

KENSINGTON URBAN FOREST

PRECINCT PLAN

2014-2024



CITY OF MELBOURNE

CONTENTS

A MESSAGE FROM THE CITY OF MELBOURNE

The City of Melbourne's urban forest comprises around 70,000 trees in streets and parks as well as approximately 20,000 trees located in the private realm, in addition to a growing number of green roofs and walls across the municipality.

The trees managed by the City of Melbourne in the public realm contribute significantly to the character and identity of Melbourne. An increasing body of evidence and research informs us that urban forests and green space are vital to supporting a healthy community as well as providing a means to adapting to climate change.

The *Urban Forest Strategy* completed in 2012 identified the need to generate a new legacy for Melbourne and create a forest for future generations. This urban forest is to be diverse, robust and resilient in the face of current and future challenges. The urban forest precinct plan documents are a key implementation tool of the *Urban Forest Strategy*, providing a framework for tree planting in streets that will meet the *Urban Forest Strategy* targets.

We have worked closely with the community and key stakeholders to generate this plan and are confident that it provides the basis for a street tree planting program that is consistent with neighbourhood character, the community's vision for the future urban forest, and the principles of the *Urban Forest Strategy*.



Robert Doyle

Robert Doyle
Lord Mayor



Cr Arron Wood

Cr Arron Wood
Chair Environmental portfolio

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INTRODUCTION TO THE PRECINCT PLANS

Urban forest precinct plans guide tree planting and greening in City of Melbourne streets. Precinct plans are subsidiary documents to the City of Melbourne's 2012 *Urban Forest Strategy* and form a key component of the strategy's implementation. Melbourne is divided into 10 precincts.

Each precinct plan has been developed in collaboration with the community, and is grounded in the science underlying the *Urban Forest Strategy* and in sound urban design principles.

What is an urban forest?

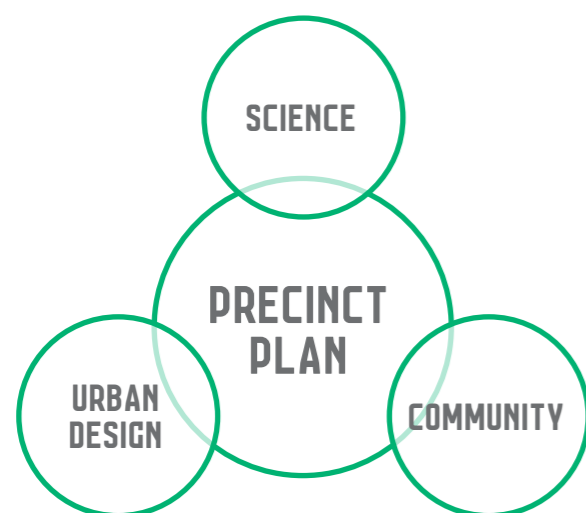
The urban forest comprises all of the trees and other vegetation – and the soil and water that supports it – within the municipality. It incorporates vegetation in streets, parks, gardens, plazas, campuses, river and creek embankments, wetlands, railway corridors, community gardens, green walls, balconies and roofs.

Why is the urban forest important?

The City of Melbourne is currently facing three significant challenges: climate change, urban heating and population growth. These will place significant pressure on the built fabric, services and people of the city.

A healthy urban forest will play a critical role in maintaining the health and liveability of Melbourne by:

- cooling the city
- improving and maintaining the health, well-being and happiness of urban dwellers
- improving social cohesion
- cleaning air and water
- sequestering and storing carbon
- attracting people to live, work and visit in Melbourne
- stimulating economic activity in retail and dining precincts
- providing habitat for native birds and pollinators



THE URBAN FOREST STRATEGY

PRINCIPLES:

- Mitigate and adapt to climate change
- Reduce the urban heat island effect
- Design for health and wellbeing
- Create healthier ecosystems
- Design for liveability and cultural integrity
- Become a water sensitive city
- Position Melbourne as a leader in urban forestry

THE TARGETS SET OUT IN THE URBAN FOREST STRATEGY ARE TO:

Increase canopy cover

The City of Melbourne's canopy cover will be 40% by 2040.

Increase urban forest diversity

The City of Melbourne's urban forest population will be composed of no more than 5% of one tree species, no more than 10% of one genus and no more than 20% of any one family.

Improve vegetation health

90% of the City of Melbourne's tree population will be healthy by 2040.

Improve soil moisture and water quality

Soil moisture levels will be maintained at levels to provide healthy growth of vegetation.

Improve urban ecology

Protect and enhance urban ecology and biodiversity to contribute to the delivery of healthy ecosystem services.

Inform and consult the community

The community will have a broader understanding of the importance of our urban forest, increase their connection to it and engage with its process of evolution.

INTRODUCTION TO THE PRECINCT PLANS **CONTINUED**

Why are we concerned about climate change, urban heat island and population growth?

Climate change impacts to human health and wellbeing are a significant concern for our municipality. Climate change science indicates that Melbourne is likely to experience an increase in the frequency and severity of extreme weather events such as heatwaves, drought and flooding. Heat waves kill more people in Australia each year than any other natural disasters. The average annual temperature is expected to increase by approximately

2.6 C° and the number of hot days each year is expected to increase from nine to 20 by 2070.

The urban heat island effect (whereby urban areas are several degrees hotter than surrounding rural areas) means that central Melbourne will reach threshold temperatures for heat related illness in vulnerable populations more often and for a longer duration

than surrounding suburban and rural areas. The urban heat island is primarily a result of impervious hard surfaces that absorb heat, human activity that generates heat and low vegetation cover that fails to provide adequate shade and natural cooling.

Anticipated population growth and increasing urban intensification means that more people will be at risk during extreme weather events



Thermal imaging of Melbourne, taken late at night, showing how paved, unshaded surfaces store heat from solar radiation and contribute to increased temperatures in urban areas.



Useful Life Expectancy mapped for City of Melbourne Trees.

and, as a result, there will be a greater demand on health services in the City of Melbourne. Urban intensification also places additional pressure on public realm open space as the private realm becomes increasingly built-up (for more information see Melbourne's *Open Space Strategy*). Access to open space is critical to people's physical and mental health and wellbeing.

What can the urban forest do?

Urban forests provide an array of environmental, economic and social benefits that contribute to creating resilient and sustainable cities that are enjoyable places for people to live and work. Some of the significant benefits that our tree canopy can provide to mitigate climate change impacts are shade, cooling and rainwater interception.

The urban forest and its associated benefits have been identified as one of the most cost-effective means of mitigating the potential impacts of climate change and heat on our city. The *Urban Forest Strategy* has established principles and targets for developing an urban forest that will meet Melbourne's needs and create a city within a forest.

HOW DOES MELBOURNE'S URBAN FOREST MEASURE UP?

In order to provide the benefits we need from our urban forest in a changing climate, our tree population needs to be healthy, diverse and resilient. To assess its current state we mapped the trees in our city to measure species/genus/family diversity, useful life expectancy and tree canopy.

Useful life expectancy

Useful life expectancy is an estimate of how long a tree is likely to remain in the landscape based on health, amenity, environmental services contribution and risk to the community. The recent period of drought and water restrictions triggered irreversible decline for many trees. This exaggerated the age-related decline of many significant elms and other trees. Modelling shows that within the next ten years, 23% of our current tree population will be at the end of their useful lives and within twenty years this figure will have reached 39%. Most dramatically, 55% of Melbourne's elms are in a state of severe decline and will likely need to be removed from the landscape within 10 years.

Tree diversity and vulnerability

At present, approximately 40% of our trees come from one family (Myrtaceae). Elm avenues line many of Melbourne's boulevards and plane trees dominate in many streets, particularly within the central city. Within streets 24% of trees are planes, 11% are elms and 8% are spotted gums. Reliance on a few species, and a lack of spatial diversity in species distribution, leaves the urban forest vulnerable to threats from pests, disease, and stress due to climate change.

Canopy cover

Increasing the provision of summer shade and biomass is important in combating the urban heat island effect, adapting to climate change and enhancing our streetscapes for the comfort of people. Canopy cover is a way of expressing, as a percentage, how much of any given area is shaded by trees. Currently, 77% of Melbourne's streets and parks are without natural shade, and the areas of the city with the highest population density have the lowest canopy cover. The City aims to double its canopy cover by 2040 and is currently planting 3,000 trees per year to achieve this target.

How can permeability, availability of water and soil volume be improved?

The urban environment is highly modified, with harsher conditions for plant growth than in natural landscapes. Tree health and the ability to maintain shade and cooling benefits are primarily influenced by the conditions in which trees are growing.

Access to ample soil moisture enables trees to actively transpire and cool the surrounding air. Adequate soil moisture is critical for healthy vegetation. A number of active and passive approaches are currently undertaken to replenish soil moisture and ensure it is maintained at levels to provide healthy growth. Our *Total Watermark Strategy* has been updated to strategically manage Melbourne's water catchment. In the meantime, we have implemented numerous water sensitive urban design projects to capture and store

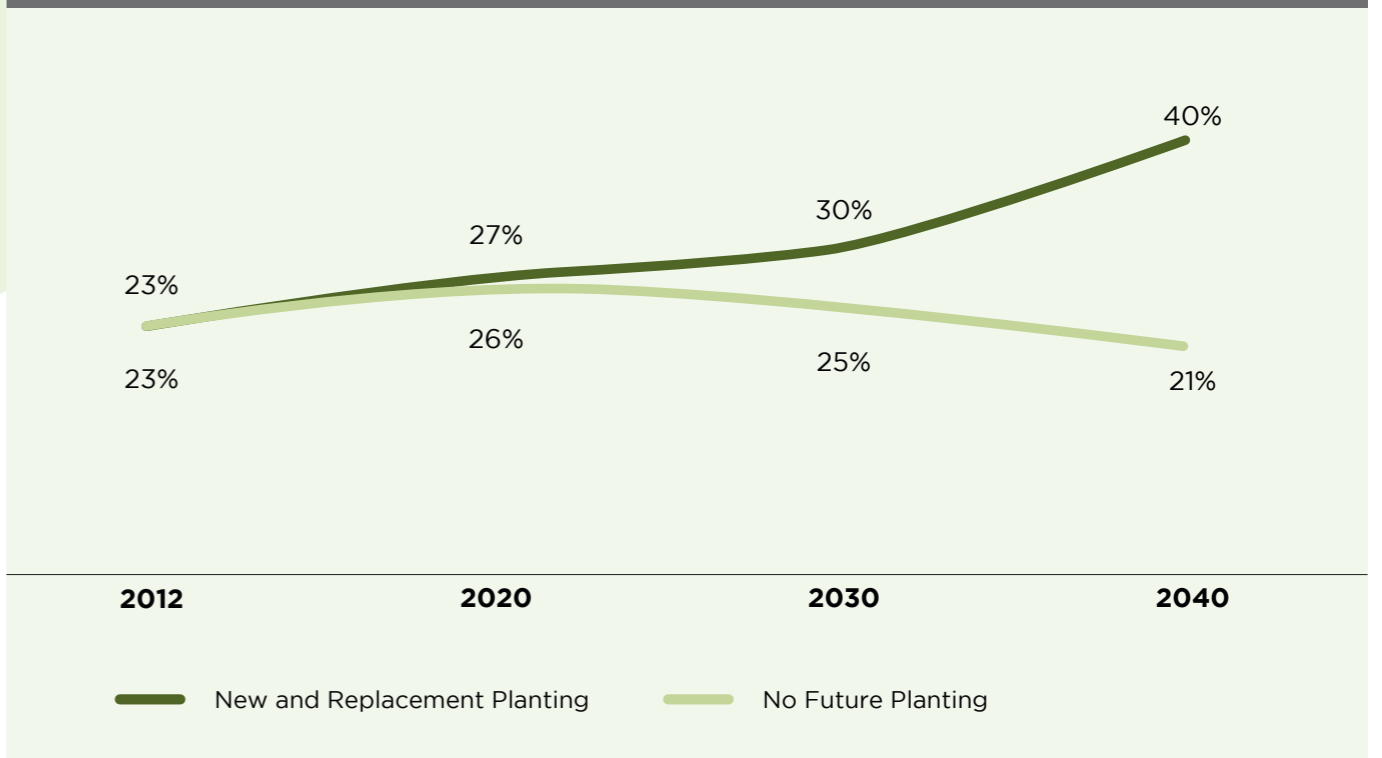
water that would otherwise go down the drain. This water is being used to water the vegetation in our urban landscapes.

Urban development has increased the connectedness of impervious surfaces resulting in:

- decreased vegetation cover and below ground growing space;
- decreased infiltration of water into the ground;
- increased pollutant runoff; and,
- increased hard surfaces which contribute to the urban heat island.

Fundamentally, the city has low levels of water permeability (50%) and water has little opportunity to infiltrate the soil. Ground surfaces need to allow rainfall to enter the soil, a huge reservoir that is ready-made to provide for a healthy forest. We are increasingly using methods to increase permeability through the use of permeable pavement, structural soil cells and peeling back asphalt where possible to provide better growing conditions for trees and vegetation, and a better cooling outcome.

MELBOURNE'S CANOPY GRAPHED WITH AND WITHOUT TREE PLANTING



The lower line represents what is projected to happen to our canopy cover if we stop planting trees. The line above shows what will happen if we replace trees as they are lost and plant new trees at a rate of approximately 3,000 trees per year to 2040.

WHAT WILL THE PRECINCT PLANS ACHIEVE?

The precinct plans will help to guide implementation of the urban forest strategy in Melbourne's streets. The information provided in the plans will direct the annual tree planting program to achieve urban forest strategy objectives, protect and enhance neighbourhood character, and to prioritise works and budgets within each precinct.

Within this document, specific direction is provided on the selection of appropriate trees for the precinct. The plans are performance based in that they

establish the desired outcomes for streets but do not prescribe specific species for each location. A set of *Urban Forest Diversity Guidelines* has been developed for Melbourne's urban landscapes and these will support the precinct plans with case studies and detailed guidance on how to achieve outcomes in streets that are consistent with the urban forest strategy. Park and significant boulevard trees will be planted using existing master plans and site specific plans.

Policy context

The relationships between the precinct plans and City of Melbourne policy documents are outlined in the Urban Forest Strategy. Within Kensington, the heritage overlays, Arden Macaulay Structure Plan, Open Space Strategy and future development areas strongly influence the future character of the precinct.



The City of Melbourne boundary is shown in grey and the Kensington Precinct is highlighted in orange.

THE VISION FOR KENSINGTON URBAN FOREST

Kensington's urban forest will be a tranquil oasis composed of a diversity of street and park plantings blending seamlessly with community and private garden spaces. The neighbourhood will be cooled by trees and sustainable landscapes that also create spaces to gather, socialise, play and grow food. A beautiful canopy of colour, scent and variation provides interest, shade and entertainment for all. Kensington's urban features are buffered by greenery attractive to native birds, insects and animals that bring the sound of the bush to the inner city.



WHAT WILL THE PRECINCT PLANS ACHIEVE? CONTINUED

Complementary strategies

The precinct plans address tree planting in Melbourne's streets but there are many ways in which the private and public realm can contribute to meeting urban forest objectives and creating a city resilient to climate change. These include:

- Water sensitive urban design
- Tree planting in parks
- Private realm tree planting that contributes to urban forest canopy, diversity and connectivity
- Planting vegetation that enhances urban biodiversity
- Maximising permeable surfaces and growing space for trees
- Building green roofs and walls
- Greening balconies
- Implementing innovative green technologies

The City of Melbourne is working with stakeholders in both the public and private realm to support these outcomes.

Opportunities exist to enhance canopy cover in the private realm. The projected canopy cover for the entire precinct has included a potential to increase private realm canopy cover to just over 7% by 2040. In order for this to occur, private and institutional land owners, and developers would need to actively create space for and plant trees.

The City of Melbourne will support private residents to plant trees by providing materials that advise on suitable trees to plant in small yards and by seeking creative ways to encourage private land planting.

Council will also continue to educate residents on how they can contribute to and be involved in the urban forest through our ongoing community engagement work.

In and adjacent to the Kensington precinct, the Flemington Racecourse and Melbourne Water manage large areas of land that could potentially support greater canopy cover and biodiversity. The City of Melbourne will work with institutional and large holding land managers across the city to support and encourage the adoption of urban forest strategy principles on those lands. Similarly, the City of Melbourne will work with neighbouring municipalities to support and encourage the adoption of urban forest strategy principles in other jurisdictions.

Historical and existing tree plantings

Kensington is bounded by two important waterways, the Maribyrnong River to the west and Moonee Ponds Creek on the east. The creek has been channelised but was formerly marshland and lagoon. Both waterways have a strong connection to indigenous occupation by Aboriginal people of the Wurundjeri tribe (as reflected by the existing Areas of Aboriginal Cultural Heritage Sensitivity which follow their courses).

Following settlement, the land was surveyed and subdivided in the 1840s with land initially sold for cattle grazing. In the 1880s and 1890s the subdivision and sale of 'Kensington Park Estates' created the older residential neighbourhoods on the higher ground north and south of Bellair Street. The area became

central to key primary industries in Victoria including wool growing, flour mills, cattle sales and abattoirs. The Newmarket sale yards opened in 1859 and operated until the 1980s. The yards were then developed into the Lynch's Bridge housing project.

The low lying land around Kensington frequently flooded and formed a barrier to central Melbourne and the markets. As a result there were moves made to fill in some of the low lying land and convert it to industrial use over the course of the late 1800s and early 1900s. Eventually, all wetlands were filled in for other uses.

Kensington was part of the City of Essendon when founded in 1861, then split to form the Borough of Flemington and Kensington in 1882. In 1905 the Borough amalgamated with City of Melbourne. In 1993, the part of Kensington between Epsom, Macaulay and Racecourse Road was transferred to the City of Essendon (which then became Moonee Valley City Council). Melbourne's boundary was also altered to take in the Flemington Racecourse and Melbourne Showgrounds at that time. In 2008, City of Melbourne's boundary changed again to take in all of Kensington.

Limited information is available on early tree planting in Kensington. In 1890 the Flemington and Kensington Council resolved to plant trees in Eastwood Street and Bellair Street but the date of planting is unknown. In 1897, three local area Councils joined calls for tree planting along the railway corridor to screen the stagnant Moonee Ponds Creek and industrial areas. Mature peppercorn trees are prominent in Kensington's urban forest and were historically planted

to alleviate dust along the stock route and railway corridors. A number of peppercorns on private land are on Melbourne's Exceptional Tree Register.

Kensington character

Kensington has historically been divided between its industrial landscape of the river flats and its residential areas of small, single storey houses lining narrow streets along the ridge separating the Maribyrnong River and Moonee Ponds Creek. However, increasing residential development of the industrial area is changing the character of that part of the precinct and has spurred new tree planting and open space development.

Most of the residential area is laid out on a longitudinal grid parallel to Kensington Road. The Kensington Banks project and Holland Estate redevelopment are relatively recent urban renewal projects. The Arden Macaulay Structure Plan areas are likely to undergo renewal in the coming years.

The Macaulay Road shopping precinct offers a lively retail and community hub with a strong sense of "urban village". Kensington contains a few wide main streets, some of which provide opportunities for central medians with trees. Most of the local streets, however, are narrower with narrow footpaths also.

Kensington's urban forest character is strongly influenced by the peppercorns, ash and native trees growing along the stock route and railway corridor. Strong avenue plantings of English elms and London plane trees are also

core features of the established residential area. Scattered, large river red gums featured in several parks and notably in the Eastwood and Rankins Road roundabout also lend a strong native character to the neighbourhood.



Newmarket Stock Saleyards. 1925 ca - 1940 ca. Charles Daniel Pratt. Airspy Collection of Aerial Photographs. H91.160/1755. State Library of Victoria Collection. Looking east across the saleyards over Smithfield Road and Epsom Road showing the extent of existing tree planting.



Kensington Park Estate Auction Notice. Ca. 1880 - 1890. Troedel & Co. Lithographer. Troedel collection. Land subdivision posters. State Library of Victoria collection.

COMMUNITY PRIORITIES

Kensington's Urban Forest Precinct Plan has been developed in collaboration with the community, which is reflected in the character, vision, planting plan and priorities defined for Kensington's urban forest.

Consultation highlighted that Kensington is a diverse and engaged inner city community with a strong sense of local identity and desire to improve their urban forest in partnership with Council. Sustainability of urban landscapes in terms of water use was also a key theme.

Our work with the Kensington community indicated a preference for trees that will sustain the community through the provision of shade and cooling, sensory stimulation, social opportunities, food and ecological diversity.



COLOUR

Desired future states defined by the community

- Green, leafy, native
- Shady, sheltered from wind
- Varied in colour, texture, scent, understory, seasons, height, shape
- Social, evocative, peaceful, natural, vibrant, elegant
- Connected to the water
- Water sensitive

Urban forest benefits highlighted through community consultation

- Shade
- Biodiversity
- Aesthetic beauty
- Psychological benefits, for example a sense of calm and a soothing environment.
- Social cohesion
- Cultural, for example indigenous trees, nativeness, connection to water
- Wind mitigation
- Water capture and storage



SHAPE, DIVERSITY AND LAYERS

Images selected by the community as representing a preferred future for Kensington urban forest that includes colour, shape, layers, diversity and canopy.

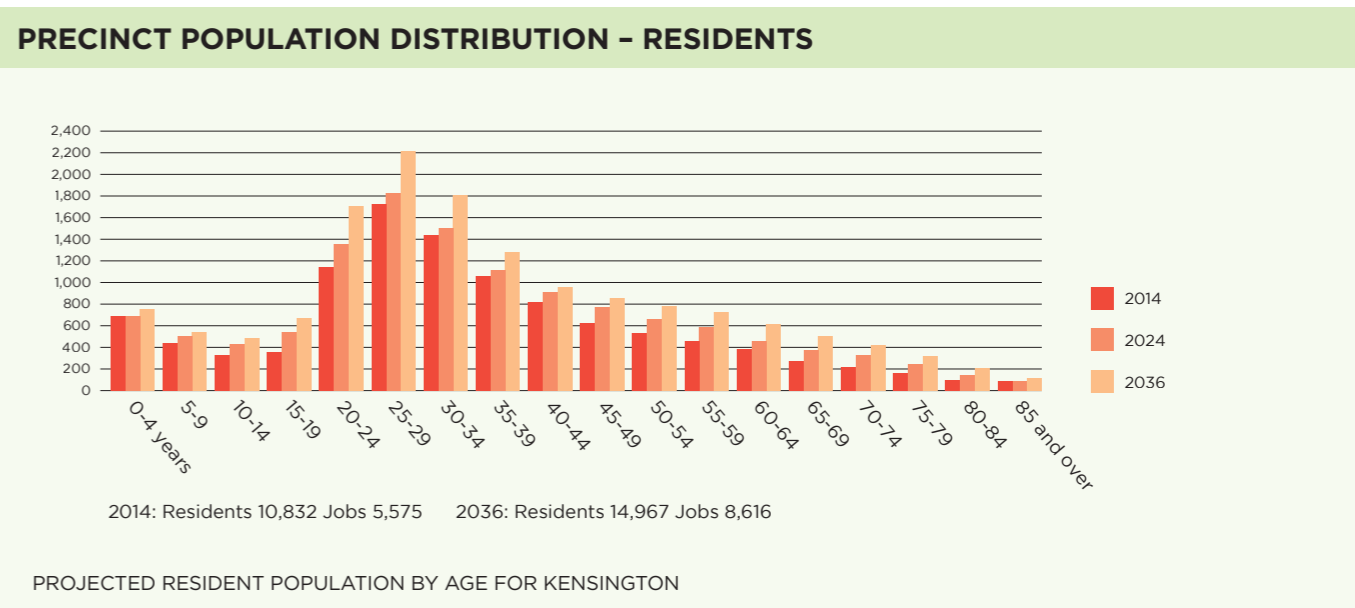
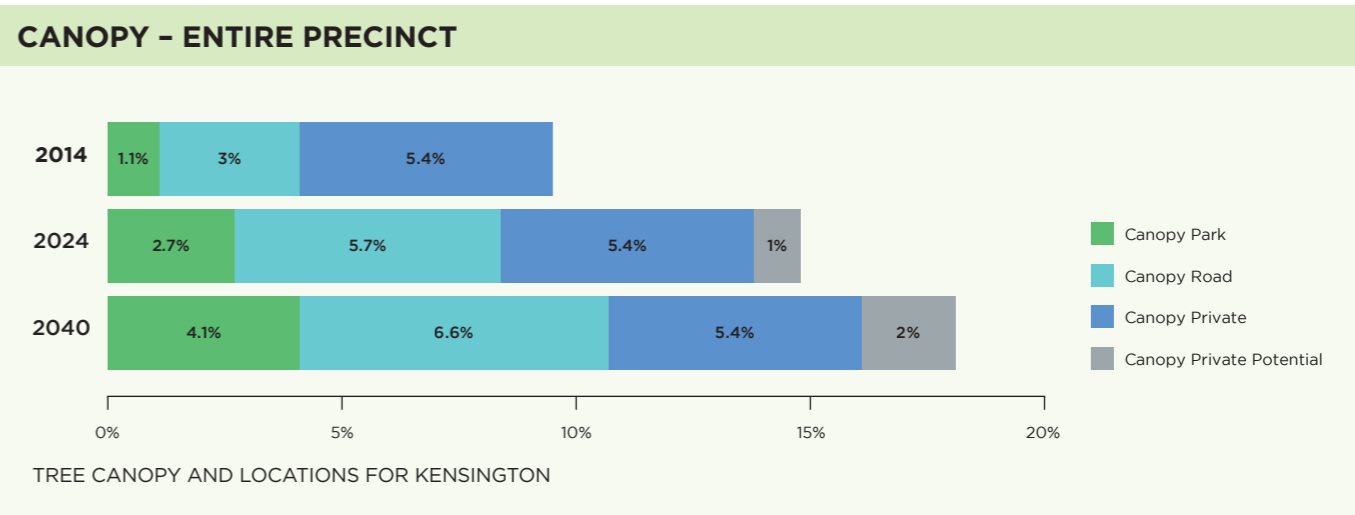
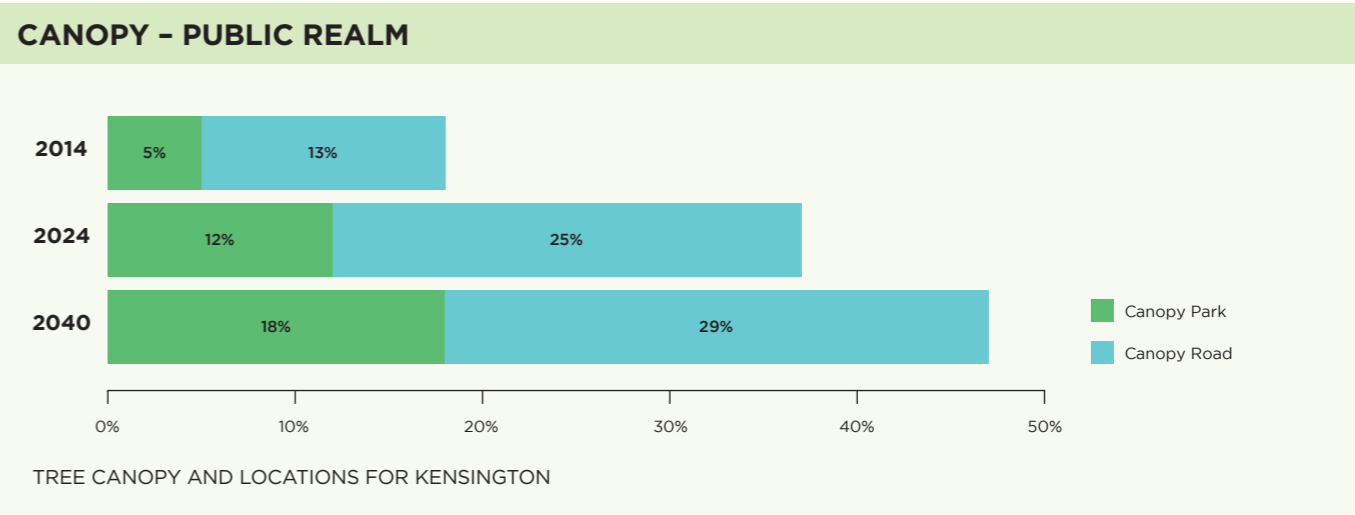
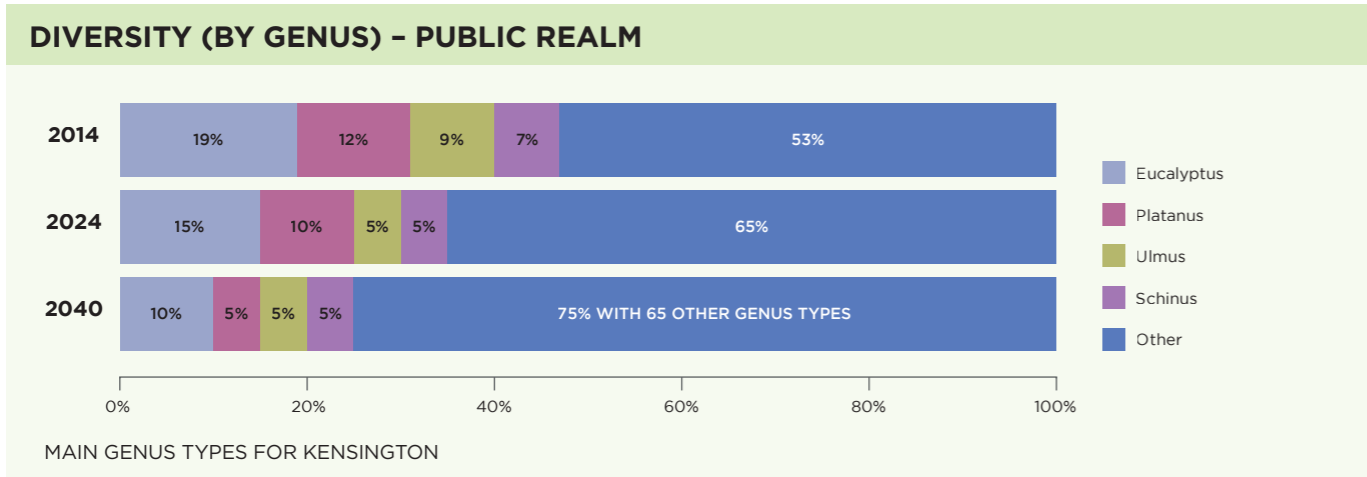
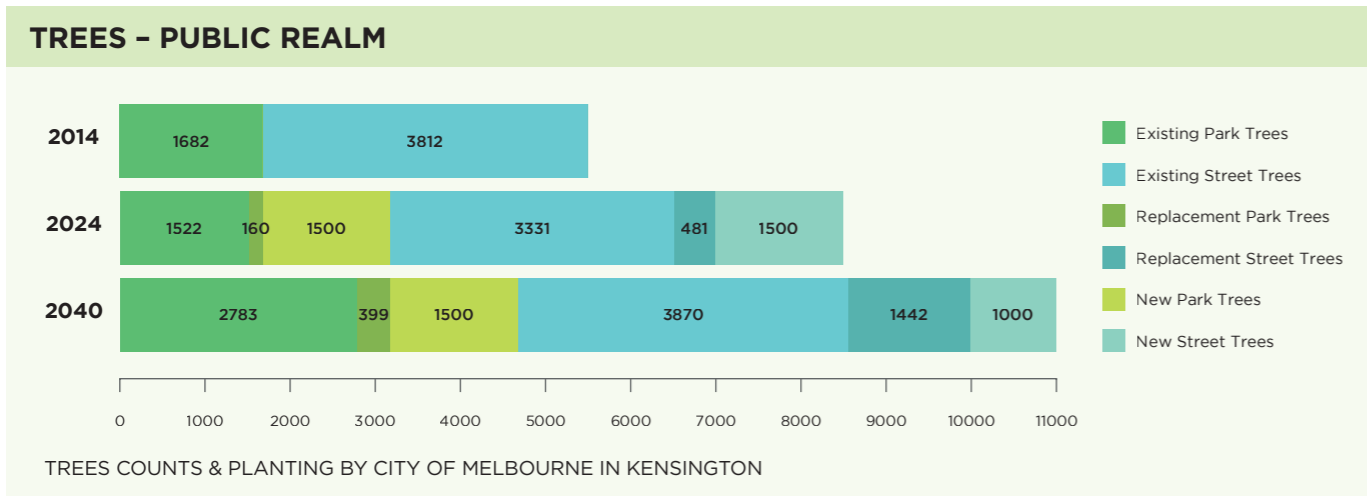
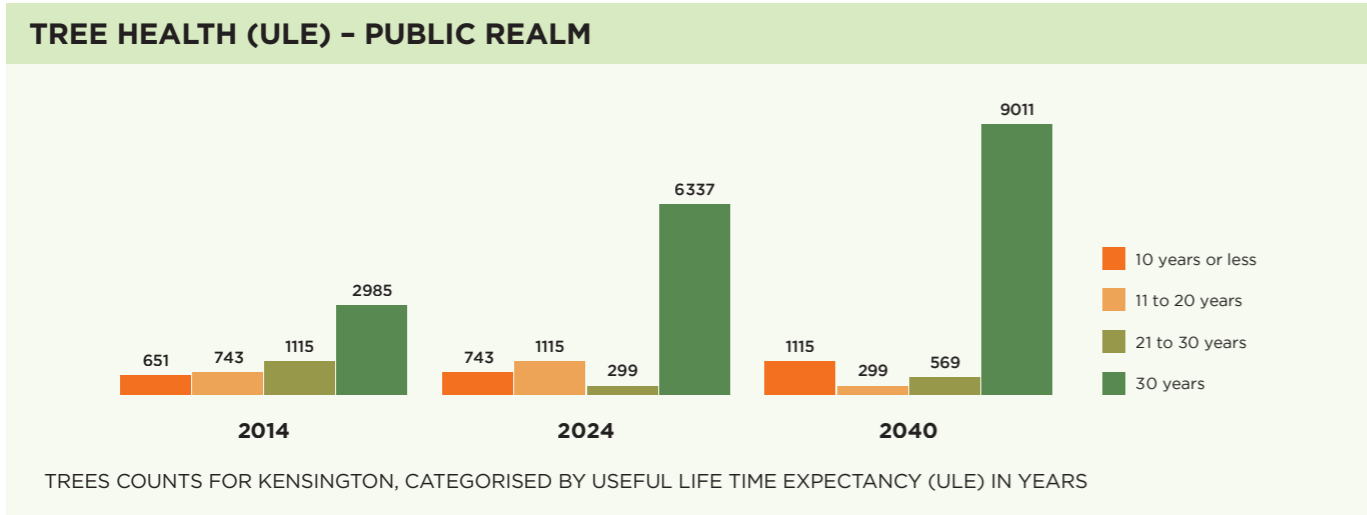
STREETScape



Kensington community members developing priorities for planting in the precinct. (opposite)



KENSINGTON URBAN FOREST IN 2014 AND ITS PROJECTED FUTURE



PRIORITISING TREE PLANTING IN STREETS

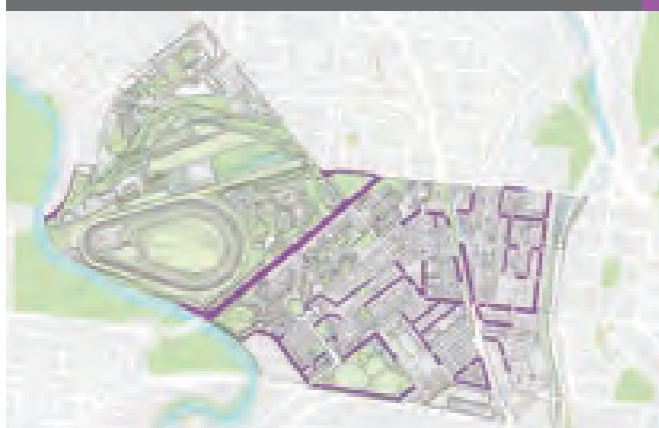
1. Streets with opportunities for planting or replacements



2. High density (>20) of vulnerable residents (<5 or >74 yo)



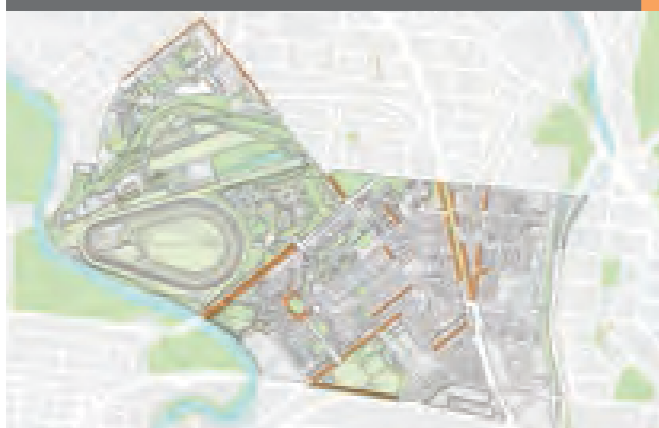
3. Community identified priority for greening



4. Hot and very hot streets



5. Tree replacements required in next 10 years



6. Canopy Cover <20%



Map 1: Planting priorities

The priority for work in different streets has been determined using varied criteria and the associated timing is provisional only. The schedule for some streets may be brought forward or delayed by capital works, renewal projects or developments that affect tree planting or survival. Unforeseen opportunities for streetscape improvement may also alter scheduled planting.

Streets prioritised for work in Years 1 - 4 (2014 - 2017) include those:

1. Already scheduled for work in the current planting season; or,
2. Having a high number of vulnerable people with two or more occurrences of: community priority, very low canopy cover, temperature hot spot or replacements required.

Streets prioritised for work in Years 5 - 7 (2018 - 2020) include those:

1. Having a high number of vulnerable people with one occurrence of: community priority, very low canopy cover, temperature hot spot or replacements required.

Streets prioritised for work in Years 8 - 10 (2021 - 2024) include those with only:

1. High number of vulnerable people; or a combination of,
2. Community priority;
3. Very low canopy cover;
4. Temperature hot spot; or
5. Replacements required.

Prioritising tree planting in streets

When prioritising where to plant, it is important to focus resources in the locations that need it most. This includes consideration of where we have opportunities to plant new trees or replace trees, where the highest density of vulnerable people reside, which streets are the hottest in summer, and where very low canopy cover exists today.

Replacements are only identified for streets where the useful life expectancy of multiple trees is rated at less than 10 years. Census and mapping data were used to spatially define streets with these conditions and are defined on the maps overleaf.

HOW THE PRECINCT PLAN GUIDES ANNUAL PLANTING



Set annual planting program

- Priorities (Map 1)
- Streets undergoing unforeseen change (Eg. Infrastructure Project or Development)
- Annual Budget



Define objectives for streetscape

- Review guiding principles and considerations for tree planting (Map 2-7)



Define planting strategy

- Maps 8-10



Select species

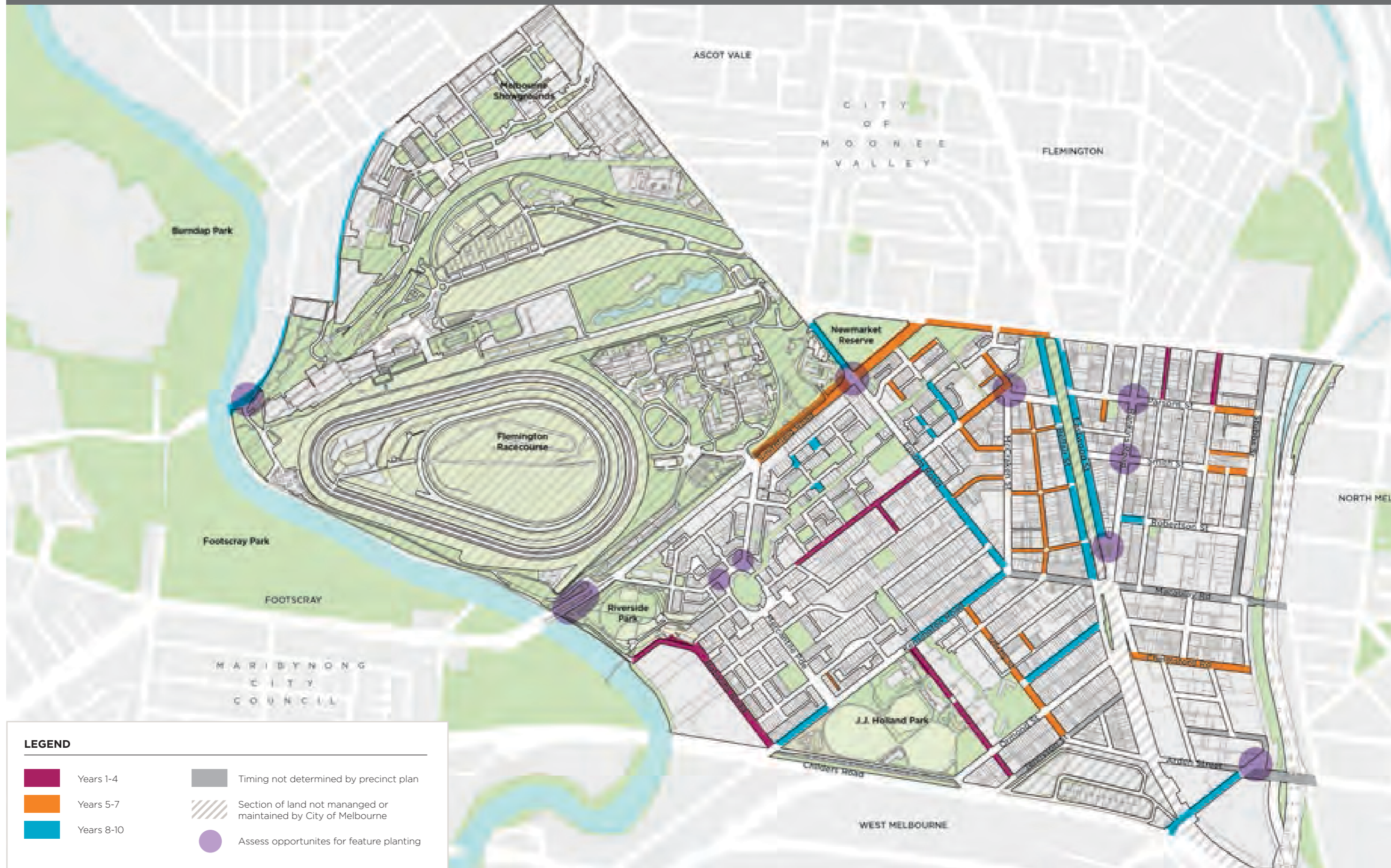
- Review Streetscape objectives
- Review What should change (Map 7)
- Review Planting plans (Map 8, 9 & 10)
- Review species palette



Implement planting

- Produce streetscape design options
- Consult with residents
- Plant

MAP 1: PLANTING PRIORITIES



PRIORITISING TREE PLANTING IN STREETS CONTINUED

Planting in streets presents a variety of challenges, and there are important principles to use in responding to those challenges that will help to meet the Urban Forest Strategy targets. A complete and expanded set of these principles is included in the *Urban Forest Diversity Guidelines* and should be referred to when designing or planting any streetscape; however Kensington specific principles are outlined below.

Planting types and locations: preference large canopy trees

A single large canopy tree provides greater benefits in terms of cooling, rainwater interception and other ecosystem services than multiple small trees totalling the same canopy extent. Kensington's narrow streets mean that the large canopy trees must generally be planted in the footpath or roadway.

A limited number of streets have nature strips or centre medians that provide a planting opportunity. Given the limited sites available for tree planting, the largest tree appropriate for the site should be selected to maximise the canopy and shade potential.

Kerb outstands should be considered as opportunities to plant species drawn from a wider palette that are unique to that location or intersection and provide visual interest. Roundabouts and closed road ends should be considered as opportunities to plant large canopy trees and create landmark feature landscapes with supporting understorey planting.

Low voltage overhead wires are present throughout Kensington streets in the older residential areas. High voltage wires are also present on many streets and limit the potential for large, natural

canopy growth. Where medians or nature strips exist for large canopy tree planting, select small to medium trees on the side with overhead constraints. In streets where footpath trees provide the only canopy, select medium to large trees that can be effectively pruned around power lines. Always consider opportunities to bundle or underground power lines. A major underground substation restricts planting in Lloyd Street.

Creative strategies for greening these streets, including the potential contribution of the private realm, will need to be considered.

Outcomes that improve the pedestrian environment should always be prioritised. Opportunities for understorey planting with a biodiversity and pedestrian environment objective should be considered where possible.



Preferring large canopy trees for shading and cooling in streets



Tree trimmed under powerlines in Kensington



Kerb outstands should be considered as opportunities to plant species drawn from a wider palette that are unique to that location or intersection and provide visual interest.

GUIDING PRINCIPLES AND CONSIDERATIONS FOR TREE PLANTING

Planting Patterns and Species Choice: Adopt planting patterns that increase diversity

The convention of planting avenues, or consistent lines of a single species, can limit species diversity. However, avenue plantings are important to local character in many streets and open spaces in Melbourne. To balance these two conflicting pressures, it is important to identify ways to minimise the extent of homogenous avenue planting while maintaining a strong design outcome. The following strategies can be used:

- Establish a hierarchy of streets and paths most important to plant with continuous avenues and limit use elsewhere;
- Identify breaks in avenues at logical points along the length of streets, where species may change;
- Use asymmetrical treatments along some streets. For example, local streets where there are power lines on one side only so large trees may fit on one side and small ones on the other);

- Use mixed avenues of two or more species of similar form and character where appropriate;
- Use informal mixes of species where acceptable. For example, perimeters of parks and gardens, streets where most trees are senescent but important established specimens remain, streets where vegetation from private gardens occasionally overhangs into street space.

Use a balance of proven and trial species to increase diversity but limit the use of trial species in streets to less than 10% of the precinct tree population.

Select 'shorter-lived' (-50 years) species in approximately 10% of each sub-precinct to better balance future age distribution across Kensington. These selections should be focused in areas or planting positions where losses will have a lower impact on shade provision. For example, where there are large, long-lived trees in medians or on one side of the street, or in landmark/biodiversity plantings).

Soil and moisture conditions: Improve soil moisture conditions and select species appropriate to the site conditions

Always consider opportunities to undertake soil volume improvement in planting areas and to increase permeability or water infiltration where needed. Assessment for these interventions is particularly necessary at sites where trees are being replaced because they failed to thrive. Interventions to consider include:

- Systematic trenching in landscaped areas, in medians, between tree plots and centre of road parking zones
- Structural soils below permeable paving
- Increasing soil volume
- WSUD tree pits or infiltration pits
- Stormwater harvesting

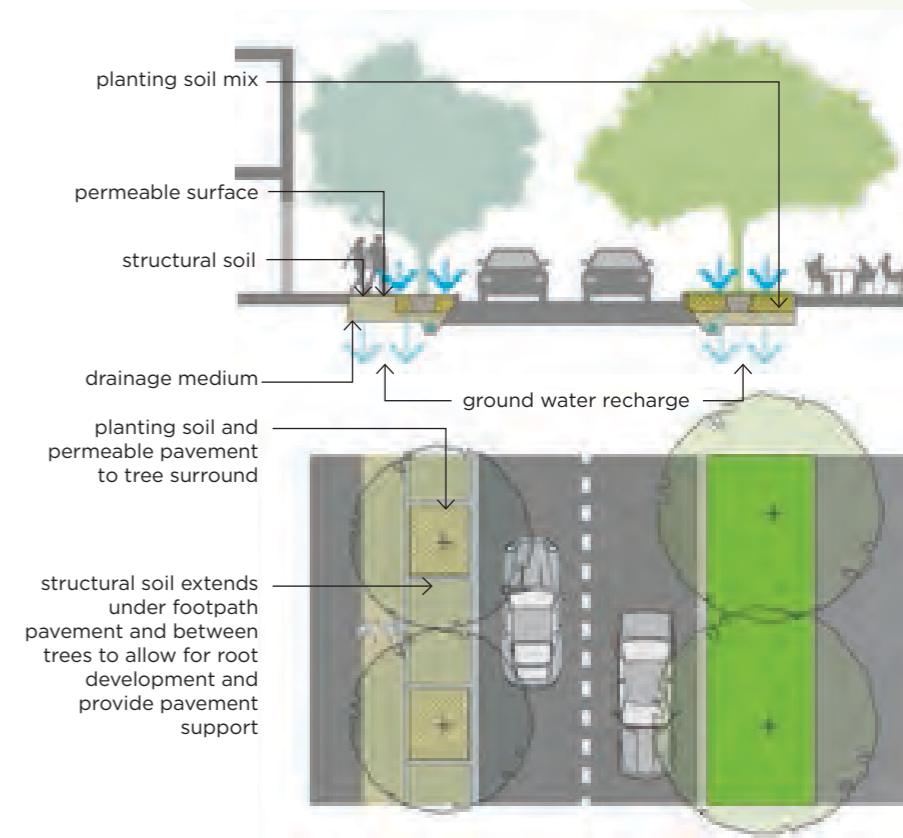
In the higher elevation portions of Kensington the native soils are heavy textured clay soils derived from deeply weathered basalt.

Lower lying areas that were the flood plains of the Maribyrnong River and Moonee Ponds Creek would have been medium to heavy textured clay with some sand derived from alluvial deposits. Because of surface modification actual soils are highly variable with fill and Coode Island Silt. Periodic flooding occurs in some locations and the water table is likely to be close to the surface in lower lying areas. Species selection, particularly in areas undergoing urban renewal will need to consider the potential for waterlogging.

The Maribyrnong River forms the western edge of the Kensington precinct and Moonee Ponds Creek forms the eastern. The surrounding parks, streetscape and private realm vegetation can play a role in supporting the ecology of the river corridor. Species selection to provide habitat can be incorporated with initiatives for capturing water and runoff for filtration prior to entering the waterway. A similar approach would be of benefit to Moonee Ponds Creek if it is not enclosed by proposed road developments.



Water infiltration, permeable paving and structural soil or cells provide opportunities to grow larger, healthier trees in paved areas.



Improving below ground growing conditions for trees in streets



Existing biodiversity corridor along stockyard route

GUIDING PRINCIPLES AND CONSIDERATIONS FOR TREE PLANTING **CONTINUED**

Map 2: Key planting constraints

There are a range of constraining factors that influence opportunities for planting in Kensington. Map 2 illustrates some of the complex site conditions as well as underground and over head infrastructure which need to be considered when looking at opportunities for planting.

This map indicates locations where overhead constraints or tramlines have been identified and may impact tree selection and the maximum canopy cover that can be achieved. Low voltage overhead wires associated with electricity distribution and tram lines have minimum clearance distances from vegetation that must be maintained. When selecting which species to plant beneath overhead wires, ensure that the species chosen can be formatively pruned to create a pleasing canopy shape, or is at a mature height that it is a safe distance from overhead wires.

(refer Map 2 on page 30)



Small tree under powerlines



Tree trimmed under powerlines

Map 3 & 4: Planting Opportunities

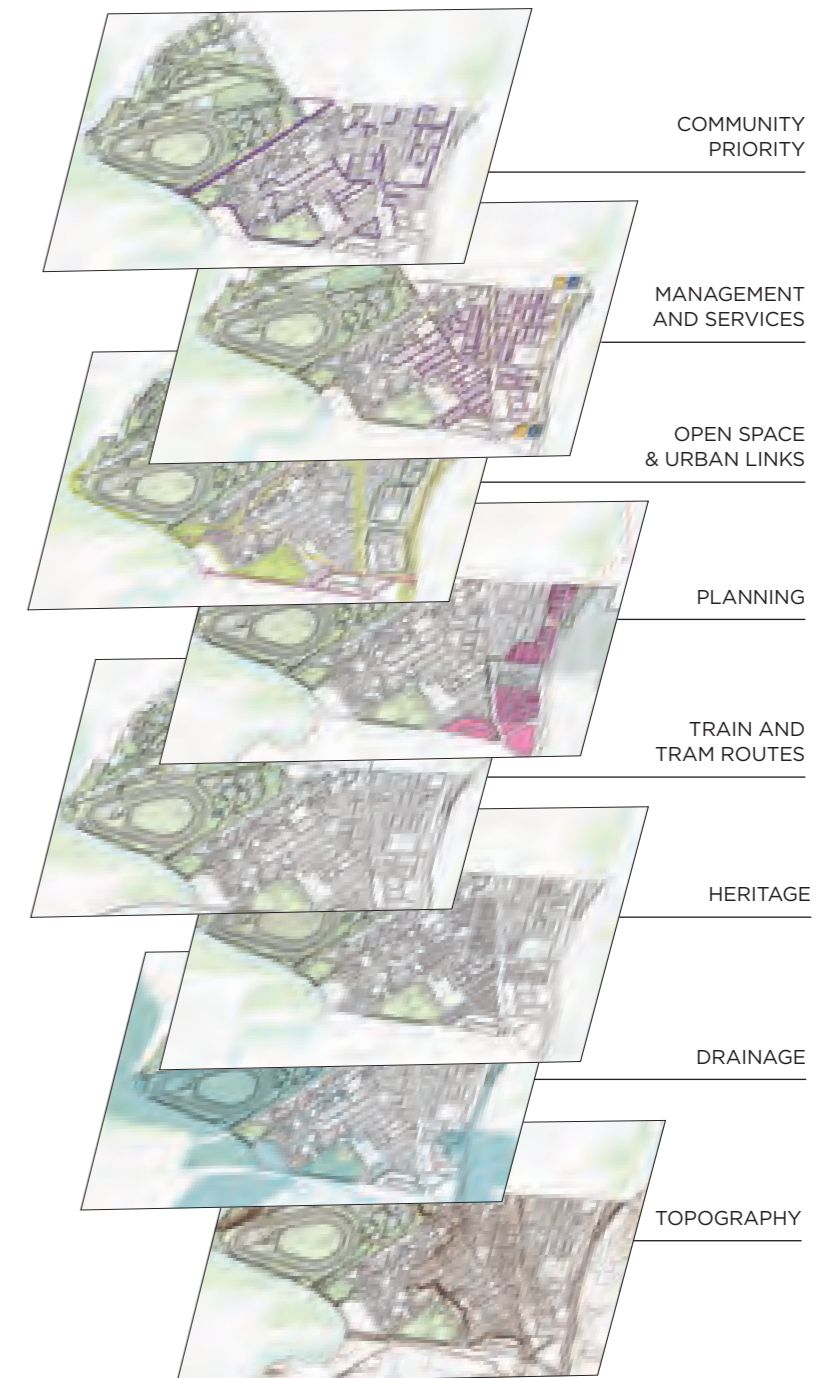
These maps show some of the many layers of information that influence the opportunities and objectives for tree planting in Kensington Streets.

Map 3 illustrates the Natural and Open Space Context which considers the geographic aspects of the precinct as well as open space opportunities.

Map 4 identifies the Strategic Context for Kensington. This plan combines planning and urban design factors, landuse and connectivity.

The combination of all of these factors will influence the design for streets, the varied role of planting in these streets and species selection.

(refer Maps 3 & 4 on pages 32 & 34)



MAP 2: KEY PLANTING CONSTRAINTS



MAP 3: NATURAL AND OPEN SPACE CONTEXT



MAP 4: STRATEGIC CONTEXT



GUIDING PRINCIPLES AND CONSIDERATIONS FOR TREE PLANTING **CONTINUED**

Map 5: Planting Sub-precincts

The following sub precincts reflect the varied characteristics of Kensington. These include key differences in landuse, urban character, and landform to which planting will respond.

Central heritage precinct

A significant portion of Kensington is occupied by the heritage cottages that sit on the high ground in its centre. Despite the small grain of the housing lots, the front gardens are an important part of Kensington's character. Species selection should enhance the scale and character of these streetscapes.

Arden Macaulay & Moonee Ponds Creek precinct

This mixed use residential and industrial area sits to the west side of the Moonee Ponds creek on the river flats. Like the areas directly east of the creek, the Arden Macaulay precinct will be subject to greater density of development to accommodate the growth of the city's population.

Stockman's route precinct

A key part of Kensington's heritage, the Stockman's Precinct occupies the former stock yards and the connecting route that connected from the west. Some of this heritage has been retained in the development of this area for housing with pockets of vegetation, fenced parkland and pathways. The small open spaces that link through this precinct create distinct landscapes. Further opportunities should be explored for further greening of the narrow streets and laneways through this precinct.

Kensington station & retail precinct

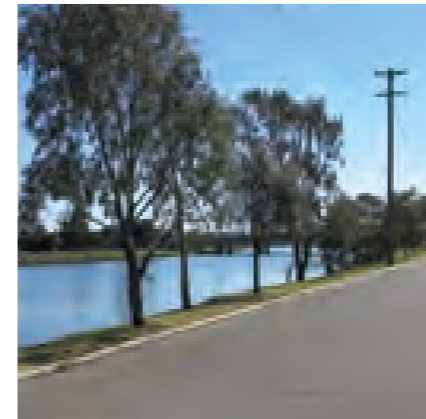
The Macaulay Road village and the station sit at the heart of Kensington and the railway corridor creates the sense of a wide avenue framed by plane trees. Extending out from Macaulay road are a series of streets with avenue plantings that are central to the character of this area.

Maribyrnong River & recreation precinct

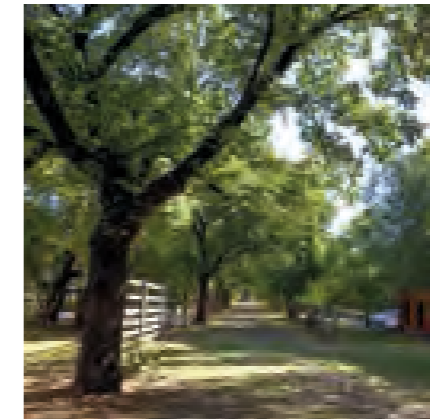
On the southern edge of Kensington, this precinct extends from the natural embankment along the north edge, down to the Maribyrnong River and the railway line. A series of smaller open spaces provide connections between the river corridor and Holland Park which provides a large recreation open space. An escarpment runs along the north edge of this precinct providing views across to the river valley. These natural features should be enhanced to provide biodiversity links between open spaces.

Flemington Racecourse precinct

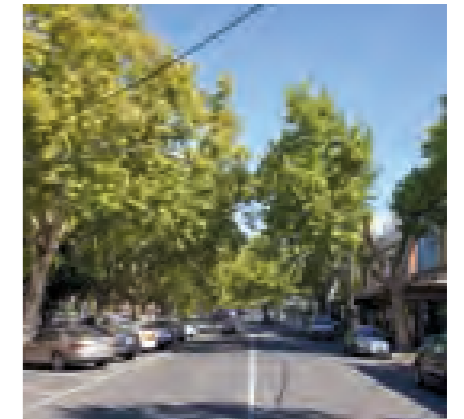
This large precinct is bounded by Smithfield Road, Epsom Road and the Maribyrnong River, and extends to the north to include the Show Grounds. Whilst much of this area is managed by others, this scale of this precinct plays means it can play an important role in the ecological function of the river corridor.



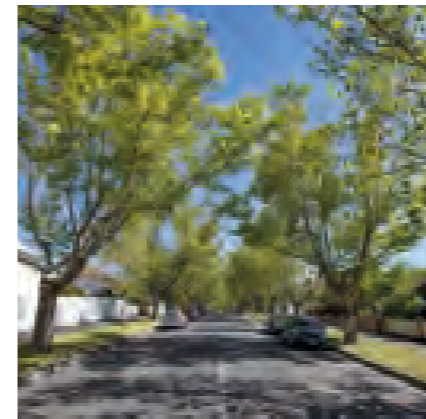
Flemington Racecourse precinct



Stock route precinct: The Stock route forms the central open space to this residential development



Kensington station and retail precinct: Bellair Street shops opposite Kensington Station



Central heritage precinct: Wolesley Parade Kensington



The creek corridor is central to Arden Macaulay and Moonee Ponds Creek Precinct



Maribyrnong River precinct

MAP 5: PLANTING SUB-PRECINCTS



GUIDING PRINCIPLES AND CONSIDERATIONS FOR TREE PLANTING **CONTINUED**

The following maps identify opportunities for creating diversity in the Urban Forest to increase canopy cover, enhance ecological diversity and manage risk factors.

Map 6: Canopy cover and biodiversity outcomes

Canopy cover

Anticipated canopy cover at maturity is represented as shading in streets on the map. In some streets the maximum canopy cover is limited due to constraints such as tram routes and other infrastructure that limits the opportunities for tree planting. Planting configuration should seek to maximise canopy cover in all cases.

Biodiversity


The waterways, Stock Route, parks and pocket parks, and connecting streets have the potential to be managed more specifically for biodiversity and pedestrian amenity. Connectivity between these areas should be explored to maximise potential for habitat. Opportunities to enhance biodiversity include selecting bird and pollinator attracting species and adding layers of vegetation to provide structural diversity. Other streets may also provide opportunities for understorey planting.

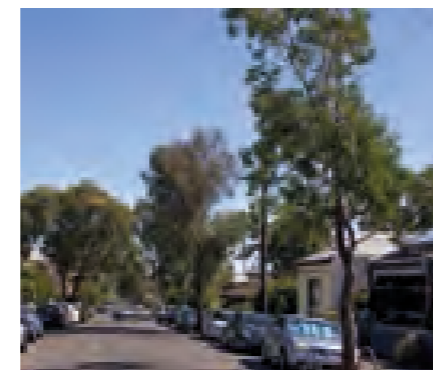
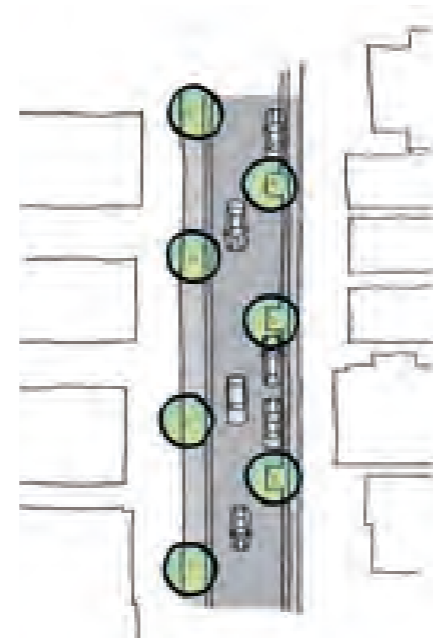
Species choices for understorey planting should factor in light conditions, competition with existing plantings, and maintenance requirements related to irrigation and access. See adjacent images for examples of canopy cover and biodiversity outcomes.


Map 7: What should stay and what should change?

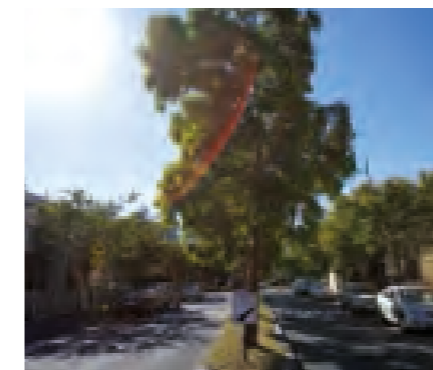
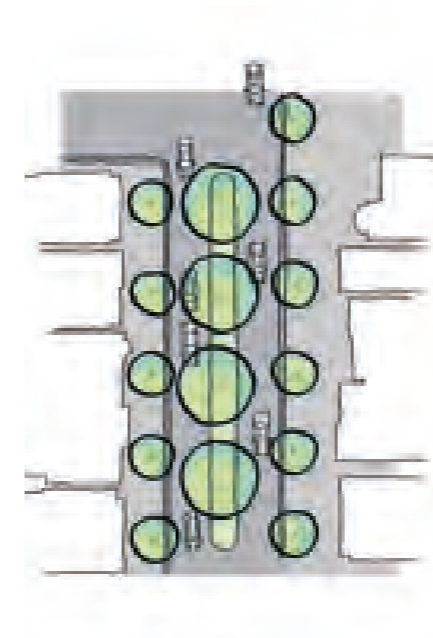
Planes, elms, gums (*Corymbias*), eucalypts and peppercorns are core genera within Kensington's urban forest today. That is not proposed to change; however their dominance will be reduced by using alternatives for new plantings and, in the locations defined on this map, by breaking up spatial continuity. Interrupting spatial continuity is necessary to reduce vulnerability within the urban forest tree population and aids diversity targets by providing an opportunity to change species.


The use of elms will be limited to replacements in locations where they are already planted. Use of species within the Myrtaceae family should be targeted at streets where they can provide connecting corridors between open space for native birds, however it is preferable that different genera and species be planted in segments or as mixed plantings to increase diversity.

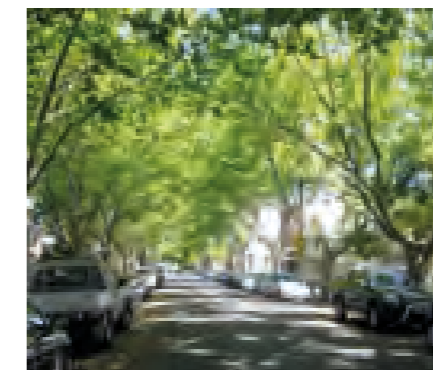
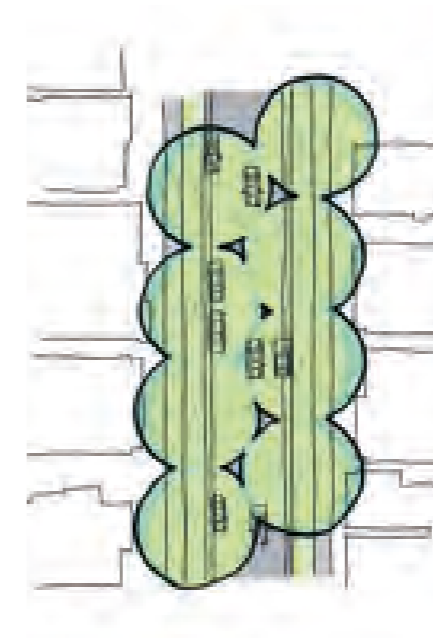
 Minimum canopy cover of 20%



 Minimum canopy cover of 20 - 40%



 Minimum canopy cover of 40%



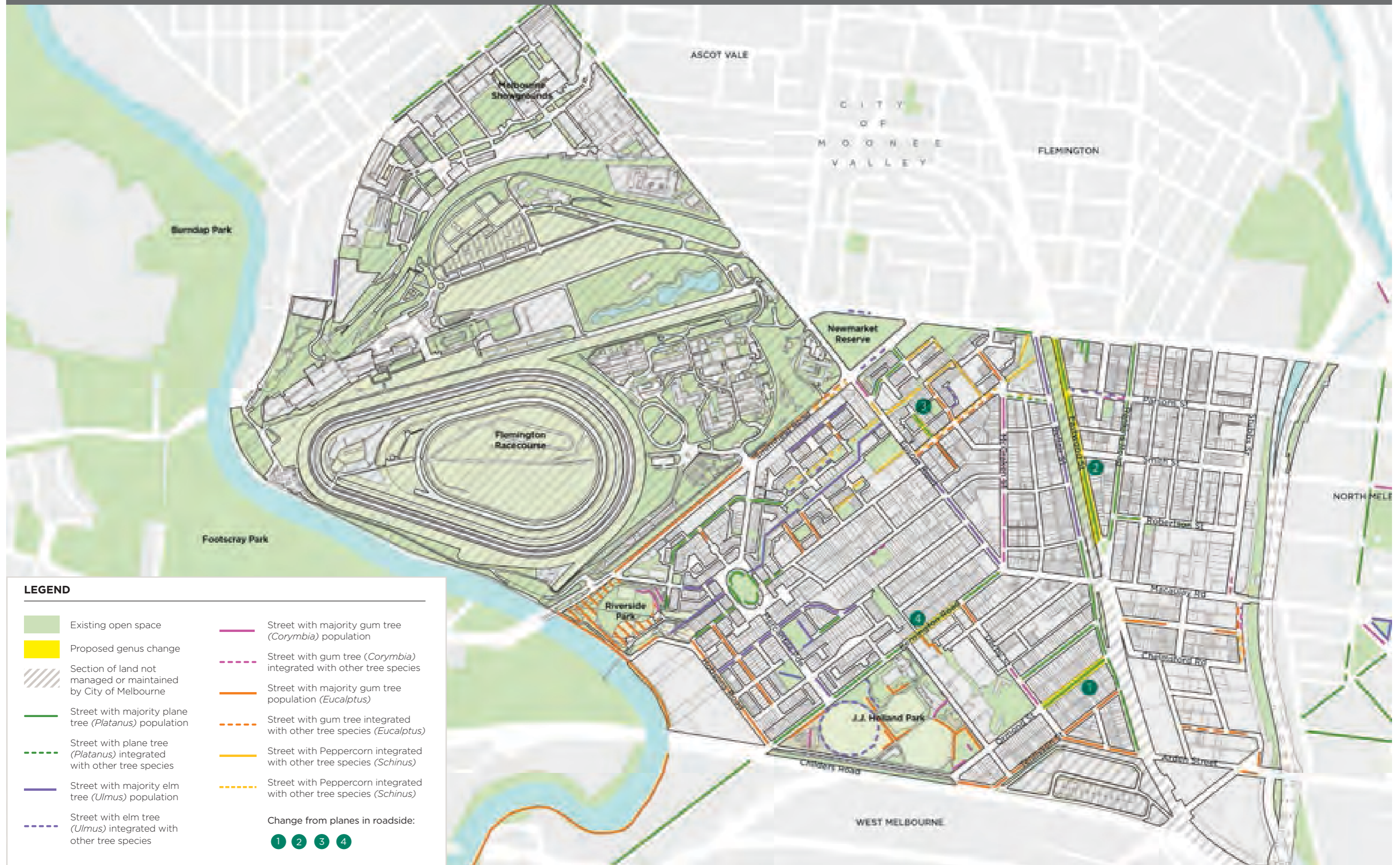
 Biodiversity objective maximise canopy



MAP 6: CANOPY COVER AND BIODIVERSITY OUTCOMES



MAP 7: WHAT SHOULD STAY AND WHAT SHOULD CHANGE?



LEGEND

- Existing open space
 - Proposed genus change
 - Section of land not managed or maintained by City of Melbourne
 - Street with majority plane tree (*Platanus*) population
 - Street with plane tree (*Platanus*) integrated with other tree species
 - Street with majority elm tree (*Ulmus*) population
 - Street with elm tree (*Ulmus*) integrated with other tree species
 - Street with majority gum tree (*Corymbia*) population
 - Street with gum tree (*Corymbia*) integrated with other tree species
 - Street with majority gum tree population (*Eucalyptus*)
 - Street with gum tree integrated with other tree species (*Eucalyptus*)
 - Street with Peppercorn integrated with other tree species (*Schinus*)
 - Street with Peppercorn integrated with other tree species (*Schinus*)
- Change from planes in roadside:
- 1
 - 2
 - 3
 - 4

PLANTING STRATEGIES

The following set of plans specifically identify outcomes for tree planting. They provide the framework for change within each street in the precinct with design outcomes informed by all of the other factors outlined in the previous maps.

Map 8: Long-term planting strategy

This strategy provides the long-term direction for planting in the precinct. The selection of tree species for each street should respond to criteria including optimal size and other characteristics that relate to the street typology and its relationship to the major planting sub-precincts. Values of existing vegetation are also a factor in species selection.

Overarching principles affecting the planting plan include:

- Enhance the character of park perimeter streets through plantings that respond to the character and scale of the park perimeter.
- Maximise the potential for tree canopy where planting opportunities are limited.
- Enhance the connections of the streetscape to the ecology of the Moonee Ponds and Maribryngong river corridors.
- Create streets that provide connections between open spaces.
- Incorporate diversity, colour and seasonal change into species selections.

Map 9: 10-year planting plan

This plan provides direction on where new and replacement planting is to occur across Kensington. The size and evergreen/deciduous nature of the species to be used is also defined as a solid or dashed line (in the case of replacements this may be different to what is planted in that location currently). Species selection is left somewhat open; however, Map 7 and Map 8 provide guidance on where spatial diversity should be created and where core species should be retained. Streets with opportunities for re-design represent streets where permeability could be improved through interventions such as park expansions or new medians.

Map 10: Guide to Species Change

This map indicates locations along streets where a change in species is logical based on sub-precinct boundaries, topographic factors or objectives defined for streets within this plan. The colours do not indicate species distribution or specific species. Rather, they represent points of species change, with similar colours along a street indicating use of a range of species that will achieve a consistent character for that street.

Select or match species to form, colour and seasonal themes for streets to unify character even where species are varied. Introduce greater diversity in kerb outstands, roundabouts and road ends. In streets use a single species for multiple segments then change between sub-precinct boundaries, or consider the use of two alternating species of similar form, scale and colour. In narrow streets and where there are power lines on one side only use asymmetrical plantings of different species on each side of the street. When appropriate, use informal mixes of species along perimeters of parks and gardens or where vegetation from private gardens overhangs the streets.

These illustrations provide an example of how these three aspects would apply in a particular street.



Long term planting plan: This strategy provides the long-term direction for planting in the precinct

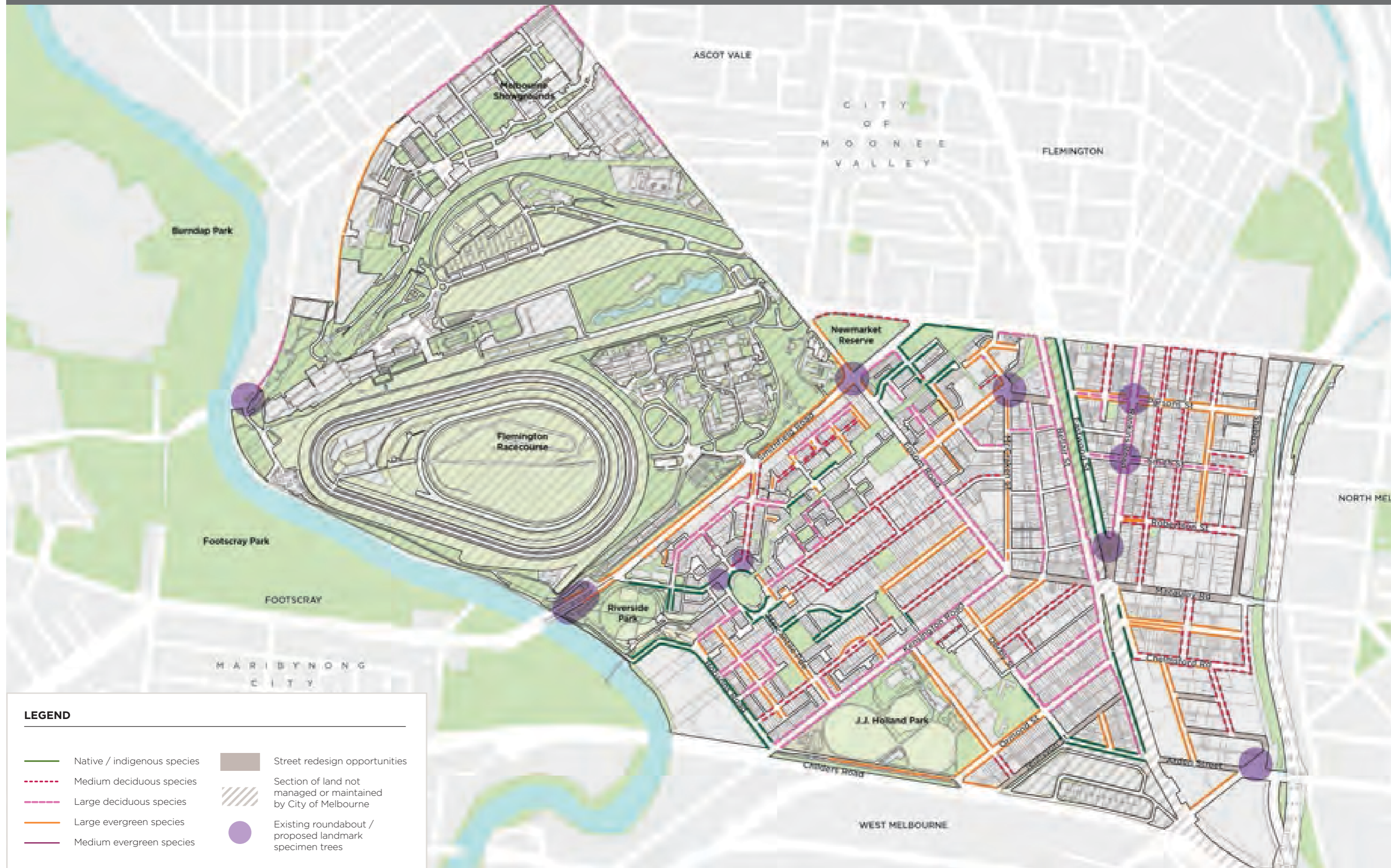


10-year planting plan: New and replacement planting is to occur across Kensington



Guide to species change: This map indicates locations along streets where a change in species is logical based on sub-precinct boundaries, topographic factors or objectives defined for streets within this plan.




MAP 8: LONG TERM PLANTING PLAN



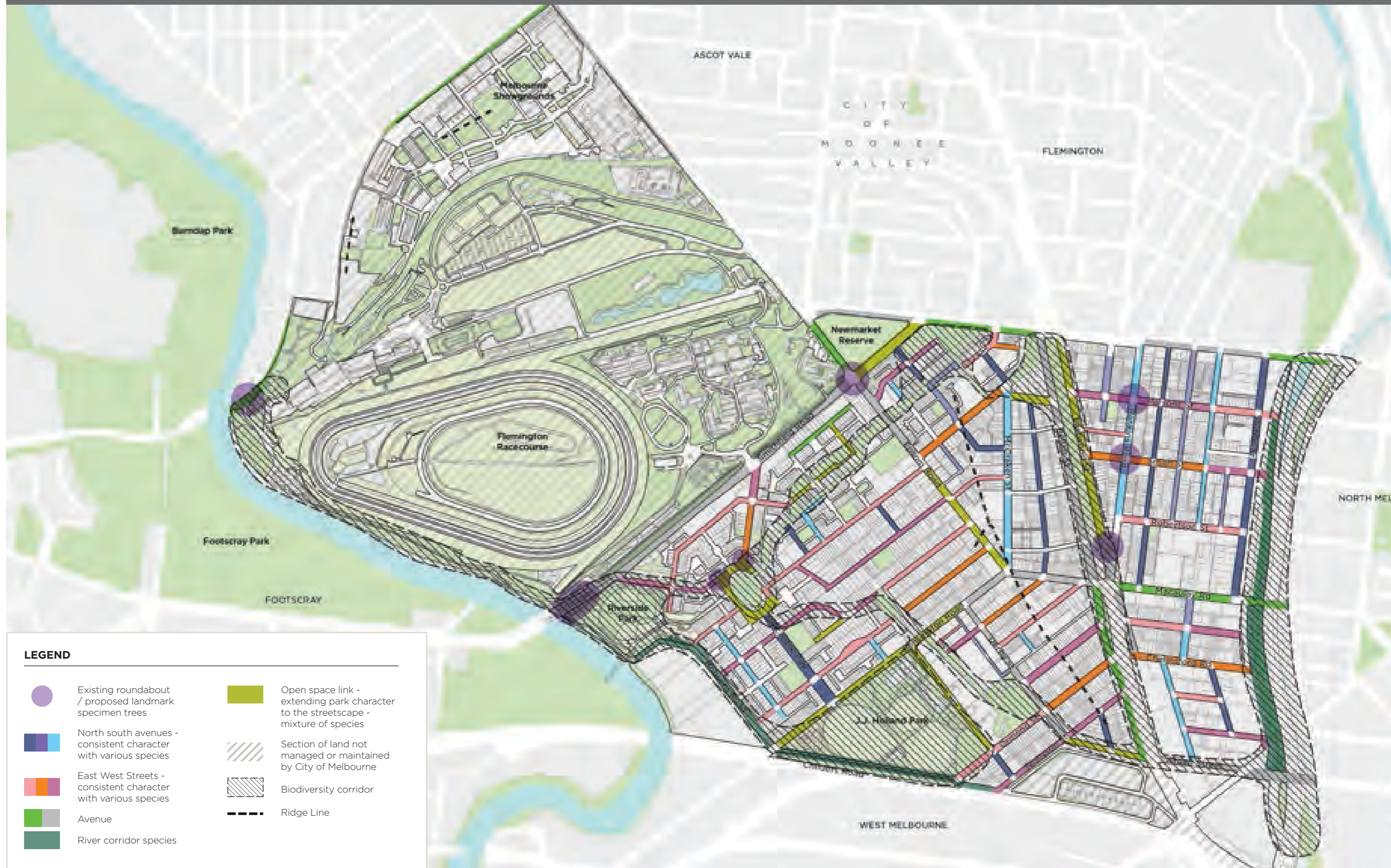
MAP 9: 10-YEAR PLANTING PLAN



LEGEND

- | | | | | | | |
|---|--|---|---|---|---|----------------------|
|  | Existing open space | REPLACEMENT |  | Large evergreen tree | | |
|  | Street re-design opportunities |  | Large deciduous tree |  | Medium - small deciduous tree | |
|  | Section of land not managed or maintained by City of Melbourne | NEW |  | Large evergreen tree |  | Large deciduous tree |
|  | Existing roundabout / proposed landmark specimen trees |  | Medium - small deciduous tree |  | Medium - small deciduous tree | |
| EXISTING | |  | Large evergreen tree |  | Large deciduous tree | |
|  | |  | Large deciduous tree |  | Medium - small deciduous tree | |
|  | | | Medium - small deciduous tree | | | |

MAP 10: GUIDE TO SPECIES CHANGE



SPECIES PALETTE

The following species are provided for guidance only and do not preclude the use of other trees that are consistent with the character of Kensington, Guiding Principles and Planting Plan. Elms and planes are key genera within Kensington, forming an important part of the character of its urban forest. While this character will be maintained,

species from many different genera will also be planted to increase diversity and reduce vulnerability within Kensington's urban forest population. Feature trees refer to trees that might be used in roundabouts, kerb outstands, road ends or that could add structure for biodiversity enhancement in locations with adequate space.

Productive trees or edible landscapes may be considered in locations such as medians or feature landscapes where they conform to City of Melbourne policy and the community actively provide support for the project.

Core Kensington Trees (Limited New Plantings)

Platanus spp., Plane
Ulmus sp., Elm
Corymbia maculata, Spotted gum

Large Trees for Streets

Evergreen

Cinnamomum camphora, Camphor laurel
Ficus rubiginosa, Rusty fig
Ficus platypoda, Rock fig
Flindersia australis, Crow's ash
Eucalyptus polyanthemus, Red box
Eucalyptus melliodora, Yellow box
Eucalyptus sideroxylon, Red ironbark

Deciduous

Celtis australis, Hackberry
Fraxinus pennsylvanica, Green ash
Quercus spp., Oak
Tillia tomentosa, Silver linden
Tipuana tipu (trial), Rosewood
Toona ciliata (trial), Australian red cedar

Medium to Small Trees for Streets

Evergreen

Acacia pendula, Weeping myall
Banksia integrifolia, Coast banksia
Brachychiton roseus, Jerilderie flame tree
Buckinghamia celsissima, Ivory curl tree
Callistemon viminalis, Weeping bottle brush
Catalpa spp., Catalpa
Casuarina cunninghamiana, River sheoak
Cupaniopsis anachardioides, Tuckeroo
Eucalyptus pulchella, White peppermint
Hymenosporum flavum, Native frangipani
Jacaranda mimosifolia, Jacaranda
Lophostemon confertus, Brush box
Stenocarpus sinuatus, Firewheel tree
Tristaniopsis laurina, Kanooka
Waterhousea floribunda, Weeping lilly pilly

Deciduous

Cercis siliquastrum, Judas tree
Gleditsia tricanthos, Honey locust
Koelrueteria bipinnata, Chinese flame tree
Pistacia chinensis, Chinese pistachio
Sapium sebiferum, Chinese tallow tree

Large Feature Trees

Evergreen

Araucaria spp.
Corymbia citriodora, Lemon scented gum
Eucalyptus camaldulensis, River red gum
Ficus macrophylla, Moreton Bay Fig
Flindersia maculosa, Leopardwood
Podocarpus elatus, Plum pine
Pinus sp., pine
Quercus agrifolia, Coast live oak
Schinus molle, Peppercorn

Deciduous

Carya illinoensis, Pecan
Catalpa spp., Catalpa
Erythrina spp., Coral tree
Ginkgo biloba, Ginkgo
Lithocarpus densiflorus, Tanoak
Ceiba speciosa, Silk floss tree

Medium to Small Feature Trees

Allocasuarina torulosa, Rose sheoak
Angophora hispida, Dwarf apple
Brachychiton spp.
Callitris glaucophylla, White cypress pine
Calodendrum capense, Cape chestnut
Corymbia eximia, Yellow bloodwood
Geijera parviflora, Wilga
Hakea francisiana, Grass leaf hakea

FREQUENTLY ASKED QUESTIONS

Where can I find out more information about Melbourne's urban forest?

A wide range of information about Melbourne's urban forest can be explored at melbourne.vic.gov.au/urbanforest

What can I do to contribute to Melbourne's urban forest?

If you have a garden or room for a tree, you can contribute by planting in your own yard. If you own or manage a building, development, or institution you can contribute by planting in the grounds or by greening walls, roofs or balconies.

You can also contribute by staying informed about the urban forest and by talking to others about the benefits of having trees in our urban areas. The City of Melbourne will continue to provide opportunities for the community to volunteer their time and ideas to help achieve urban forest objectives. If you would like to be added to our mailing list, or have an urban forest idea you'd like to share, please email your details to urbanforest@melbourne.vic.gov.au

I have seen a sick or damaged tree, or an empty tree plot. How can I tell City of Melbourne about it?

Please email the location and a description of the issue to urbanforest@melbourne.vic.gov.au.

Can I plant a tree in a public space?

Trees can only be planted on public land with council authorisation or through a sanctioned public planting activity. However, if there is a location where you would like to see a tree planted then you can send a request for tree planting to urbanforest@melbourne.vic.gov.au.

Can I make a garden in a public space?

Please refer to the City of Melbourne's Street Garden Guidelines, which you can find at melbourne.vic.gov.au

How to contact us

Online: melbourne.vic.gov.au

In person:

Melbourne Town Hall - Administration Building
120 Swanston Street, Melbourne
7.30am to 5pm, Monday to Friday
(Public holidays excluded)

Telephone: 03 9658 9658

7.30am to 6pm, Monday to Friday
(Public holidays excluded)

In writing:

City of Melbourne
GPO Box 1603
Melbourne VIC 3001
Australia

Fax: 03 9654 4854

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03 9280 0720	Italiano
03 9280 0721	國語
03 9280 0722	Soomaali
03 9280 0723	Español
03 9280 0724	Türkçe
03 9280 0725	Việt Ngữ
03 9280 0726	All other languages

National Relay Service: If you are deaf, hearing impaired or speech-impaired, call us via the National Relay Service: Teletypewriter (TTY) users phone 1300 555 727 then ask for 03 9658 9658
9am to 5pm, Monday to Friday
(Public holidays excluded)

melbourne.vic.gov.au



CITY OF MELBOURNE