not degraded.

## **Principle 4: Safe access to public open space**

The objectives of the City of Port Phillip Lighting Strategy will be implemented in public open space to provide safe access to high profile spaces and public transport connections as a priority.

## **Principle 5: Access for all**

Public open space will offer a diversity of functions and experiences, and be accessible to all.

## **Principle 6: Streetscapes as public open space**

Streetscapes provide opportunities for public use particularly for communal meeting and exercise. Design and treatment of streetscapes should respond to these potential uses.

## **Principle 7: Public open space managed by others**

The City of Port Phillip will continue to work with other public authorities as managers of public open space, to achieve high quality spaces for all residents.

## **Principle 8: Supply of public open space**

Parkland is a highly valued community asset. The inner city has a very limited supply of public open space, which is increasingly under pressure from high use by residents and competing demands from other community uses.

Any loss of land currently used for open space will only be considered in the following situations:

- The available land offers poor amenity for public open space use
- Alternative sites of higher quality can be identified for acquisition
- Net community gain can be guaranteed by an alternative land use.

## **Principle 9: Sustainable open spaces**

Sustained drought conditions have had an adverse impact on open space. To respond to this change in climate, environmentally sustainable design features will need to be considered in the management and renewal of open space.



## Open Space Water Management Plan 2010

The Open Space Water Management Plan is based upon the following key principles:

- Sustainability - ensuring the survival of trees and parks for the long term while meeting environmental targets.
- Liveability – increasing the health, sustainability and liveability of open space that can cater for the community now and into the future as the population grows and demand increases.
- Alternative water sources - sourcing alternative water supplies for the longer term.
- Adaptation – continuing to adapt to a drier and hotter climate.

The key strategies to achieve the implementation of the Open Space Water Management Plan are:

- Ongoing water efficiency measures for parks, gardens and trees.
- Stormwater harvesting for open space.
- Application of water sensitive urban design.

## The Water Plan 2010

The City of Port Phillip is committed to transitioning to a 'water sensitive city'. The Water Plan is the principle strategy supporting this objective. The Water Plan sets new targets for 2020 in the areas of mains water conservation, use of alternative water sources, and stormwater quality improvement.

The Water Plan will achieve its vision through the implementation of five strategies for integrated water management:

- Make water sensitive urban design standard practice for council.
- Implement water efficiency in parks, gardens and public facilities.
- Implement water sensitive urban design in roads, drainage and streetscape works.
- Implement stormwater harvesting for open space.
- Facilitate the application of water sensitive urban design by the community.

## Climate Adaptation Plan

The Climate Adaptation Plan 2010 aims to develop a climate adept city that is resilient to changing climate and extreme weather. The Plan has key objectives for five main action areas – flooding management, beach protection, climate proof buildings, city climate and access and safety. Of these, the City Climate action area is, in part delivered through Greening Port Phillip, with the primary objective being to realise new building, streetscape and public/green space design that influences local climate positively and reduces our power use.



Native vegetation, Point Ormond, Elwood

# Context

## City of neighbourhoods

Located on the northern shore of Port Phillip Bay, south of Melbourne's city centre, the City of Port Phillip encompasses an area of approximately 21 square kilometres and is one of the oldest areas of European settlement in Melbourne. Port Phillip is known and treasured by many for its urban village feel with magnificent heritage buildings, strip shopping, tree-lined streetscapes and artistic expression.

Port Phillip is dominated by highly urbanised industrial, residential and commercial landscapes bounded by Port Phillip Bay on one side and by the Melbourne City Council, Stonnington City Council and Bayside City Council on the other boundaries.

## Growth and development

Over the last 20 years in particular, the municipality has experienced significant population growth, with a current estimated population of 90,000, which is an increase of approximately 5,000 since 2006. The municipality is also experiencing a significant amount of residential development, particularly in areas close to the foreshore. In many of these developments, older housing stock is being replaced with high density apartment complexes, often leading to a loss of private gardens in the neighbourhood.

## Diverse community

Port Phillip is a culturally and linguistically diverse municipality, home to people from a range of English and non-English speaking backgrounds from all over the world. The municipality also has an indigenous community from the Yalukit Willam and the Kulin Nation that have a strong relationship to this land. Port Phillip is also diverse in relation to standards of living and income. Whilst there are a number of quite wealthy households and some of the most expensive homes in Melbourne, approximately 20% of households are classified as low income.

## History of development

For thousands of years the landscape now known as the City of Port Phillip consisted of coastal dunes, extensive swamps (today's Elwood, Albert Park, Port Melbourne, Kingsway), a timbered shale and sandstone ridge (today's St Kilda) that marked the boundary of the Yarra delta, inland sand plains covered in healthy woodland, red gum and tea-tree swamps along the Yarra and the low but prominent grassy basalt plateau of Emerald Hill.

From 1835 to approximately 1860, the land was cleared and drained. As the community prospered over the next century, boulevards were laid out, the course of the river was straightened, a coastal esplanade constructed, and



Fountain in O'Donnell Gardens, St Kilda

Albert Park was converted from common grazing land and swamp to an ornamental lake. Other formal parks were also created, including St Vincent Gardens and St Kilda's Botanical Gardens, with plantings of many exotic tree species as a reminder of Europe. In the 1970s there was a move away from the use of exotic species and thousands of Australian native trees were planted in the municipality. The current mix of street and park trees in Port Phillip reflects the various phases in tree planting over the years.

## Open spaces

The City of Port Phillip contains a number of beautiful parks, iconic foreshore, beaches and tree lined boulevards that attract millions of visitors each year. It has an extensive network of public open space including some of the most popular foreshore areas in Melbourne, stretching over 11 km from Elwood in the south to Port Melbourne in the north-west. Well known historic and iconic parks include Catani Gardens, St. Vincent's Gardens, Gasworks Park and St. Kilda Botanical Gardens.

The opportunity for expanding the open space network in Port Phillip in the future to respond to the needs of an increasing population is severely limited by the city's highly urbanised nature. Optimising the use of all available open space within the city for active and passive recreation, cultural activities, climate change adaptation and greening opportunities is a key priority.

## Trees

The City of Port Phillip manages approximately 55,000 trees, of which approximately 27,000 are within streets. Trees are a significant part of Port Phillip's landscape character, with a number of well known iconic native and exotic trees dotted throughout the city adding to the unique nature of neighbourhoods. Street landscapes play a significant role in the provision of green spaces within Port Phillip, as green space connectors between parks and by providing an attractive green environment for the community to meet, exercise and enjoy the outdoors.

Port Phillips streets are dominated by large, deciduous trees, such as Plane trees, indicative of the street tree plantings that occurred during the development of Port Phillip. Different tree species, their age, and planting styles create a variety of characteristics within the streets of Port Phillip. The majority of streets comprise of avenues of single species of large deciduous trees that are an attractive feature of the area. Australian native species also feature prominently. The municipality also has prominent plantings of palm trees, such as the Canary Island Date Palms along Beaconsfield Parade.

## Boulevards

Boulevards are significant features of Port Phillip's urban landscape. A boulevard is generally defined as a wide streets divided with a median down the centre and often with an above-average quality of landscaping and scenery.

Maintaining trees in boulevards is important as they contribute to Port Phillip's distinct urban character and are major thoroughfares for walking, cycling and vehicular traffic, providing key linkages to activity centres and open spaces. It is critical to reinforce the key elements of the City's overall urban structure by protecting Port Phillips distinctive physical character and conserving the cultural heritage of the city including the cities parks and gardens.

The Municipal Strategic Statement (MSS) acknowledges the key role of boulevards in reinforcing Port Phillip's distinctive urban structure and physical character. These include: Brighton Road, Queens Road, St Kilda Road, Kerferd Road, Beach Street, Beaconsfield Parade, Jacka Boulevard, The Esplanade, Marine Parade, Ormond Esplanade, Bay Street and Fitzroy Street.

Many of these boulevards have also been listed in the Open Space Water Management Plan, 2010 (Pg 54-55) as a high priority due to the presence of significant mature trees, tree species, or for their significant contribution to the urban character of Port Phillip. As the city develops and trees grow, new boulevards will be developed and these will need to be maintained and protected.

## Tree management responsibilities

Council is responsible for the planting and maintenance of all street and park trees on land managed by the City of Port Phillip. Council also has a role in the protection of significant trees on private property.

Residents are responsible for ensuring that pedestrian access to paths and traffic sight lines are not impeded by trees and vegetation on their property. Residents are also required to seek permission to remove significant trees from their property. Residents are encouraged to assist council in the management of the urban forest through planting trees that are appropriate to the site conditions on their property, by adopting a tree to water in their nature strip and by reporting acts of tree vandalism.



# Benefits of trees

The value of trees in the urban environment is widely accepted. Trees are not only beautiful in themselves, collectively they add beauty to our urban landscapes, soften the harsh lines of buildings or complement architecture, screen unsightly views, provide privacy and a sense of security, while contributing to the landscape character and provide a sense of place (USDA, 2003). Trees perform important functions that help maintain the sustainability of our cities and contribute to the community's health and serenity. Trees clean the air by absorbing air pollutants and releasing oxygen, they can sequester carbon dioxide. They reduce storm water runoff and erosion; they ameliorate climate; they can save energy; they create wildlife habitat; they can strengthen community, including its economy (USDA, 2003). With all of the benefits that trees contribute, they are considered assets that merit the expenditure of resources such as labour, energy and water (Moore, 2009). Research is proving that trees provide greater benefits in terms of ecology and economy than the cost to plant and maintain over time (Moore, 2009).

The benefits of trees can be grouped into social, cultural, environmental and economic benefits.

## Social benefits

Trees and other landscape plantings provide the community with a fundamental reminder of nature being an important component of people's lives. In an urban environment trees provide a critical link to the natural world from which we have evolved and helps restore the mind and spirit.

### Other social and communal benefits:

- Hospital patients have been shown to recover from surgery more quickly when their hospital room offered a view of trees.
- Trees and green space improve human mental health. Office workers with views of natural elements experienced less job pressure and greater job satisfaction, which leads to greater productivity and lower absenteeism.
- Trees have a positive effect on people experiencing stress and anxiety and the presence of trees has a calming effect on children suffering from Attention Deficit Disorder (ADD) (Taylor, Kuo, Sullivan, 2003).
- Appropriate vegetation cover, without dense shrubs and screen planting, can lead to reduced crime rates (Kuo, 2003).
- Trees in open space encourages people out of their homes where they interact more with others, which creates stronger social relationships.
- Children are more likely to be found playing in green spaces and their play is also more creative (Kuo, 2003).
- People in greener settings feel safer and experience less anti-social behaviour, including vandalism and graffiti (Kuo, 2003).
- Trees can significantly increase the walkability of streets for commuters and residents by providing shade from the sun and protection from rain and wind. Trees can also increase the overall amenity of streets, making them more enjoyable to spend time in and to walk, cycle and drive through.

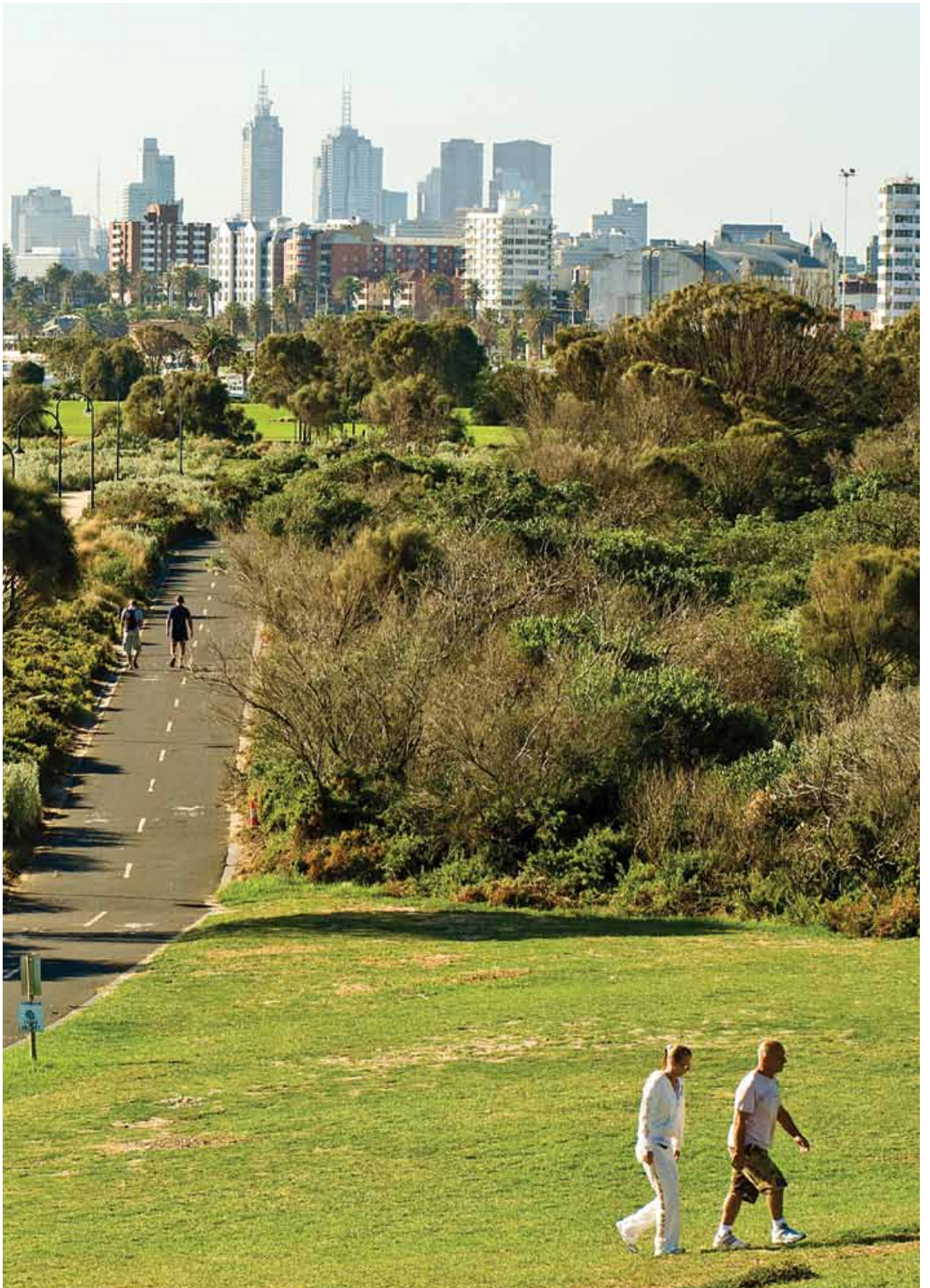
## Cultural benefits

The urban forest is described in Tarran (2009) as much more than a canopy area and number of trees ...'it reflects the values, lifestyle preferences and aspirations of past and present residents, and it is the legacy that current generations leave for future generations.' The City of Port Phillip has a diversity of cultures within the community, which have all had an influence on the look and feel of Port Phillip. The outdoors plays a key role in many of these cultures, with outdoor dining and community gatherings a common occurrence within Port Phillip's streets and open spaces.

Port Phillip's heritage places are among the most significant in Melbourne, with an important pre-European settlement history, including sacred sites, places and objects. Port Phillip's cultural heritage is made up of both built form elements and the natural environment, which encompasses buildings, public places, parks and gardens, streetscapes, and heritage landmarks and icons. The interaction between the built and natural components of the city creates a 'sense of place'. The diversity of tree plantings within the parks, gardens, boulevards and streets of Port Phillip are a key element contributing to the sense of place people feel for individual neighbourhoods and the wider Port Phillip area.

Because of their potential for long life, trees are often planted as living memorials. They can remind us of loved ones or significant historical or cultural events. The Corroboree Tree in Albert Park is an example of a tree that has cultural significance for the pre-European communities of the area - the Yalukit Willam and the Kulin Nation and is a reminder of the major changes the area has undergone since European settlement. In more recent times, Catani Gardens reflects the cultural influences in the area at the turn of the century. The strong axis planting of palm trees in Catani Gardens is a legacy of Italian born designer Carlo Catani, a prominent landscape designer in the 1900s and an active member in the St Kilda Foreshore Committee.





Elwood foreshore



## Environmental benefits

Trees alter the environment in which we live by moderating climate, improving air quality, conserving water, and providing habitat for wildlife (ISA, 2007). Trees modify local climate, primarily by lowering air temperature and increasing humidity.

Trees shade buildings and hard surfaces reducing re-radiated energy and the 'heat island' effect. This reduces reliance on air conditioning. Increasing green space in cities can reduce surface temperatures by up to 4°C (Fisher 2007). Trees are nature's air conditioners – one tree is equivalent to 5 room air conditioners running 20 hours/day. The larger the tree, the greater the cooling effect. Strategic planting of deciduous trees to the north and west of buildings can reduce reliance on heating and cooling systems reducing carbon emissions.

Trees improve air quality by removing a number of pollutants from the atmosphere; particulates from the combustion of fossil fuels, sulphur dioxide, nitrogen oxides, ozone and smog can all be reduced by the presence of trees. The amount of contaminants removed will vary between areas and amount of tree cover. Conversely, it should be noted that some trees emit volatile organic compounds that can contribute to the formation of ozone and carbon monoxide.

Wind speed and direction can be affected by trees. The more compact the foliage on a tree or group of trees, the greater the influence as a windbreak. Wind speeds can be reduced by up to 10 percent (Moore, 2009), which will become more important under climate change scenarios of increased and more violent storm events.

Trees can influence the flow of water in several ways. The downward fall of rain, and hail is initially absorbed or deflected by trees, reducing the force. This allows greater capture of rainfall into the soil reducing runoff and erosion. Water is also allowed to percolate through the natural mulch layer created beneath tree canopies.

Global warming and climate change is arguably the biggest threat facing the world's population. Trees remove carbon dioxide from the atmosphere and store (sequester) it as carbon in the plant material and in the surrounding soil. Global warming may be combated by removing CO<sub>2</sub> from the atmosphere and temporarily (for the tree's life) storing the carbon. However forests, and particularly urban forests, can only offset a relatively small proportion of total greenhouse gas emissions, so we must also reduce other emissions at the same time. Trees can have a more significant impact through the effects they can create when strategically planted near buildings leading to a reduction in energy use.

Trees, and in particular native vegetation, benefit biodiversity (diversity of ecosystems, species and genes within species). Diversity of trees and shrubs in the urban landscape create a more natural environment and tends to attract a greater number of birds and other wildlife than would otherwise occur. The natural cycles of plant growth, reproduction, and decomposition are present, both above and below ground (ISA, 2007).

## Economic benefits

The economic benefits of trees can be both direct and indirect, however the variability of species, tree size, condition, and function makes determining their economic value difficult.

Direct economic benefits are usually associated with energy costs. Well-placed shade trees can reduce energy consumption in a home by as much as 30 percent.

The indirect economic benefits of trees are based on the cumulative effect of individual savings and reliance on external energy sources. These benefits are available to the community or region. Lowered electricity requirements result in fewer new facilities to meet peak demands, and reduced amounts of fossil fuel burned.

The Australian National University researchers have estimated the 2008 value of ecosystem services to be \$23.5 million for Canberra's 26 million square metres of street tree canopy (Killy et al 2008). This figure translates to \$6 million saved annually in energy and air conditioning costs, \$12 million in pollution reduction, and \$5.5 million in stormwater mitigation and reduced infrastructure costs. Researchers at the University of Adelaide estimated the gross benefits from a typical mature street tree in Adelaide was at least \$200 (Killicoat, Puzio and Stringer, 2002), and a study in New York estimated that trees provided approximately \$100.2 million or \$172 per tree (\$15 per capita) in net annual benefits to the community.

The shade provided by trees not only has an impact on air temperature and the energy consumption, it can also prolong the life of materials such as asphalt by up to three or four times (Moore, 2009). Whilst it is acknowledged that trees can also have a negative impact on infrastructure, such as tree roots cracking asphalt and concrete, the benefits of trees for increasing the life span of such things as road surfaces must also be acknowledged (Moore, 2009).

Studies have shown that trees in the metropolitan area contribute between 13 and 20 percent of the value of the property. Houses located in tree-lined avenues have higher property values than those without street trees. Well treed suburbs are more appealing to newcomers.

Research has established a number of benefits in terms of consumer experiences of business districts with trees (Wolf, 1998, Wolf, 1999 and Wolf, 2003). Consumers reported a willingness to pay more for parking in landscaped car parks and on average reported a willingness to pay an average of about 11% more for goods in a landscaped business district than a non-landscaped district, with this figure being as high as 50% for convenience goods.

# Impacts of trees

## Tree root damage

In highly urbanised environments such as Port Phillip, the management of trees is very much focussed on maximising the benefits of trees in streets and parks whilst minimising their impact on public and private infrastructure and the risk of injury to the public. Mature trees, whilst providing great shade in summer for residents, can also cause damage to infrastructure from tree roots. Tree root damage is a very large issue for Port Phillip due to its great coverage of mature trees throughout the city and the conflict between trees and infrastructure is an ongoing concern for council and the community.

## Leaf litter and allergies

Trees can also cause conflict within the community through the dropping of leaves, flowers and fruit litter. Also, a number of people in the community have pollen allergies which can be exacerbated at particular times of the year by street trees in flower. Trees that are valued by parts of the community for their lovely flowers, the fruit they provide or the shade and shelter from their canopy, can also be the cause of distress for other parts of the community from the litter that is dropped on their nature strips or in their front yards or due to allergies being exacerbated. It is important to consider all aspects of a trees life cycle when selecting street tree species in order to minimise the impact of trees on the community whilst maximising the benefits.



Eucalypts Bank St South Melbourne

# The current urban forest situation

A streetscape assessment was undertaken during 2009. The information collected on the street trees is used for the descriptions below. The assessment considered a number of factors regarding the condition and suitability of street trees as well as details regarding the growing conditions. The assessment did not extend to trees in parks. This will be work undertaken in the future. The streetscape assessment data informs the development of the strategies and actions listed in the Greening Port Phillip Strategy and will provide a base line for future measurement of progress towards achievement of the Greening Port Phillip objectives such as reducing the heat island effect and maintaining an optimum coverage and mix of tree types and age. The information has also informed the development of the five year Street Tree Planting Guide.

26,372 trees were identified in the streetscape assessment, comprising of approximately 175 different tree species and varieties.

## Tree diversity

- 10 species were found to be the most common, representing approximately one third of all street trees. London Plane trees and Queensland Brush Box are the two most common street trees.
- Plane trees (*Platanus* spp.) are the most common (16% of all trees and 41% of the 10 most common tree species) and are particularly tolerant of urban conditions, which have seen it as one of the most commonly planted street trees in the world. The Queensland Brush Box also displays good urban tolerances and is the most commonly planted street tree in Melbourne (Frank, et al, 2006).

- *Platanus x acerifolia* (London Plane)
- *Lophostemon confertus* (Brush Box)
- *Pyrus calleryana* (Callery's Pear)
- *Fraxinus angustifolia* (Narrow-leaved Ash)
- *Lagunaria patersonia* (Norfolk Island Hibiscus)
- *Ulmus procera* (English Elm)
- *Callistermon viminalis* (Weeping Bott lebrush)
- *Melia azedarach* (White Cedar)
- *Phoenix canariensis* (Canary Island Date Palm)
- *Melaleuca linariifolia* (Snow-in-summer)

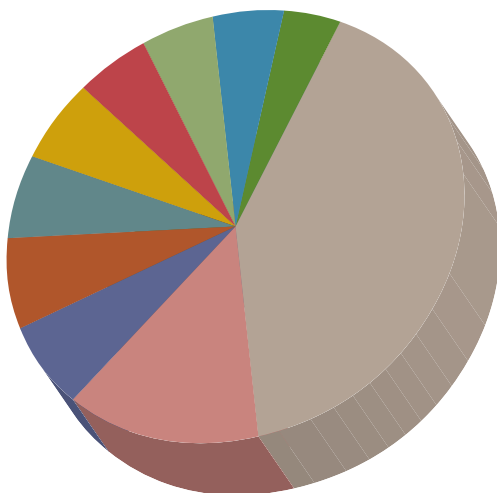


Figure 3. Most commonly occurring species.

## Tree age and useful life expectancy

- 0-5 years
- 5-10 years
- 10-20 years
- 20-50 years
- 50-100 years

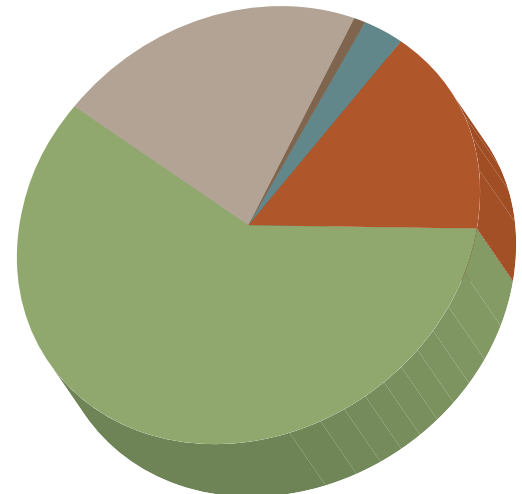


Figure 4. Summary of population useful life expectancy (ULE).

- Over half of the streets and street sections in the City of Port Phillip contain trees that are still actively growing and are yet to achieve their expected size. This is reflective of most of Melbourne's tree population.
- This is reinforced by the expected useful life of the trees (Refer to section titled Tree Management - Key Challenges, for an explanation of useful life expectancy). 59% of streets and street sections within the city contain trees that have a useful life expectancy of 20-50 years and 21% have a useful life expectancy of 50-100 years.
- 20% of streets and street sections have trees that have generally reached their expected size in the landscape and are not growing as vigorously as younger trees, but are still expected to remain healthy for many years (0-20yrs ULE). Many of these streets contain exotic varieties such as Plane, which can live for more than 150 years.
- Only four streets or 0.5% of all streets contain trees that are over-mature and entering a decline phase.



## Tree amenity

- The 2009 Port Phillip streetscape assessment placed a tree amenity value onto each street and street section. Tree amenity considers the visually desirable features that trees provide and is a combination of tree condition and suitability to the site.
- 40% of treed streets were rated fair for tree amenity and 15% were rated as good or very good. These are generally streets that have full stocking of healthy, vigorous trees suited to the site, with low impact on adjacent infrastructure and long ULE. 10% of streets were found to have poor to very poor tree amenity value.
- A number of streets and street sections assessed contained no trees. Most of these streets are too narrow to allow for conventional tree planting. Streets that can accommodate trees were given a tree amenity value. Streets too narrow for tree planting were classed as vacant for tree amenity (17%). Other greening options need to be investigated for these streets.

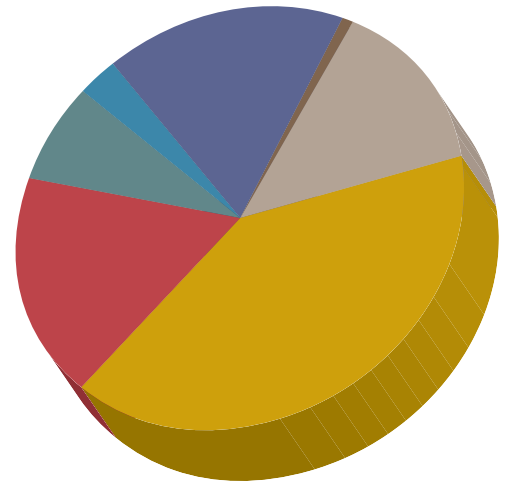


Figure 5. Summary of overall tree amenity.



An example of very good tree amenity - Plane Trees on Broadway, Elwood

## Planting opportunities

- The streetscape assessment identified 3,069 vacant sites across the municipality. Vacant sites are defined as sites that are existing, viable tree sites that could be planted without, in most cases, significant infrastructure improvements.
- The assessment also noted the optimum number of planting sites for each street. A street tree in front of every property or one every 15 metres is a typical street tree carrying capacity used by many other councils. This is considered the optimum number of sites for the purpose of regional planning. Site assessment prior to tree planting would be undertaken to identify the appropriate planting capacity for a particular street.
- This figure indicates, when considered with the total number of street trees, 26,372 and the total number of vacant sites, 3,069, that some streets within the city have dense plantings or multiple trees per property and other streets have vacancies or multiple opportunities for tree planting.

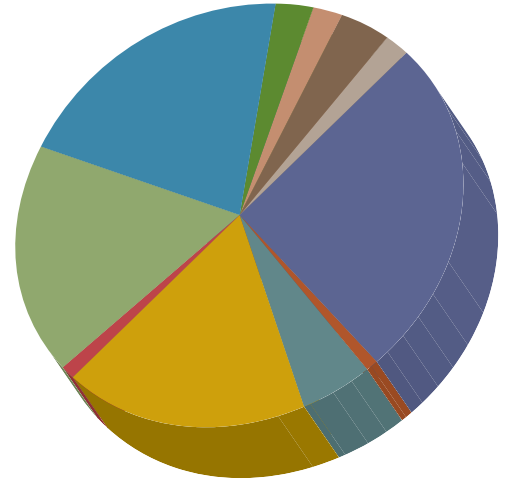
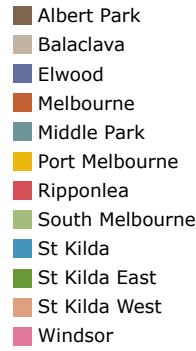


Figure 6. Vacant tree planting sites by suburb.



An example of very poor tree amenity - Thompson St, South Melbourne

# Tree management - key challenges

## Climate change

Climate change is expected to bring warmer, wetter winters, warmer drier summers and rates of fire and insect disturbance are expected to increase. In addition, these effects will interact with existing urban stresses such as air pollution, soil compaction and heat island effects. As our climate progressively changes, our young and stressed trees will take longer to grow and will require more care to stabilise to local conditions and reach maturity. Managing for tree health will become increasingly important, and selection for tree species and varieties that are drought, heat and insect resistant will become a necessity.

## Water management

A key element in the success of tree growth is the amount of water the tree receives. Many urban landscapes are dependent on supplementary watering to maintain them in a healthy, vigorous condition. It has become evident in recent years that prolonged drought and associated water restrictions have made some landscapes and certain tree species vulnerable. Major changes have occurred both in the condition and health of urban landscapes and the approach to the management of these landscapes. Strategies to adapt trees to a reduced water environment include:

- Estimating water requirements of trees and landscapes
- Introduction of water sensitive urban design initiatives such as bioretention tree pits and rain gardens to harvest and treat stormwater
- Selection of drought tolerant species
- Providing appropriate space (rooting volume) for trees (right tree right location)

## Managing an aging population of trees

The City of Port Phillip has approximately 20% of roads and road sections that contain mature to over-mature trees – trees that are reaching the end of their useful life span.

All avenues and stands of trees have a finite lifespan and at some point in time trees need to be removed and replaced. As trees age they require more and more management to maintain them in a safe and attractive condition. Consequently, a difficult decision has to be made about how to manage mature avenues, including how, when and over what period of time to replace old or declining trees.

Useful life expectancy (ULE) is not the biological life expectancy of a given tree species. ULE relates to how long a tree can be usefully retained within a given site with consideration to the trees condition, aesthetics, management inputs, and risk management.

Figure 7 illustrates the relationship between the time since planting a tree and the aesthetic and functional benefits returned compared to management costs. Once costs exceed benefits, perceived usefulness is reduced.

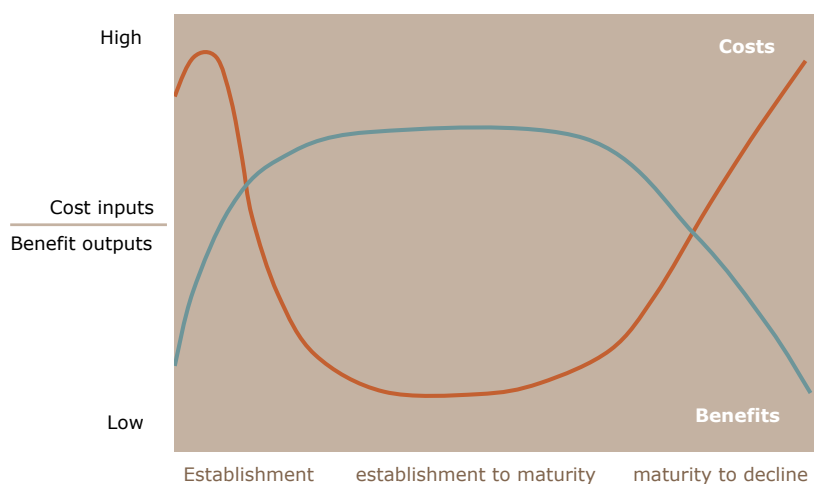


Figure 7. Relationship between time since planting and benefits costs.



A number of different methods and alternatives for replacing trees that are declining are available. These include:

- Replace each tree as it dies or becomes dangerous
- Remove and replant the entire stand or avenue of trees
- Use a phased removal strategy, removing and replacing trees over an extended period of time
- Plant a new row of trees, outside or in-between the line of the existing row of trees, and remove the latter when the new row of trees is established
- Remove and replant in smaller manageable sections, over regular time intervals.

Significant reductions of mature trees would not be generally considered as good practice or acceptable as this would have a negative impact on social, cultural, environmental and economic values. It is also not good practice to artificially keep trees in a position that they are clearly unsuitable for, as this can lead to infrastructure damage, reduced tree health or conflict in the community. Good management will strive to achieve the right tree for the site and seek to avoid practices that adversely affect tree health (Barrell, 1998).

## Tree risk management

A key issue confronting the community is how to manage an extensive tree resource, both from an ecological / landscape perspective and from a public safety standpoint ensuring that reasonable care is taken to manage the risks associated with hazardous trees.

The City of Port Phillip manages vast numbers of trees over large areas and within many varied landscape contexts. In the majority of cases, the large numbers of trees prohibits an individual tree assessment approach. The time involved in the inspection procedure and the works generated from such inspections would be extensive and prohibitively expensive for the community.

A broader, systematic and proactive approach to tree assessment is required that prioritises works on hazardous trees based on the establishment of tree risk. A tree risk management program provides a systematic process for scheduling and inspecting trees, enables the prioritisation of works based on perceived risk, and allows judicious use of community resources.

The fundamentals of tree risk management involve:

- Regular assessment and documentation with prioritisation of works,
- Appropriate tree selection and allocation of suitable space, and
- Properly maintained trees.

The need for crisis management can be alleviated by having in place a tree risk management plan / process that aims to avoid, rectify or remove tree defects before they become hazardous.

## Trees and urban infrastructure

The urban forest is subject to a variety of pressures, conflicts, changes to land-use and public requirements. These pressures lead to damaged trees, which may affect their function and viability in the landscape.

The conflict between tree roots and infrastructure is pervasive in urban areas. The increase in urban development linked to the need and desire to have trees in our landscapes will invariably lead to conflicts.

Understanding the various causes of infrastructure damage will allow the most appropriate actions to be developed to minimise the risk of damage occurring. A range of strategies need to be considered such as species selection and site assessment, root pruning and barrier placement to avoid or manage tree root conflicts with infrastructure.

Most of Port Phillip's streets have above ground power and communication cables. Council has legislative clearance requirements for trees around powerlines. Electricity Safety (Electric Line Clearance) Regulations 2005 (Energy Safe Victoria). This requires regular clearance pruning to attain required clearance distances.

As population increases and re-development occurs there is also pressure to increase the size and number of vehicle crossovers, which can add pressure to existing trees. Co-ordination with service providers and other council departments is required to ensure sustainable management of street trees.

## Tree establishment in the urban environment

The urban forest is subject to a variety of pressures, local climate conditions, varying soil types, soil compaction, variances in soil moisture and vandalism, which may effect establishment and optimum growth of individual trees. Many trees on streets situated close to the foreshore in Port Phillip have to contend with salt spray and salty soils and these conditions preclude many tree species from thriving. Careful choice of tree species is required to ensure minimum tree loss over time. Detailed site assessment is required for all street tree and park planting to determine local site conditions and minimise the establishment issues.



# Community consultation

Initial consultation with the community regarding the tree policy occurred in August and early November of 2009. In order to ensure that a representative number of individuals, groups and opinions were represented, council requested information from the community through a variety of mediums: a telephone, online and in person survey; two tree summits and a community reference group. Participation by the community in the various types of consultation is summarised below. There were:

- 380 telephone surveys
- 130 surveys completed on line or via Councillor Conversation Tents
- 186 participants at two tree summits (Port Melbourne and St Kilda)
- Young people and children consulted at the South Port Youth Festival using video media
- Establishment of a Tree Policy Community Reference Group

Each type of consultation identified different opinions and competing needs associated with trees. All of the information collected from the community was used to inform the development of the policy. The results from all of the community consultations have been compiled in a single document titled 'Trees in the City of Port Phillip – Community Consultation 2009' and is available on the council's website at [www.portphillip.vic.gov.au](http://www.portphillip.vic.gov.au)

## The key themes to emerge from the community consultations include:

- Strong awareness in the community of the need for the right tree in the right place to avoid infrastructure damage, minimise water use and maximise shade. This seems to be a higher priority than planting a particular tree type such as natives.
- Most people feel council's trees on nature strips, parks and other open spaces are generally well maintained to very well maintained, with some area for improvement (particularly from the online and telephone surveys).
- Most people are aware of the reduced water availability for trees and open spaces and are worried about the impact of the drought on trees. There were comments about the need for council to take action to increase the amount of water available to trees through such things as storm water harvesting.
- The tree summits highlighted divided opinions in the community on several issues which relate to net community benefit versus individual benefit. For example the removal of mature trees causing damage to infrastructure and the issue of planting trees for shade that block views.
- The majority of people have indicated that they would be prepared to water trees and nature strips. The results from the telephone and online surveys indicate that there are already many community members watering trees and nature strips.
- There is a clear theme that the community wants to be engaged, involved and informed in relation to trees.

Copies of the draft Greening Port Phillip Strategy, which includes the tree policy, were made available to the community for review and comment over a three week period online and at the service centres and libraries. All comments were considered for inclusion in the final document.



Elms, St Kilda Rd

# Tree Policy

The following section states Council's policy position for each of the key policy areas. These are:

- 1. Tree protection**
- 2. Tree planting and selection**
- 3. Tree removal and replacement**
- 4. Climate change adaptation**
- 5. Tree root management**
- 6. Tree asset management**
- 7. Trees and the urban character**
- 8. Community consultation and involvement**

| <b>Time frames</b> | <b>Abbreviation</b> |
|--------------------|---------------------|
| ANNUAL             | ANN                 |
| ONGOING            | ONG                 |
| MONTHLY            | MTH                 |
| YEAR 1             | YR1                 |
| YEAR 2             | YR2                 |
| YEAR 3             | YR3                 |
| YEAR 4             | YR4                 |
| YEAR 5             | YR5                 |

Beside each policy statement is a list of actions with timeframes for implementation. The actions state current or proposed activities that council will undertake to implement the policy. These policy statements and actions will guide all council tree planting and management activities on public and private land.



Corroboree Tree, Albert Park

# 1. Tree protection

Trees on council owned and managed land shall be protected from construction works and other activities at all times with an objective to reduce the negative impacts of construction on council owned and managed trees. The conflicting requirements of trees and infrastructure maintenance or enhancements will be minimised where possible.

| Policy Statement                                                  | Action                                                                                                                                                                                                      | Time frame                                                                                                                                                                                                                                                                                                                                                                |      |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| <b>Protection of significant trees</b>                            |                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                           |      |
| 1.1                                                               | The City of Port Phillip values all trees within its boundaries and will seek to protect all trees in the public realm and significant trees in the private realm.                                          | Review the City of Port Phillip definition of a significant tree and develop a significant tree register for the public realm.                                                                                                                                                                                                                                            | YR 1 |
|                                                                   |                                                                                                                                                                                                             | Review and where appropriate update the existing local law to ensure the protection of trees in the private realm.                                                                                                                                                                                                                                                        | YR 1 |
|                                                                   |                                                                                                                                                                                                             | Enforce tree protection guidelines and include information on the tree protection guidelines in all planning, building and event permit applications.                                                                                                                                                                                                                     | ONG  |
| <b>Vandalised trees</b>                                           |                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                           |      |
| 1.2                                                               | Following any vandalism to trees including illegal tree removal, wilful damage or tree poisoning the site will be assessed for a site specific response and the community notified of the illegal activity. | If a tree is vandalised the following actions will occur:<br><ul style="list-style-type: none"> <li>Communication with the affected residents</li> <li>Report vandalism to police</li> <li>Erect signage subject to safety requirements</li> <li>Vandalised trees may be left in-situ</li> <li>Replacement planting will be considered on a site by site basis</li> </ul> | ONG  |
| <b>Protection of trees from development and events</b>            |                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                           |      |
| 1.3                                                               | The City of Port Phillip will give existing trees priority when considering applications for new development.                                                                                               | Undertake tree protection activities as per the City of Port Phillip Tree Management Technical Guidelines.                                                                                                                                                                                                                                                                | ONG  |
|                                                                   |                                                                                                                                                                                                             | Enforce tree protection guidelines for development applications as per the City of Port Phillip Tree Management Technical Guidelines.                                                                                                                                                                                                                                     | ONG  |
| 1.4                                                               | The City of Port Phillip will ensure that the location of event infrastructure and temporary structures will not damage trees.                                                                              | Enforce tree protection guidelines for events and capital works projects as per the City of Port Phillip Tree Management Technical Guidelines.                                                                                                                                                                                                                            | ONG  |
|                                                                   |                                                                                                                                                                                                             | Review and modify where appropriate the current process for tree protection during planning applications for development or construction to ensure that trees are protected as a priority.                                                                                                                                                                                | ONG  |
| <b>Protection of trees from overhead powerlines and Utilities</b> |                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                           |      |
| 1.5                                                               | The City of Port Phillip will seek to minimise the impact of pruning to the tree canopy within the legislative clearance requirements.                                                                      | Undertake annual and 2.5 year pruning programs to meet legislative clearance requirements.                                                                                                                                                                                                                                                                                | ONG  |
|                                                                   |                                                                                                                                                                                                             | All pruning will be undertaken to the Australian Standard AS4373-2007 Pruning of Amenity Trees.                                                                                                                                                                                                                                                                           | ONG  |
| 1.6                                                               | The City of Port Phillip will work with authorities to minimise the impact of public infrastructure on tree health and amenity.                                                                             | Encourage Energy Safe Victoria to provide alternatives such as aerial bundling to above ground powerlines when power line conductors are being upgraded.                                                                                                                                                                                                                  | ONG  |
|                                                                   |                                                                                                                                                                                                             | Work with the Power line Relocation Committee to identify opportunities for undergrounding or relocating powerlines to increase the opportunity for maximising tree canopy cover.                                                                                                                                                                                         | ONG  |

## 2. Tree planting and selection

The City of Port Phillip will proactively carry out tree planting in nature strips, parks and reserves and other council owned and managed land to meet the following objectives:

- To increase the number of trees within the city's streets and other council owned and managed land.
- To preserve and enhance the local character of the distinct areas within the city.
- To select tree species that are suitable to the site, provide biological diversity and have the potential to contribute to the landscape without onerous management implications.
- To set and maintain high tree planting and establishment standards.

| Policy Statement                        | Action                                                                                                                                                                                                                                                                          | Time frame                                                                                                                                                                                                                                                |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tree planting</b>                    |                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                           |
| 2.1                                     | The City of Port Phillip will seek to maximise opportunities for greening within the municipality through tree planting and alternative greening options.                                                                                                                       | Identify and plant trees at the optimum tree planting density and locations for each street and park – including using planting sites on nature strips, median strips and round-a-bouts. ONG                                                              |
|                                         |                                                                                                                                                                                                                                                                                 | Identify alternative greening options that could be applied within the City of Port Phillip. YR 1                                                                                                                                                         |
|                                         |                                                                                                                                                                                                                                                                                 | Implement alternative greening options for the City of Port Phillip. ONG                                                                                                                                                                                  |
| 2.2                                     | The City of Port Phillip recognises the environmental, social, economic and cultural benefits of trees to the community and will continue to seek new opportunities for tree planting.                                                                                          | Develop and implement a five year streetscape planting program. YR 1                                                                                                                                                                                      |
|                                         |                                                                                                                                                                                                                                                                                 | Conduct annual tree planting programs in streetscapes and parks. ANN                                                                                                                                                                                      |
|                                         |                                                                                                                                                                                                                                                                                 | Conduct an annual audit of the city to identify missing trees and undertake in-fill planting as required. ANN                                                                                                                                             |
| 2.3                                     | Where appropriate, opportunities will be sought for planting iconic or signature trees.                                                                                                                                                                                         | Incorporate water sensitive urban design principles in planting systems, including the use of bioretention systems, stormwater harvesting and passive irrigation systems. YR 1                                                                            |
|                                         |                                                                                                                                                                                                                                                                                 | Identify suitable sites to plant signature trees to complement and enhance streetscapes and neighbourhood character. YR 2                                                                                                                                 |
| 2.4                                     | Best practice tree planting techniques will be implemented to maximise successful tree establishment rates.                                                                                                                                                                     | Plant signature trees as part of the tree planting program. ONG                                                                                                                                                                                           |
|                                         |                                                                                                                                                                                                                                                                                 | Continue to implement the two year maintenance program for the establishment of new trees, which includes weekly watering from October to March. ANN                                                                                                      |
|                                         |                                                                                                                                                                                                                                                                                 | Document the watering schedule for new trees on the City of Port Phillip web site. YR 1                                                                                                                                                                   |
| 2.5                                     | Use structural soils where appropriate to promote good health and mitigate possible infrastructure conflicts. ONG                                                                                                                                                               |                                                                                                                                                                                                                                                           |
|                                         |                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                           |
| <b>Tree selection</b>                   |                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                           |
| 2.5                                     | Selection of tree species for planting will be based on their suitability to the site, biological tolerances, future climate change conditions and potential to contribute to the landscape without onerous management implications.<br><br>'The right tree in the right place' | Development of a tree species palette suitable for sites in Port Phillip that takes into consideration the need to adapt the species list to future climate change conditions. The list is to be updated annually published on the council web site. YR 1 |
| <b>Park trees</b>                       |                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                           |
| 2.6                                     | Strategic tree planting in parks will be undertaken to maximise amenity, enhance neighbourhood character and social values.                                                                                                                                                     | Develop a priority tree planting program for parks. YR 2                                                                                                                                                                                                  |
|                                         |                                                                                                                                                                                                                                                                                 | Maximise tree planting opportunities when undertaking park master planning or park upgrades. ONG                                                                                                                                                          |
|                                         |                                                                                                                                                                                                                                                                                 | When undertaking park tree planting, consider surrounding streets and parks in order to provide continuity in tree species. ONG                                                                                                                           |
| <b>Nursery tree stock specification</b> |                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                           |
| 2.7                                     | Quality nursery stock will be used for tree planting in accordance with best practice and standards.                                                                                                                                                                            | All trees supplied to the City of Port Phillip will comply with 'Specifying trees-a guide to assessment of tree quality' Ross Clarke, 2003. ONG                                                                                                           |
|                                         |                                                                                                                                                                                                                                                                                 | Where trees are stored at council depots prior to planting they will be appropriately managed. ONG                                                                                                                                                        |



| Policy Statement                                | Action                                                                                                                                                              | Time frame                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Development applications- tree selection</b> |                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2.8                                             | Development applications will align with existing tree planting and streetscape plans and will use species that complement the landscape character of the precinct. | Enforce permit conditions to ensure developers implement the required landscape plans.<br>ONG                                                                                                                                                                                                                                                                                                    |
| <b>Habitat and biodiversity</b>                 |                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2.9                                             | The City of Port Phillip recognises the role of the urban forest in supporting biodiversity by providing habitat for native flora and fauna.                        | Undertake a formal study of native habitat sites within the City of Port Phillip. YR 3<br>Maintain and strengthen wildlife corridors and increase habitat where appropriate. YR 2<br>Develop strategic partnerships with environmental organisations such as Earthcare and conservation volunteers. ONG<br>Undertake a study on how habitat in parks can be enhanced to encourage bird life. ONG |
| <b>Tree planting net community benefit</b>      |                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2.10                                            | The City of Port Phillip will prioritise tree planting over private views to achieve net community benefit.                                                         | All vacant tree sites will be planted. ANN<br>New opportunities for planting trees will be designed to maximise canopy coverage. ONG                                                                                                                                                                                                                                                             |

Note. There are key links between the actions in this section and the actions in The City of Port Phillip Climate Adaptation Plan and the Open Space Water Management Plan.



Flowering Gums, Brighton Road

### 3. Tree removal and replacement

The City of Port Phillip seeks to avoid tree removal wherever possible. There are circumstances, however, in which tree removal is an acceptable management option. Tree removal may occur for human health and safety, to protect infrastructure, to facilitate approved development and infrastructure improvements, to maintain a healthy urban forest or for ecological restoration.

|                                | Policy Statement                                                                                                                                   | Action                                                                                                                                                                                                                               | Time frame |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>Tree assessment process</b> |                                                                                                                                                    |                                                                                                                                                                                                                                      |            |
| 3.1                            | All tree management options will be investigated prior to the removal of a tree/s.                                                                 | Tree removal will only be approved if there are no other viable options.                                                                                                                                                             | ONG        |
|                                |                                                                                                                                                    | Removal of dead trees will be undertaken as part of the regular tree maintenance program as per the City of Port Phillip Tree Management Technical Guidelines.                                                                       | ONG        |
|                                |                                                                                                                                                    | When trees are removed for development the amenity valuation charged is used to plant trees in the area surrounding the development (Refer 6.6).                                                                                     | ONG        |
| 3.2                            | Trees will be removed in a timely manner where they no longer contribute to the streetscape due to poor health or condition.                       | Identify and strategically replace senescent trees that no longer contribute to the amenity of streetscapes and/or park.                                                                                                             | ONG        |
| 3.3                            | The City of Port Phillip commits to a fair, equitable and transparent appeals and reinspection process.                                            | Council will consult and inform the community about proposed tree removal in accordance with the City of Port Phillip Tree Management Technical Guidelines.                                                                          | ONG        |
|                                |                                                                                                                                                    | The process for tree removal requests will be documented on the City of Port Phillip web site.                                                                                                                                       | YR 1       |
|                                |                                                                                                                                                    | The appeals process will be undertaken in accordance with the City of Port Phillip Tree Management Technical Guidelines.                                                                                                             | ONG        |
| <b>Tree Replacement</b>        |                                                                                                                                                    |                                                                                                                                                                                                                                      |            |
| 3.4                            | Replacement of trees that have to be removed due to tree death, poor health or risk to people or infrastructure, will be undertaken as a priority. | Schedule replacement planting of trees removed due to tree death, poor health or risk to people and infrastructure as part of the tree removal process.                                                                              | ONG        |
| 3.5                            | The City of Port Phillip will ensure that the best green outcome is obtained if a tree is removed for development.                                 | Every effort will be made to replace and increase tree canopy cover lost when a tree is removed due to development. The number and type of replacement trees planted will be chosen to suit the site and maximise tree canopy cover. | ONG        |
| <b>Emergency situations</b>    |                                                                                                                                                    |                                                                                                                                                                                                                                      |            |
| 3.6                            | Trees will be removed should they pose a risk to public safety.                                                                                    | Trees will be removed on the same work day as notification is received for immediately hazardous trees.                                                                                                                              | ONG        |

## 4. Climate change adaptation

The City of Port Phillip will use appropriate tree selection, water sensitive design features, mulch and other sustainable landscape practices in order to adapt to and reduce the impacts of climate change on the urban forest.

|                                          | Policy Statement                                                                                                                         | Action                                                                                                                                                                                                                                            | Time frame |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>Managing trees for climate change</b> |                                                                                                                                          |                                                                                                                                                                                                                                                   |            |
| 4.1                                      | The urban forest will be maintained to adapt to a dry climate.                                                                           | Investigate and use tree species suited to a drier climate.                                                                                                                                                                                       | ONG        |
|                                          |                                                                                                                                          | Develop and implement tree management practices that enhance the trees ability to cope with climate change, including the use of storm resistant tree stock and implementation of water sensitive urban design principles.                        | ONG        |
| <b>Water</b>                             |                                                                                                                                          |                                                                                                                                                                                                                                                   |            |
| 4.2                                      | The City of Port Phillip will maximise opportunities to increase the amount of non potable water available to trees in the public realm. | Implement a capital program to deliver storm water harvesting projects as recommend in the Open Space Water Management Plan.                                                                                                                      | YR 1       |
|                                          |                                                                                                                                          | Investigate and implement the use of water sensitive urban design features including bioretention systems, stormwater harvesting and passive irrigation systems in new plantings and retrofit into existing landscapes where appropriate.         | ONG        |
| 4.3                                      | The City of Port Phillip will ensure that existing irrigation systems operate to a minimum of 75% efficiency.                            | Where water sensitive urban design features are used, communication to the community on water sensitive design features will be incorporated into the project.                                                                                    | ONG        |
|                                          |                                                                                                                                          | Undertake irrigation systems upgrades in parks to ensure that all tree irrigation systems are drip line systems.                                                                                                                                  | ONG        |
|                                          |                                                                                                                                          | Audit all irrigation lines on a quarterly basis.                                                                                                                                                                                                  | ONG        |
| <b>Urban heat island</b>                 |                                                                                                                                          |                                                                                                                                                                                                                                                   |            |
| 4.4                                      | Council will maximise opportunities to address the heat island effect.                                                                   | Undertake a project to develop and plan the city's heat island effect areas including a tree canopy coverage current % rate and targeted % rate.                                                                                                  | YR 2       |
|                                          |                                                                                                                                          | Work with the Sustainable Environment and City Strategy teams to develop heat island design and management principles that can be implemented within Port Phillip. This includes increasing tree canopy and greening options within Port Phillip. | ONG        |

Note. There are key links between the actions in this section and the actions in The City of Port Phillip Climate Adaptation Plan and the Open Space Water Management Plan.



Porous pavement on St Kilda Road allows water through and protects the roots of the Elm tree



## 5. Tree root management

The conflict between tree roots and infrastructure is pervasive in urban areas. The increase in urban consolidation linked to the need and desire to have trees in our landscapes will invariably lead to conflicts.

Understanding of the various causes of infrastructure damage will allow the most appropriate actions to be developed to minimise the risk of damage occurring. The conflicting requirements of trees and infrastructure will be minimised where possible.

Council will consider a range of strategies, such as species selection and site assessment, root pruning and barrier placement, to avoid or manage tree root conflicts with infrastructure.

| Policy Statement                                      | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Time frame                                  |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <b>Conflict between tree roots and infrastructure</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                             |
| 5.1                                                   | <p>The City of Port Phillip will seek to minimise conflict between tree roots and built infrastructure, while maintaining the health and integrity of trees.</p> <p>Protection measures for infrastructure will be implemented according to the City of Port Phillip Tree Management Technical Guidelines.</p> <p>All construction works undertaken will be in accordance with the City of Port Phillip Tree Management Technical Guidelines to minimise impact on trees.</p> <p>Provide after-care maintenance to trees after root pruning in accordance with the City of Port Phillip Tree Management Technical Guidelines.</p> <p>Remove and replace inappropriate trees in accordance with the City of Port Phillip Tree Management Technical Guidelines.</p> | <p>ONG</p> <p>ONG</p> <p>ONG</p> <p>ONG</p> |
| <b>Tree damage insurance claims</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                             |
| 5.2                                                   | <p>The City of Port Phillip will undertake an open and transparent investigation into insurance claims resulting from tree roots in conflict with private infrastructure.</p> <p>Insurance claims will be investigated in accordance with the City of Port Phillip Tree Management Technical Guidelines.</p> <p>Claims will be investigated within 15 working days.</p>                                                                                                                                                                                                                                                                                                                                                                                           | <p>ONG</p>                                  |



The roots of the mature Banksia breaking up the curb



## 6. Tree asset management

The City of Port Phillip will provide adequate resources to carry out tree maintenance in road reserves, parks and reserves and other council owned and managed land proactively to meet the following objectives:

- To protect, enhance and preserve existing trees to a high standard.
- Meet relevant legislative requirements, strategic policies and accepted tree care practices.
- Maintain accurate documentation on the management of council's tree assets.
- Maintain currency of knowledge and expertise within the tree management team and the application of the latest technology to ensure tree asset development and maintenance programs continue to meet best tree practices.
- Adopt the principles of Plant Health Care to address pest and disease management with a focus on problem prevention through appropriate tree selection, planting and tree maintenance.
- Maintain public safety through the use of generally accepted professional practices of tree evaluation and treatment in order to reduce risk associated with hazardous trees to an acceptable level.



Contractors line clearing Plane Trees

| Policy Statement                | Action                                                                                                                                                                                          | Time frame                                                                                                                                                                                                                                                  |      |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Tree maintenance                |                                                                                                                                                                                                 |                                                                                                                                                                                                                                                             |      |
| 6.1                             | Tree maintenance works will be undertaken as required to protect, enhance and preserve tree health and amenity.                                                                                 | Undertake a review of the tree maintenance specifications as part of the development of any new tender documentation for tree management.                                                                                                                   | YR 1 |
|                                 |                                                                                                                                                                                                 | Conduct a monthly audit of tree asset condition and contractor performance to ensure compliance with Australian Standards (AS-4373-2007 pruning of amenity trees).                                                                                          | MTH  |
|                                 |                                                                                                                                                                                                 | Conduct an annual review of the Street Tree Maintenance Contractor Performance.                                                                                                                                                                             | ANN  |
|                                 |                                                                                                                                                                                                 | Develop fact sheets on the tree maintenance program and processes and make available on the City of Port Phillip web site.                                                                                                                                  | YR 1 |
| Tree asset data base            |                                                                                                                                                                                                 |                                                                                                                                                                                                                                                             |      |
| 6.2                             | The City of Port Phillip will maintain up to date and relevant information on trees in the public realm.                                                                                        | Review existing tree data base system and implement a computerised real time data management system.                                                                                                                                                        | YR 1 |
| Risk management                 |                                                                                                                                                                                                 |                                                                                                                                                                                                                                                             |      |
| 6.3                             | The City of Port Phillip will seek to maintain public safety through the use of accepted professional practices of tree evaluation and treatment.                                               | Undertake systematic tree assessment and best practice tree management as specified in the City of Port Phillip Tree Management Technical Guidelines to mitigate tree risk for residents and visitors to the city.                                          | ONG  |
|                                 |                                                                                                                                                                                                 | Maintain accurate documentation on the management of council's tree assets.                                                                                                                                                                                 | ONG  |
|                                 |                                                                                                                                                                                                 | Undertake proper tree selection, placement and planting of trees to reduce long-term risk.                                                                                                                                                                  | ONG  |
|                                 |                                                                                                                                                                                                 | Maintain high standards of tree management consistent with current best practice and recognised standards.                                                                                                                                                  | ONG  |
| Pests and disease management    |                                                                                                                                                                                                 |                                                                                                                                                                                                                                                             |      |
| 6.4                             | Pests and diseases are a component of the urban landscape and the council recognises that control measures will be required at times to maintain healthy and aesthetically pleasing landscapes. | Council will follow the monitoring and control program as specified in the City of Port Phillip Tree Management Technical Guidelines for: Elm leaf beetle & Palm Fusarium                                                                                   | ONG  |
|                                 |                                                                                                                                                                                                 | Staff will attend relevant training programs to ensure up to date knowledge of new pest management practices.                                                                                                                                               | ONG  |
|                                 |                                                                                                                                                                                                 | Develop monitoring and control programs for newly identified pests and diseases.                                                                                                                                                                            | ANN  |
| Animal management               |                                                                                                                                                                                                 |                                                                                                                                                                                                                                                             |      |
| 6.5                             | The City of Port Phillip will strive at all times to achieve a balance between maintaining the health of trees and accommodating native animals in the urban forest                             | Use the 'Department of Sustainability and Environment Guidelines for Managing Damage Caused By Brush Tail Possums in Municipal Parks' for responding to possum related issues.                                                                              | ONG  |
|                                 |                                                                                                                                                                                                 | Respond to animal management issues on a case by case basis to determine the most appropriate course of action.                                                                                                                                             | ONG  |
| Tree valuation method           |                                                                                                                                                                                                 |                                                                                                                                                                                                                                                             |      |
| 6.6                             | The City of Port Phillip recognises the value of trees as an asset and will ensure the value of the tree is maintained.                                                                         | Implement the tree amenity valuation formula specified in the City of Port Phillip Tree Management Technical Guidelines that recognises tree condition, age cultural significance and suitability for individual trees.                                     | ONG  |
|                                 |                                                                                                                                                                                                 | Develop, implement and enforce a bond process for protection of tree assets.                                                                                                                                                                                | YR 2 |
| Knowledge and skill development |                                                                                                                                                                                                 |                                                                                                                                                                                                                                                             |      |
| 6.7                             | The City of Port Phillip is committed to using best practice methods to maintain and enhance the urban forest.                                                                                  | Continue to collaborate with other LGA's on the management of trees in an urban environment to stay abreast of current practice and to share learning's and information.                                                                                    | ONG  |
|                                 |                                                                                                                                                                                                 | Work collaboratively to develop a method for ascribing a monetary value to urban trees, including measuring the contribution of trees for cooling urban temperatures, reducing the need for air conditioning in buildings and protection of infrastructure. | YR 1 |
|                                 |                                                                                                                                                                                                 | Investigate opportunities to collaborate with universities to undertake research projects related to trees in the City of Port Phillip.                                                                                                                     | ONG  |

## 7. Trees and the urban character

Street trees make a major contribution to the urban character of the City of Port Phillip. The council will place a high priority on long-term planning to ensure that a mature, diverse tree population is maintained at all times that is in keeping with the character of each individual neighborhood

All avenues and stands of trees have a finite life span and at some point in time trees need to be removed and replaced. In order to sustain the landscape and meet public needs trees need to be planted and established, maintained and removed, based on an understanding of the dynamic nature of the resource.

|                                               | Policy Statement                                                                                                                                                                                                                                                                         | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Time frame                        |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>Streetscape renewal</b>                    |                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                   |
| 7.1                                           | The City of Port Phillip will develop and maintain streetscapes which reflect and reinforce the urban character of the Port Phillip.                                                                                                                                                     | <p>Develop and implement a five year street tree planting program.</p> <p>Streetscape plantings will complement planning policies and strategies including the Municipal Strategic Statement, Structure Plans and Urban Design Frameworks to reinforce or enhance the desired neighbourhood character.</p> <p>Where there is a dominant successful species or other notable trees, the same species will be planted. Alternative species will be supplied where needed to respond to special circumstances.</p>                                                   | <p>YR 1</p> <p>ONG</p> <p>ONG</p> |
| 7.2                                           | <p>Street trees play a crucial role in defining neighbourhood character.</p> <p>Where changes in land use and built form are concentrated the City of Port Phillip will carefully consider how the landscapes and street trees help define the urban character of the neighbourhood.</p> | <p>Streetscape plantings will complement planning policies and strategies including the Municipal Strategic Statement, Structure Plans and Urban Design Frameworks to implement or improve the desired neighbourhood character.</p> <p>Species selection and planting methods will be made to complement and respond to the changes in built form and/ or land use.</p> <p>Parks and Open Spaces will undertake an annual streetscape renewal planning process in collaboration with the City Strategy team to inform the council plan and budgeting process.</p> | <p>ONG</p> <p>ONG</p> <p>ANN</p>  |
| 7.3                                           | In streets where it is not feasible to plant trees the City of Port Phillip will seek opportunities to green the street through other plantings.                                                                                                                                         | Undertake an audit of the streets within the municipality that have been identified as not suitable for tree planting and develop an alternate planting program.                                                                                                                                                                                                                                                                                                                                                                                                  | YR 1                              |
| <b>Significant boulevards and major roads</b> |                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                   |
| 7.4                                           | The City of Port Phillip will protect and reinforce key boulevards which are a defining element of the urban structure and character of the city.                                                                                                                                        | <p>Trees on key boulevards and major roads will be prioritised for protection and enhancement, including: Brighton Road, Queens Road, St Kilda Road, Kerferd Rd, Beach Street, Beaconsfield Parade, Jacka Boulevard, The Esplanade, Marine Parade, Ormond Esplanade, Bay Street and Fitzroy Street.</p> <p>Work with neighbouring municipalities to achieve consistent maintenance and landscape treatments in bordering streets.</p> <p>Develop a planting guide for major boulevards with principles for development.</p>                                       | <p>ONG</p> <p>ONG</p> <p>YR 1</p> |



## 8. Community consultation and involvement

The community is passionate about trees and takes a strong interest in the management of trees. Issues can arise that cause considerable community debate and passion. The community will be notified and given the opportunity to comment prior to any works that impact on trees.

|                                        | Policy Statement                                                                                                       | Action                                                                                                                                                       | Time frame |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>Community notification</b>          |                                                                                                                        |                                                                                                                                                              |            |
| 8.1                                    | The community will be informed and consulted about relevant tree management activities.                                | Implement the communication /engagement protocols for tree management activities as stated in the City of Port Phillip Tree Management Technical Guidelines. | ONG        |
| <b>Resident requests</b>               |                                                                                                                        |                                                                                                                                                              |            |
| 8.2                                    | All resident requests will be responded to in a timely manner.                                                         | Resident requests will be responded to in a timely manner, as defined in the City of Port Phillip Tree Management Technical Guidelines.                      | ONG        |
| <b>Community education/information</b> |                                                                                                                        |                                                                                                                                                              |            |
| 8.3                                    | Council will provide up to date and relevant information on council tree management programs and process.              | Develop community information material such as:                                                                                                              | YR 1       |
|                                        |                                                                                                                        | Fact sheets                                                                                                                                                  |            |
|                                        |                                                                                                                        | How to guides                                                                                                                                                |            |
|                                        |                                                                                                                        | Frequently asked questions                                                                                                                                   |            |
|                                        |                                                                                                                        | Explanations of rain gardens and other water sensitive urban design options                                                                                  |            |
|                                        | Roof gardens, balcony gardens and vertical wall information                                                            |                                                                                                                                                              |            |
|                                        | Information on alternative greening projects                                                                           |                                                                                                                                                              |            |
|                                        | Develop a new Parks and Open spaces web page on the Port Phillip web site to provide current and relevant information. | YR 1                                                                                                                                                         |            |
|                                        | Document the tree management practices on the City of Port Phillip web site.                                           | ONG                                                                                                                                                          |            |
|                                        | Continue to use existing media including Divercity to provide tree information to the community.                       | ONG                                                                                                                                                          |            |
| <b>Adopt a tree</b>                    |                                                                                                                        |                                                                                                                                                              |            |
| 8.4                                    | The City of Port Phillip will continue to promote the 'Adopt a Tree' program across the municipality.                  | Encourage and support residents to 'adopt a tree' to assist with the maintenance of trees.                                                                   | ONG        |
| <b>Community planting days</b>         |                                                                                                                        |                                                                                                                                                              |            |
| 8.5                                    | Council will support the community to actively participate in tree planting and management.                            | Develop and promote a calendar for community planting days.                                                                                                  | YR 1       |
|                                        |                                                                                                                        | Support community groups to promote their activities and recruit members through the development and distribution of a newsletter.                           | ONG        |



City of Port Phillip Tree Summit 2009

# Glossary of terms

|                                                    |                                                                                                                                                                                                                                                      |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Biodiversity</b>                                | The variety of all life forms on earth. The different plants, animals micro-organisms and the ecosystems of which they are part.                                                                                                                     |
| <b>Community Plan</b>                              | Provides a 10 year community vision for the future of the City of Port Phillip.                                                                                                                                                                      |
| <b>Council Plan</b>                                | Outlines Council directions, strategies and actions for a four year period.                                                                                                                                                                          |
| <b>*Exotic</b>                                     | A plant introduced from another country or regions where it was not indigenous.                                                                                                                                                                      |
| <b>*Indigenous</b>                                 | A native plant usually with a broad distribution in a particular country.                                                                                                                                                                            |
| <b>Municipal Strategic Statement</b>               | Sets out the council's strategic planning objectives and underpins the land-use and development provisions of the Port Phillip Planning Scheme.                                                                                                      |
| <b>*Native</b>                                     | A plant found to occur as an endemic or indigenous species where it is growing or a plant known to have originated from a particular place.                                                                                                          |
| <b>*Remnant</b>                                    | A plant or plants of any taxa and their progeny as part of the floristics of the recognised endemic ecological community remaining in a given location after alteration of the site or fragmentation by activities on that land or on adjacent land. |
| <b>*Street tree</b>                                | A tree planted or located within the road reserve.                                                                                                                                                                                                   |
| <b>Structure Plans and Urban design frameworks</b> | Detailed plans guide the development of special precincts and activity centres.                                                                                                                                                                      |
| <b>*Tree</b>                                       | A long lived woody perennial plant, greater than three metres in height with one or relatively few main stems or trunks.                                                                                                                             |
| <b>*Urban forest</b>                               | The entire population of tree and woody shrubs in an urban environment.                                                                                                                                                                              |
| <b>*Urban forestry</b>                             | The management of the entire population of tree and woody shrubs in an urban environment recognising them as critical element of the urban infrastructure.                                                                                           |
| <b>Water Sensitive Urban Design</b>                | (WSUD) is a term used to describe the integration of water cycle management into urban planning and design.                                                                                                                                          |

\* Adapted from Draper and Richards, 2009, Dictionary for Managing Trees in Urban Environments, CSIRO Publishing, Australia.



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- Wolf, K, 1998 *Trees in Business Districts - Positive Effects on Consumer Behaviour,* University of Washington College of Forest Resources, Factsheet #30.
- Wolf, K, 1999 *Grow for the Gold,* [in] TreeLink 14, Washington State Department of Natural Resources
- Wolf, K, 2003 *Public Response to the Urban Forest in Inner-City Business Districts.* *Journal of Arboriculture* 29(3) pp 117 – 126



# Appendix I

## Associated council literature, documents policies and strategies

City of Port Phillip Council Plan 2009 - 2013

City of Port Phillip Tender No. 0753. Tree Maintenance Services. Sets quality standards and requirements for tree pruning, tree planting, tree root maintenance, tree removals and pest and disease management within the municipality.

Port Phillip City Council. Community Amenity Local Law No. 3. July 2005.

City of Port Phillip Street tree removal protocol 2000. Outline of process for street tree removal within the City.

City of Port Phillip. Water plan - Toward a water sensitive City 2010.

City of Port Phillip. Open space water management plan 2010.

City of Port Phillip Street Tree Planting Guide 2010 - 2015.

City of Port Phillip Tree Management Technical Guidelines 2010

Electricity Safety (Electric Line Clearance) Regulations 2005 (Energy Safe Victoria). Legislative clearance requirements for trees around powerlines.

AS 4373-2007 Australian Standard - Pruning of amenity trees. Provides the principles of tree pruning to encourage practices that reduce the risk of hazard development, branch failure, pathogen infection and premature tree death.

Uplifting the crown of all trees shall be to Vic Roads Code of Practice as specified for carriageways.

Street Light Clearances - pruned to AS 11 58.1:1986 (Code of Practice for Public Lighting).

Native Vegetation Framework – which establishes the strategic direction for the protection, enhancement and revegetation of native vegetation across the state.

Water Industry Act 1994, section 67, removal of trees, if a tree is believed to be obstructing works or damaging assets the water authority, or licensee, may, by notice in writing, request the removal of the tree.

Gas Industry Act 2001 Act No. 31/2001, section 148 Powers as to works etc, "...after giving 7 days' notice in writing to the occupier, enter on any land on either side of any pipes, equipment or other devices referred to in paragraph (b), and fell or remove any tree or part of a tree or any obstruction which in the opinion of the gas distribution company or gas transmission company it is necessary to fell or remove."

Rail Corporations Act 1996, section 60 Clearance of trees etc., if any tree or wood in the vicinity of a railway track operated or maintained by a person to whom this section (the rail authority) applies poses a risk to the safety of anyone on, or using, the railway track. The rail authority may, by written notice, require the owner or occupier of any land on which the tree or wood is situated to fell and remove the tree or wood.

If the owner or occupier of the land does not comply with the notice within the time specified in the notice, the rail authority (person), which caused the notice to be served, may –

- (a) enter the land at any reasonable time and carry out the work specified in the notice; and
- (b) recover the cost of carrying out the work from the owner or occupier as a debt.

Road Management Act 2004, under Schedule 3 Specific Powers of State Road Authorities, Clause 10 – Power to remove certain trees or vegetation.



# Appendix 2

## City of Port Phillip tree management technical guidelines summary

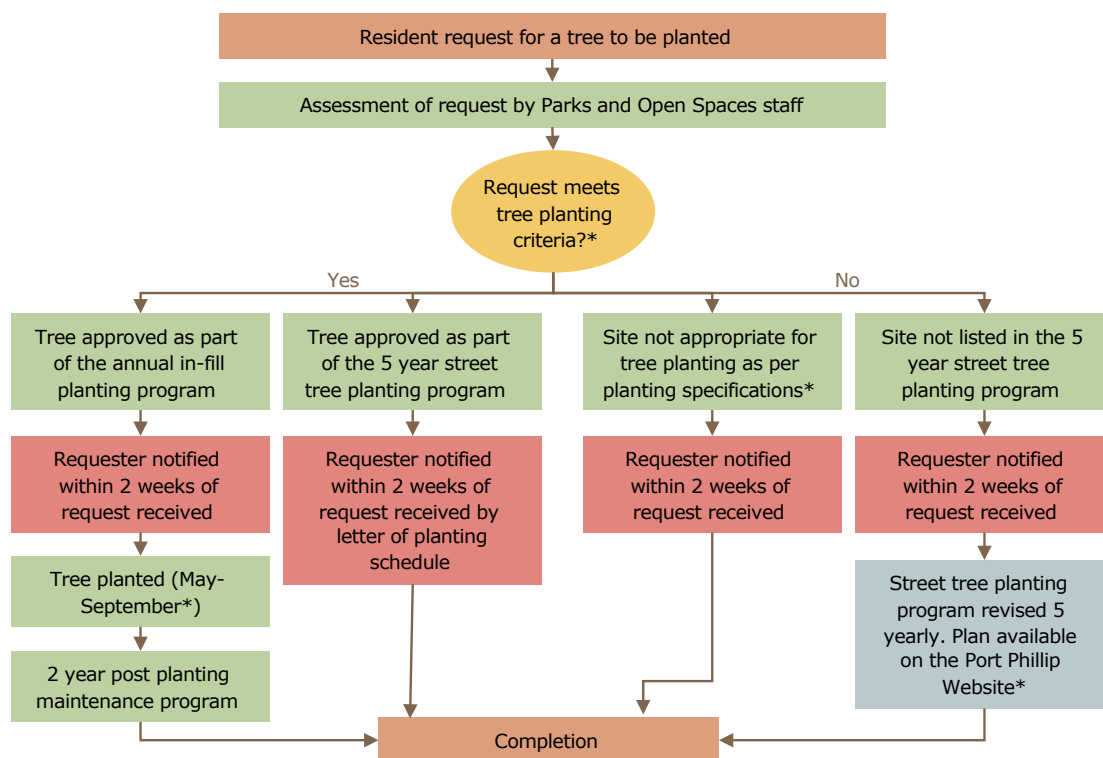
### Tree planting

Council will implement a planned approach to tree planting within the municipality taking into consideration available funding, landscape requirements, environmental constraints, site and seasonal conditions, availability of stock and community expectations.

Tree planting will be undertaken based on:

- The program outlined in the City of Port Phillip Street Tree Planting Plan 2010 - 2015.
- Complimenting planning policies and strategies including the Municipal Strategic Statement, Structure Plans and Urban Design Frameworks to reinforce or enhance the desired neighbourhood character.
- Park improvement projects, Master Plan recommendations and the Park Tree Planting Program.
- Community requests.
- Co-ordination with infrastructure improvement works program, for example road redevelopment.
- In fill planting program. Replacement of removed trees and vacant sites in streets with defined landscape character.

### Process for responding to resident requests for tree planting



#### \*Notes

Tree planting criteria includes whether the site is part of one of the programs of work listed above, as well as such things as assessing site constraints. Tree planting criteria are detailed in the City of Port Phillip Tree Management Guidelines.

Trees need to be planted between May and September to ensure optimum survival rates.

Planting specifications are detailed in the City of Port Phillip Tree Management Guidelines.

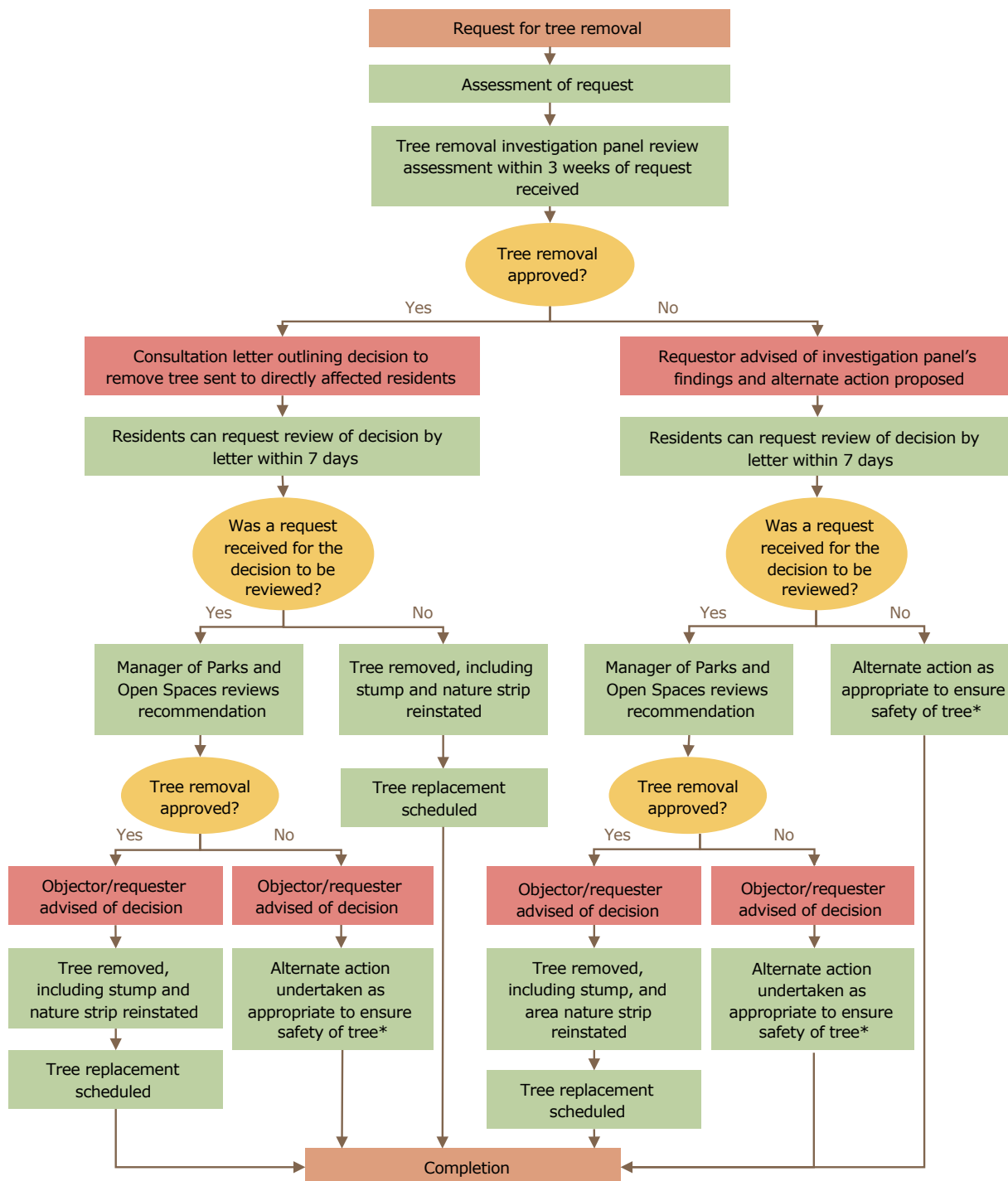
City of Port Phillip Street Tree Planting Plan is a plan that identifies streets prioritised for tree planting for a 5 year period. The plan is revised 5 yearly.

For more detail on community consultation for tree planting, refer to the Community Consultation – In-fill Planting Fact Sheet and the Community Consultation – Street Tree Upgrades Fact Sheet.

# Tree removal

The City of Port Phillip will investigate all tree management options prior to the recommendation for tree removal wherever possible. There are circumstances where tree removal is required in nature strips, parks and reserves and other council managed land to protect human health and safety, infrastructure, facilitate approved development and infrastructure improvements, maintain a healthy urban forest, or for ecological restoration.

## Process for responding to resident requests for tree removal



### \*Notes

Alternative action to ensure safety of a tree can include pruning, staking and structural reinforcement.

The tree removal assessment and process is detailed in the City of Port Phillip Tree Management Guidelines.

For more detail on community consultation and information process for tree removals, refer to the Community Consultation – Tree Removals Fact Sheet and the Informing the community – Emergency Tree Removals Fact Sheet.

## Tree pruning

Maintenance work performed on trees aims to manage tree health and enhance the quality of the treed landscape across the city, as well as reducing the inherent risks associated with trees in an urban area, and complying with legislation.

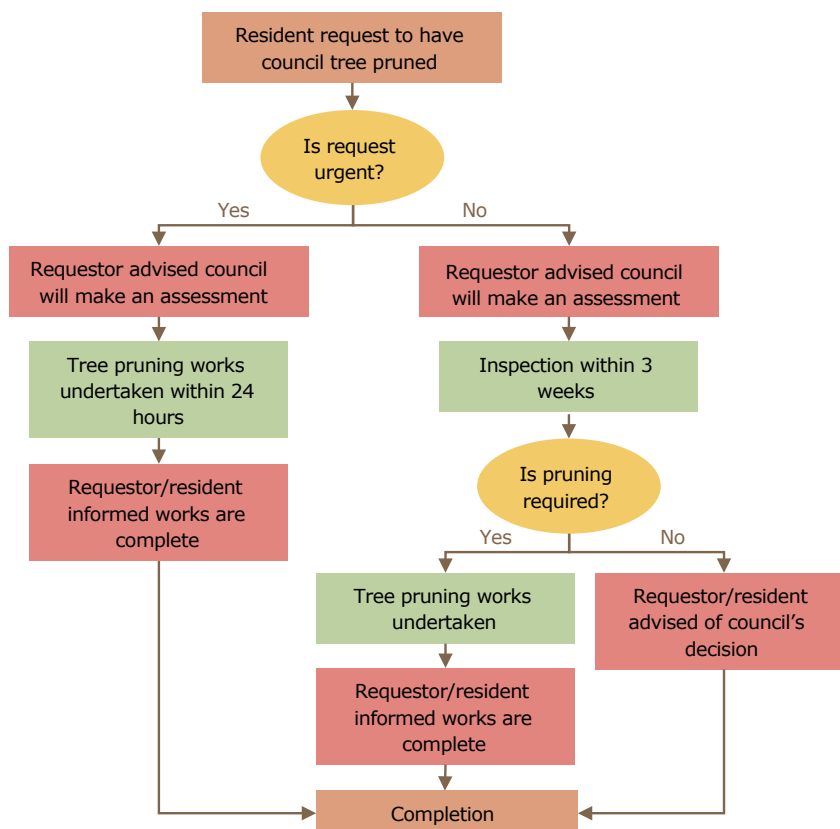
Maintenance work on publicly managed trees will occur to:

- Reduce the risk to public safety.
- Decrease potential damage to property.
- Provide clearances for pedestrians, vehicles and sight lines.
- Provide clearances around services and utility lines.
- Manage tree health.
- To shape young trees.
- Respond to tree or branch failure resulting from severe storms or other damaging activity

Pruning work will be done with regard for the species, age, form, size, condition and position of each tree, with the aim of maintaining the long term health of the tree. All pruning undertaken on trees within the City of Port Phillip will comply with AS 4373-2007 - Pruning of amenity trees.

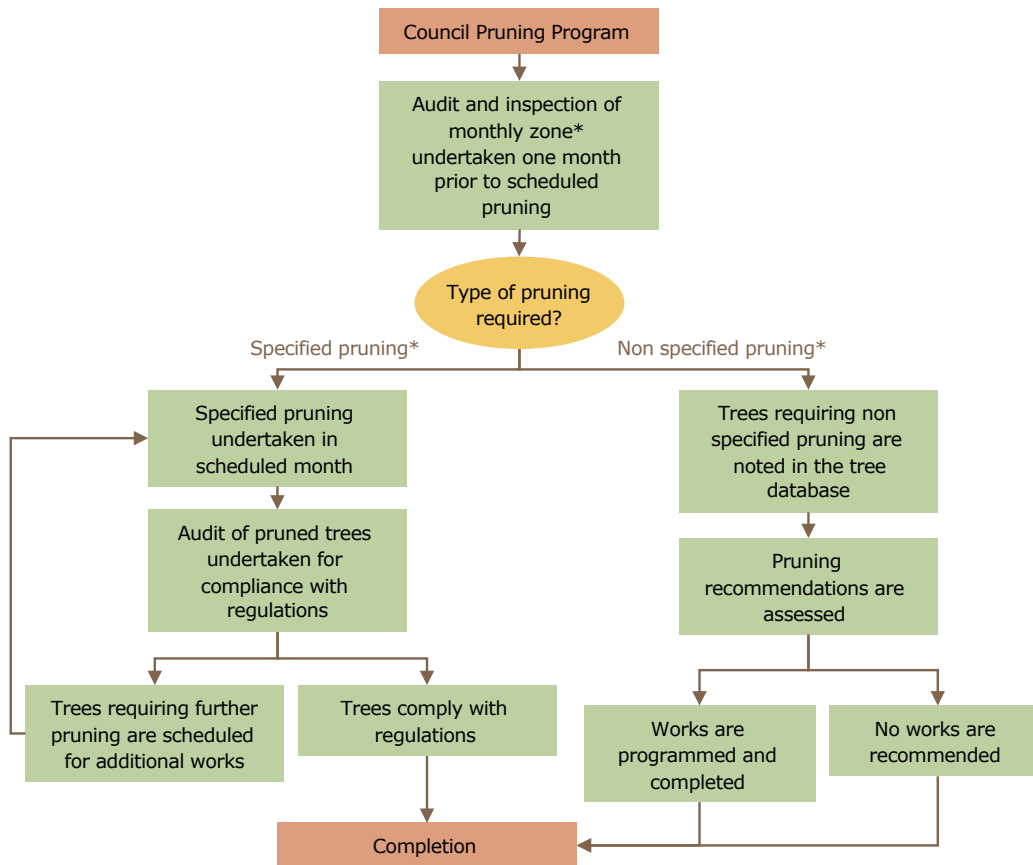
The city has been divided into maintenance zones. The maintenance zones and the Street Tree Zone Pruning Schedule can be viewed on council's website. Trees in residential streets are pruned on a two and a half year cycle. Trees on major roads and streets that are part of a boulevard or avenue are pruned annually as are trees beneath high voltage powerlines.

### Process for responding to resident requests for tree pruning





## Process for scheduled tree pruning



### \*Notes

Monthly zones – refers to the maintenance zones which determine the pruning schedule. The maintenance zones and the Street Tree Zone Pruning Schedule can be viewed on council’s website.

Specified pruning – includes all legislative clearance works and pruning to Australian standard for amenity trees.

Non-specified pruning - the removal of branches over 200mm in diameter. Removal of branches is proposed by contractor and approved by tree management officer.

The tree pruning process is detailed in the City of Port Phillip Tree Management Guidelines.

For more detail on the process for informing the community about tree pruning, refer to the Informing the community –Tree Pruning Fact Sheet.

## Tree root management

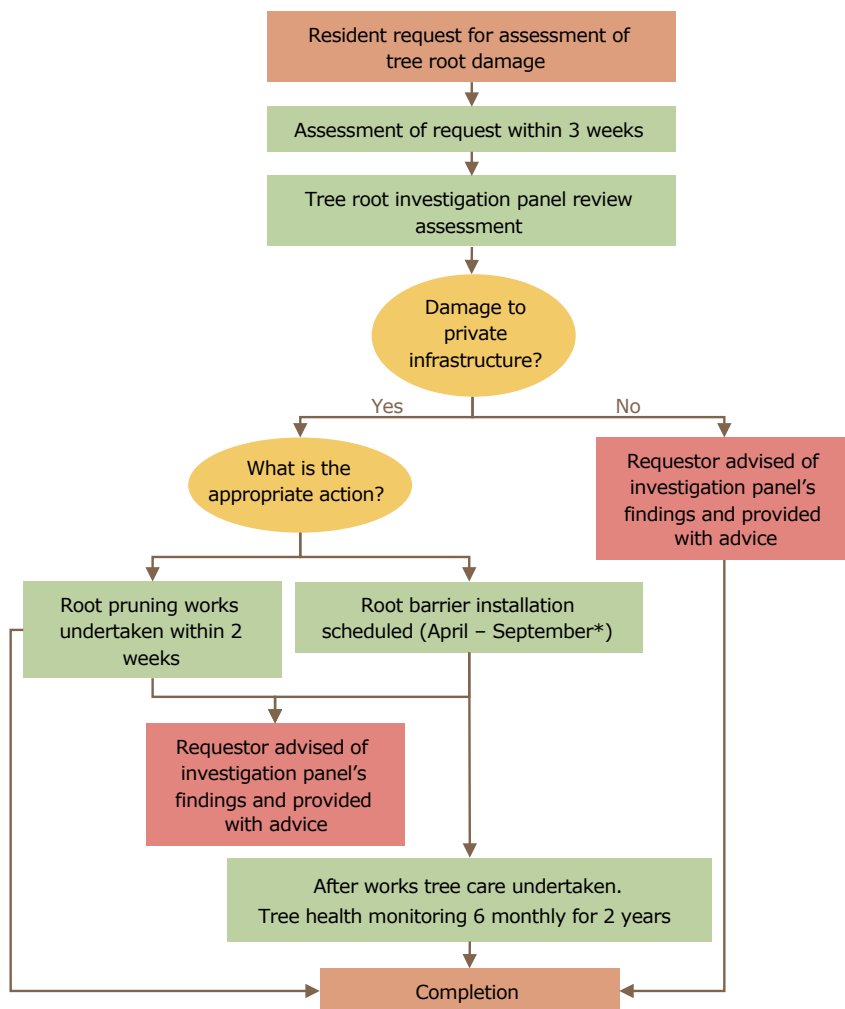
A standard approach to reducing the risk of root damage to infrastructure within the city is required. This involves a coordinated approach from various departments and professionals involved with the management of the city's assets.

A range of design, engineering and biological solutions need to be considered to either avoid or reduce the incidence of conflicts while maintaining landscapes that meet the expectations of the site users. Where there is an identified conflict between infrastructure and tree roots, the two most common management options used by the City of Port Phillip are root pruning and the use of root barriers.

The need for tree root management is generally due to:

- Resident concern regarding potential property damage.
- Potential trip hazards identified.
- Potential for council or utility infrastructure damage.
- Scheduled capital improvement works.

### Process for responding to resident requests for tree root management



#### \*Notes

Scheduling for root barrier installation is undertaken during April to September to ensure optimal tree health is maintained.

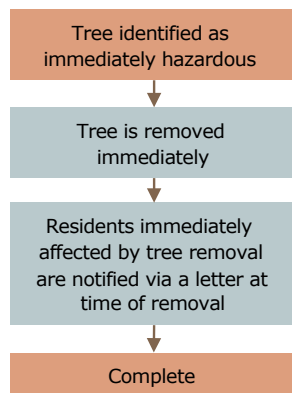
Tree root management processes are detailed in the City of Port Phillip Tree Management Guidelines.

For more detail on community consultation for tree root management, refer to the Community Consultation – Tree Root Pruning Fact Sheet.

## Informing the community – emergency tree removals

Immediate tree removal is required when a tree is identified as being hazardous.

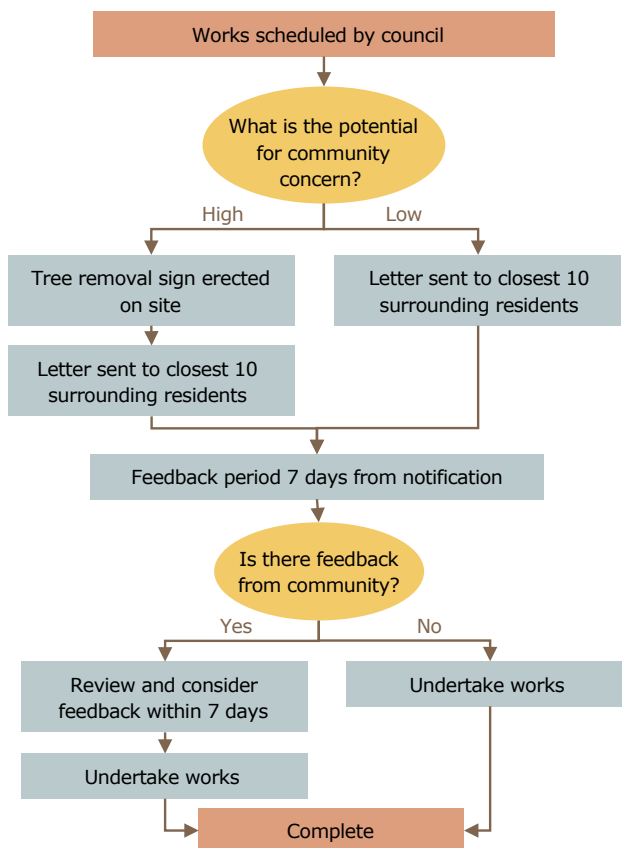
### Community information process for emergency tree removal



## Community consultation – tree removals

Requests for tree removal by the community are considered by council if the tree is found to be hazardous.

### Community consultation process for responding to resident requests for tree removal

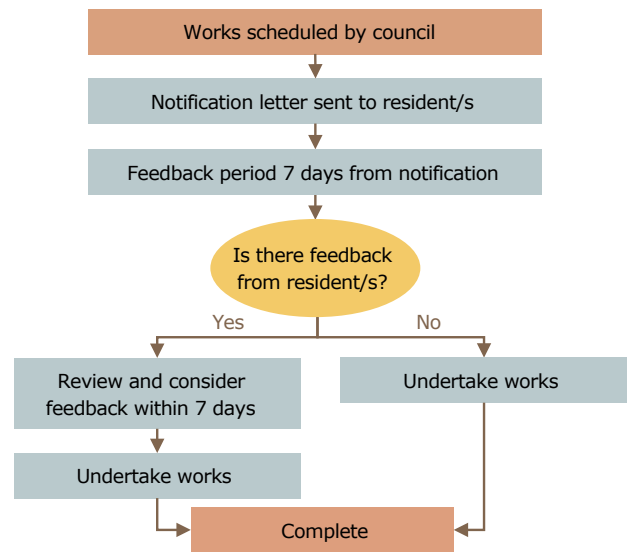




## Community consultation – in-fill planting

Requests by the community for replacement of street trees that have died or been removed are assessed by the City of Port Phillip in the context of available funding, landscape requirements, environmental constraints, site and seasonal conditions, availability of stock and community expectations.

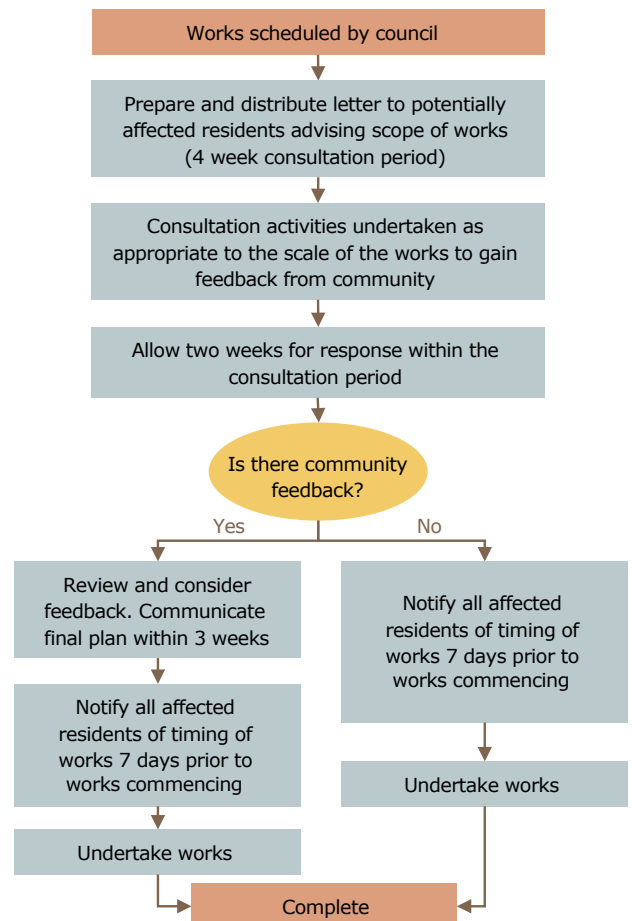
## Community consultation process for in-fill planting



## Community consultation – street tree upgrades

Street tree upgrades can involve partial or full renewal of trees and associated infrastructure within a street.

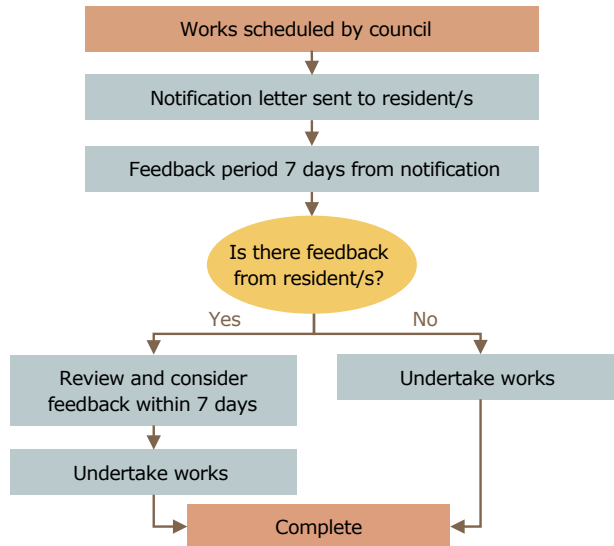
## Community consultation process for street tree upgrades



## Community consultation – tree root pruning

Generally tree root pruning requests by the community are considered by the City of Port Phillip for potential conflicts between infrastructure and tree roots and where potential trip hazards have been identified.

### Community consultation process for tree root pruning



## Informing the community – tree pruning

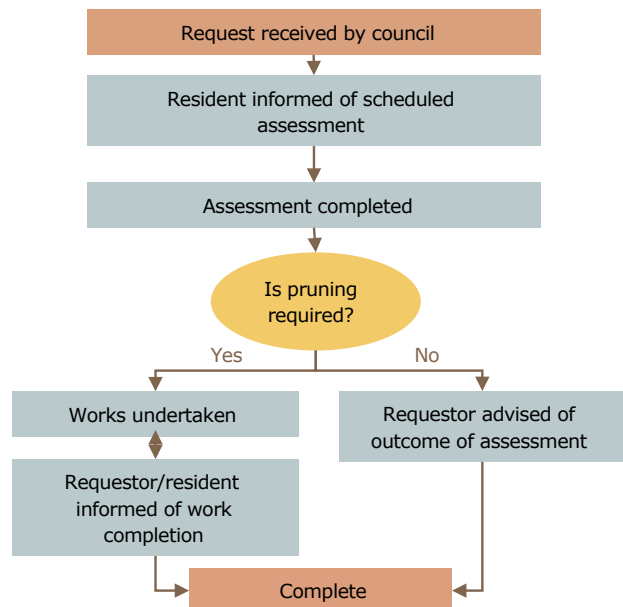
Maintenance work on publicly managed trees will occur to:

- Reduce the risk to public safety.
- Decrease potential damage to property.
- Provide clearances for pedestrians, vehicles and sight lines.
- Provide clearances around services and utility lines.
- Manage tree health.
- To formatively shape young trees.
- Respond to tree or branch failure resulting from severe storms or other damaging activity.

Community information process for scheduled tree pruning:

- Pruning zones and the tree pruning schedule are listed on the City of Port Phillip website.
- A yearly update of the tree pruning schedule is published in Divercity magazine.

### Community information process for resident requests for tree pruning



# Tree valuation

## Protection of trees on private land

Under the Community Amenity Local Law No.3, a significant tree is defined as (a) a tree on private land with a trunk circumference greater than 1.5 metres when measured 1 metre from its base; or (b) a multi-stemmed tree on private land where the sum of the circumference of its exterior stems equals or is greater than 1.5 metres when measured 1 metre from its base.

If a resident wants to remove a significant tree or to cut, trim, prune or anything else that may result in the health of the significant tree being compromised, a permit from council must be obtained.

Applying for a significant tree permit

The applicant is required to:

- Provide a copy of an arborist's report at applicants cost if nominated by councils arborist
- Provide a relevant site plan/drawing;
- Provide a copy of written consent from the Body Corporate Manager or Committee of Management, if applicable;
- Read the Tree Protection Guidelines;
- Complete the Significant Tree Permit Application; and
- Pay the application fee

## Assigning a monetary tree value

Calculation of the amenity value of a tree enables a monetary value to be assigned an individual tree. This monetary value is used to quantify the loss to the community if that tree were to be removed through development, or malicious damage. This cost, or loss of amenity, can then be passed on to the party responsible for the removal, or malicious damage of the tree.

Amenity value should be sought for a tree if the tree is significant (due to its size, prominence in the landscape, rarity, or other highly esteemed social value) and is to be removed for the following reasons:

- As a result of a development application for removal.
- Unauthorised tree removal.
- Tree is damaged structurally or aesthetically beyond that which the tree can no longer be retained.

When considering applications for removal of a significant tree, the amenity value of a tree may be counter-balanced by other factors, for example the best use or benefits of the land the tree occupies.

## Method used to calculate monetary value of a public tree

The *City of Melbourne – Amenity Value Formula, Calculating A Tree's Amenity Value* will be used for the purposes of calculating the monetary value of a public tree. The method may also be used to develop and implement a bond process for any tree where threat to amenity is posed.

The Amenity Value Formula used by the City of Melbourne (Dr. Peter Yau 1990) was derived from the Maurer-Hoffman Formula. The basic monetary value of the formula was updated in 2006 to reflect more current monetary values.

Where the tree amenity value is charged by the City of Port Phillip to a developer, or other person removing a significant tree, a charge of tree and stump removal, tree replacement, planting, 24 months maintenance and, where applicable, paving over of tree plot costs will be included in the costs.

When young trees with a 5cm trunk diameter or less will be replaced by another tree, there will be no amenity value charge. The removal of trees with a trunk diameter greater than 5cm however, if replaced with another tree, will be calculated and charged, the average amenity value of a young replacement tree.

*Tree amenity value formula:*

*Value (V) = Basic Value (\$) x Species (S) x Aesthetics (A) x Locality (L) x Condition (C)*



## Basic monetary value (\$) 2006

The basic monetary value of a tree is determined by matching the trunk diameter at breast height (DBH) with its corresponding value.

| DBH cm | \$    | DBH cm | \$    | DBH cm | \$     |
|--------|-------|--------|-------|--------|--------|
| 6      | 263   | 45     | 14815 | 85     | 52860  |
| 10     | 732   | 50     | 18290 | 90     | 59261  |
| 15     | 1646  | 55     | 22132 | 95     | 66029  |
| 20     | 2926  | 60     | 26338 | 100    | 73162  |
| 25     | 4573  | 65     | 30911 | 105    | 80661  |
| 30     | 6585  | 70     | 35849 | 110    | 88526  |
| 35     | 8962  | 75     | 41154 | 115    | 96757  |
| 40     | 11706 | 80     | 46824 | 120    | 105353 |

## Species factor (S)

A tree is assessed according to its known natural life span and its rate of growth in a particular environment. For example, a long-lived tree will be scored higher than a short-lived tree. Significant features to the tree will also modify how the tree is scored. Judgement regarding species factor must be made by a qualified Arboriculturist.

| Species group | Characteristics                                                                                                                                                                                                                                                              | Score |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1             | trees of short life span (less than 50 years)<br>fast growth rate<br>example: Prunus, Acacia, Virgillia, Laburnum                                                                                                                                                            | 0.5   |
| 2             | trees of short life span (less than 50 years)<br>slow growth rate<br>example: Malus, Crataegus, Eugenia, Waterhousia, Pyrus                                                                                                                                                  | 0.6   |
| 3             | trees of medium life span (50 -150 years)<br>fast growth rate<br>example: Populus, Liquidamber, Eucalyptus, Angophora, Grevillea, Melaleuca, Michelia, Salix, Casaurina, Hakea, Celtis, Acmena                                                                               | 0.7   |
| 4             | trees of medium life span (50 - 150 years)<br>slow growth rate<br>example: Brachychiton, Fraxinus, Gleditsia, Lagunaria, Jacaranda, Shinus, Phoenix, Melia, Robinia, Lophostemon, Lirodendron, Agonis, Metrosideros, Syzygium                                                | 0.8   |
| 5             | trees of long life span (more than 150 years)<br>fast growth rate<br>example: Cupressus, Platanus, Ficus, Pinus                                                                                                                                                              | 0.9   |
| 6             | trees of long life span (more than 150 years)<br>slow growth rate<br>example: Ulmus, Quercus, Sequoia, Ginkgo, Araucaria                                                                                                                                                     | 1.0   |
| Modifiers     | an ubiquitous species (grows like a weed) example: Salix, Fraxinus rotundifolia, Pittosporum undulatum<br>dangerous (poor branch attachment) example: Ulmus fastigiata, Eucalyptus nicholii<br>has undesirable characteristics (eg allergenic) example: Lagunaria patersonii | -0.1  |
|               | a rare species in the locality<br>a special precious cultivated variety<br>a 'significant tree' registered by the National Trust<br>has special historical or other significance                                                                                             | +0.1  |

Trees named are only supplied as examples in Melbourne conditions.

## Aesthetics (A)

The aesthetic value of a tree is determined by the impact on the landscape if the tree were removed. This category is closely tied to the locality factor (L).

|                                                           |     |
|-----------------------------------------------------------|-----|
| contributes little to the landscape                       | 0.5 |
| one of a group of close plantings                         | 0.6 |
| wide plantings                                            | 0.7 |
| irregular spacing between trees; regular spacing one side | 0.8 |
| street or pathway plantings, regular spacing both sides   | 0.9 |
| solitary feature specimen tree                            | 1.0 |
| <b>Aesthetics (A)</b>                                     |     |

## Locality (L)

The locality factor is determined by the tree's geographical situation. Trees in a capital city main street or boulevard score highest because of the stressful growing environment in which the tree has to survive. As the location becomes more rural, the significance of the tree diminishes.

|                                               |      |
|-----------------------------------------------|------|
| in undeveloped bushland or open forest        | 0.5  |
| in country areas and country roads            | 1.0  |
| in outer suburb areas and residential streets | 1.5  |
| in inner city suburbs                         | 1.75 |
| in city Park or Reserve                       | 2.0  |
| in city street, Garden or Mall                | 2.25 |
| city centre main street, principal boulevard  | 2.5  |
| <b>Locality (L)</b>                           |      |



## Tree condition (C)

The tree condition value is determined by the corresponding total score of the assessment criteria.

| Assessment criteria | Criteria condition                 | Score |
|---------------------|------------------------------------|-------|
| Trunk               | solid and sound                    | 5     |
|                     | sections of bark damaged/missing   | 3     |
|                     | extensive decay, hollow trunk      | 1     |
| Growth              | >15cm twig elongation this season  | 3     |
|                     | 5-15cm twig elongation             | 2     |
|                     | <5cm twig elongation               | 1     |
| Structure           | healthy, stable and sound          | 5     |
|                     | some deadwood and dead limbs       | 3     |
|                     | extensive dieback and deadwood     | 1     |
| Pests and diseases  | no pest/disease infestation        | 3     |
|                     | minor symptoms of infestation      | 2     |
|                     | advanced symptoms of infestation   | 1     |
| Canopy development  | full balance canopy                | 5     |
|                     | full but unbalanced, lop-sided     | 3     |
|                     | unbalanced and lacking full canopy | 1     |
| Life expectancy     | >50 years                          | 5     |
|                     | 10-50 years                        | 3     |
|                     | <10 years                          | 1     |
| <b>Total score</b>  |                                    |       |

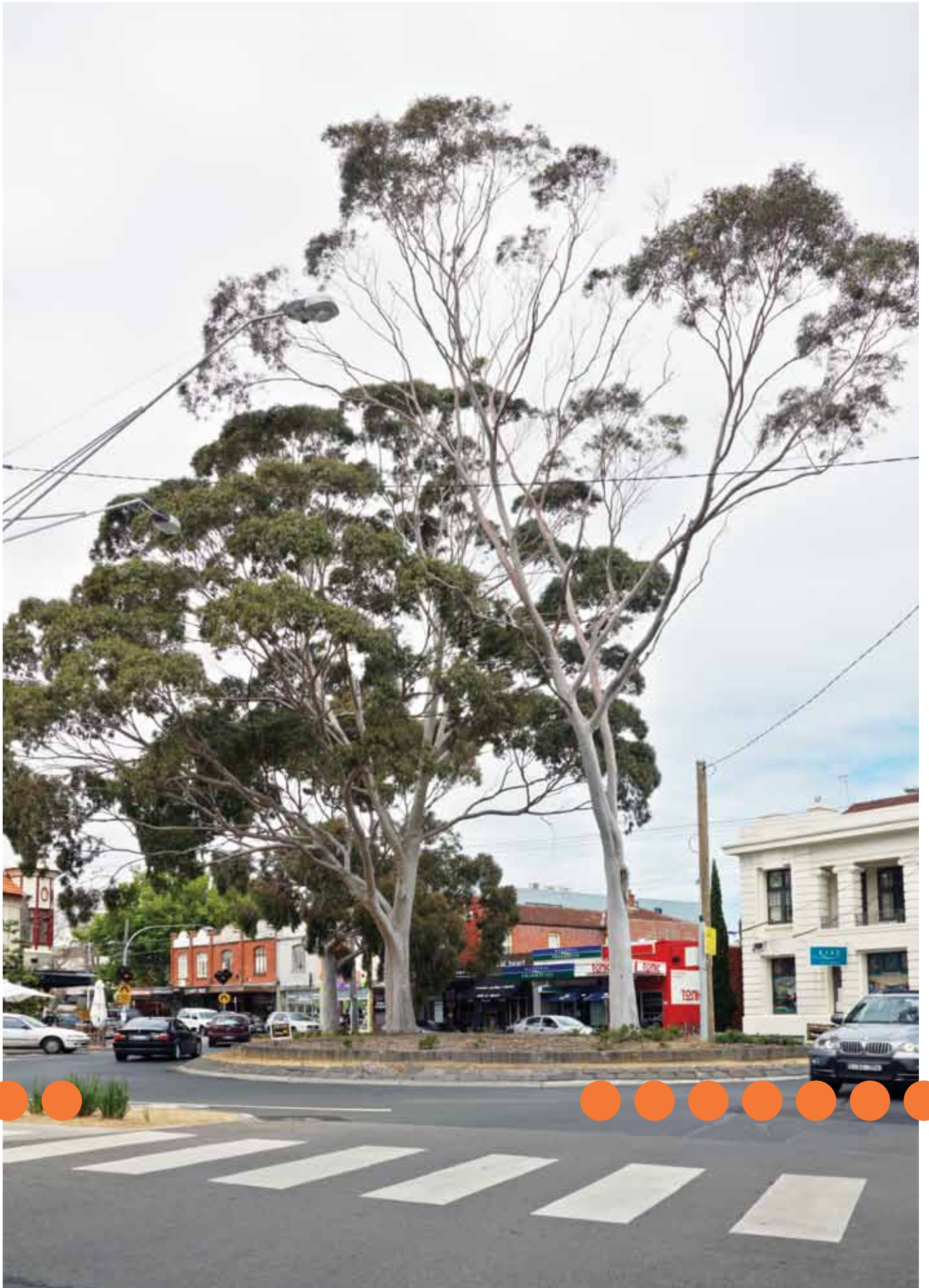
|       |           |     |
|-------|-----------|-----|
| 6-9   | very poor | 0.2 |
| 10-13 | poor      | 0.4 |
| 14-18 | fair      | 0.6 |
| 19-22 | good      | 0.8 |
| 23-26 | excellent | 1.0 |

Tree Condition (C)

|                                                    |  |
|----------------------------------------------------|--|
| Amenity value                                      |  |
| Less costs for replacement tree<br>(if applicable) |  |
| Amenity Value                                      |  |
| <b>Total cost</b>                                  |  |

### \*Note

The amenity value formula used by the City of Melbourne was derived from the formula (made by Dr. Peter Yau 1990) of the Maurer-Hoffman Formula. The basic monetary value of the tree was taken from the internationally accepted table of values devised by the American Council of Tree and Landscape Appraisers and the International Society of Arboriculture, which in the base year 1988 was \$US 27 per square inch trunk basal area. When converted to a value corresponding to centimetres in trunk diameter at breast height (DBH) the Basic Monetary Value table, updated in 2006 to reflect more current monetary values, should be relevant.



Lemon Scented Gums on round about at southern end of Broadway Elwood

(TRANSLATED TO CHINESE)

此信息由 Port Phillip 市政府提供，目的在於告知居民市政府的服務和責任。若想得到此信息的翻譯，請與市政府的口譯服務處聯繫。廣東話翻譯電話 9679 9811。

(TRANSLATED TO GREEK)

Αυτές οι πληροφορίες παρέχονται από το Δήμο Port Phillip για την ενημέρωση των κατοίκων σχετικά με τις δημοτικές υπηρεσίες και υποχρεώσεις. Για μετάφραση αυτών των πληροφοριών επικοινωνήστε με την υπηρεσία διερμηνέων του δήμου. Για μετάφραση στα ελληνικά τηλεφωνήστε στο 9679 9811 Κλήσεις στα ελληνικά 9679 9811

(TRANSLATED TO RUSSIAN)

Эта информация об услугах и обязанностях муниципалитета Port Phillip представлена для жителей муниципалитета. Чтобы получить перевод этой информации, звоните в муниципальную службу переводчиков. Для перевода на русский язык звоните по тел. 9679 9813 На русском языке – звоните по тел. 9679 9813

(TRANSLATED TO POLISH)

Niniejsza informacja pochodzi z Urzędu Gminy Port Phillip w celu powiadomienia mieszkańców o usługach i obowiązkach naszego Urzędu. Egzemplarz tej informacji w języku polskim otrzymać można kontaktując się ze służbą tłumaczeń Urzędu. Po tłumaczenie w języku polskim prosimy dzwonić pod numer 9679 9812  
Polski telefon 9679 9812

For more information please call ASSIST on 9209 6777  
or email: [ospace@portphillip.vic.gov.au](mailto:ospace@portphillip.vic.gov.au)  
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