

**Report to the Future Melbourne (Environment) Committee**

Agenda item 6.5

**Urban Forest Precinct Plans 2014 - North & West Melbourne, Kensington and Docklands**

18 November 2014

**Presenter:** Ian Shears, Manager Urban Landscapes

**Purpose and background**

1. The purpose of this report is to seek endorsement of the Urban Forest Precinct Plans for the precincts of North and West Melbourne, Kensington and Docklands.
2. The Urban Forest Strategy identifies that 10 precinct plans be developed in collaboration with the community over three years to spatially guide the implementation of the strategy's key targets which include doubling canopy cover and increasing diversity. The Precinct Plans for Carlton, South Yarra, East Melbourne and Jolimont and the Central City were endorsed by Council in 2013 following extensive stakeholder consultation. The City of Melbourne Parks and Gardens Advisory Committee provided valuable input into the identification of issues to be addressed in the Draft Plans. These plans established the template for plan development in years 2 and 3.
3. Over the past year three Urban Forest Precinct Plans (UFPPs) have been developed collaboratively with the community for the precincts of North and West Melbourne, Kensington and Docklands. (refer Attachments 3 - 5).
4. In 2014-15 the final three plans will be prepared for Parkville, Southbank and Fishermans Bend.

**Key issues**

5. An extensive community engagement process was undertaken from October 2013 to July 2014 to develop the draft UFPPs to seek input from the wider community, agencies and stakeholders. (refer Attachment 2).
6. The Precinct Plans were developed in collaboration with the community and reflect the feedback received during community consultation via the following channels:
  - 6.1. The precinct-based community workshops were attended by 300 people. An estimated additional 200 people were engaged in person through other events.
  - 6.2. The Urban Forest Values Questionnaire was completed by 294 people and indicated that the urban forest was valued for civic, social, cultural heritage, life sustaining and nature reasons. The life sustaining and social value categories were the most important to participants. Trust in Council was also explored and participants had strong trust in the way the urban forest is managed.
  - 6.3. The online forum received 19,847 unique visitors. Documents from the site were downloaded 2559 times.
  - 6.4. The Urban Forest Visual site was developed to make visible City of Melbourne tree data and see workshop information (<http://melbourneurbanforestvisual.com.au/>). The site has received 9226 visits.
7. The community engagement process was well received and garnered positive commentary both online and on the feedback forms.
8. The three draft plans were put out for public comment on Participate Melbourne between 27 June and 15 July. Notification emails were sent to more than 1000 people and a total of seven submissions were received on the drafts.
9. Consultation with external stakeholders (i.e. developer community, distribution companies and large institutional landowners) has been incorporated into the final draft plans.

**Recommendation from management**

- 9.1. That the Future Melbourne Committee endorse the Urban Forest Precinct Plans for the precincts of North & West Melbourne, Kensington and Docklands.

**Attachments:**

1. Supporting Attachment
2. Consultation Report
3. Urban Forest Precinct Plans
4. Urban Forest Precinct Plans
5. Urban Forest Precinct Plans

## Supporting Attachment

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### Legal

1. No direct legal issues arise from the recommendation from management.

### Finance

2. There is an operational budget allocated to the Urban Forest Precinct Plans (UFPPs) which covers costs incurred through the running of community engagement events and preparation of the UFPPs.
3. The rate of implementation of the UFPPs through the Annual Tree Planting and Adaptation Renewal budgets is dependent on the annual budget allocation. Implementation time frames within the UFPPs are based on current budget allocations. This budget is \$3.925 million for the 2014-15 financial year.

### Conflict of interest

4. No member of Council staff, or other person engaged under a contract, involved in advising on or preparing this report has declared a direct or indirect interest in relation to the matter of the report.

### Stakeholder consultation

5. The City of Melbourne Parks and Gardens Advisory Committee has provided valuable input into the identification of issues to be addressed in the UFPPs.
6. Extensive external consultation was undertaken to prepare the drafts in collaboration with the community (refer Attachment 2 for full details of the consultation).
7. A range of methods were employed during the engagement process to ensure that consultation and communications were as wide reaching as possible. This included an online forum, intercept survey, direct stakeholder meetings and four precinct based community meetings.

### Relation to Council policy

8. The UFPPs relate to and are consistent with the following policies and strategies:
  - 8.1. Council Plan 2013-2017 Goal: An Eco-City
  - 8.2. Urban Forest Strategy (2012)
  - 8.3. Open Space Strategy (2012)
  - 8.4. City North Structure Plan (2012)
  - 8.5. Climate Change Adaptation Strategy (2009).
9. Total Watermark; City as a Catchment (2014).

### Environmental sustainability

10. Environmental sustainability issues have been a priority in the development of this report. The implementation of the UFPPs will:
  - 10.1 Increase canopy coverage and vegetation in each precinct toward the City's target of 40 per cent canopy cover by 2040.

- 10.2 Decrease waste water generation, lower air pollution, increase carbon storage and sequestration, reduce energy consumption in summer months and mitigate the urban heat island effect through increased canopy cover.
- 10.3 Will minimise the future maintenance costs while maximising the benefits provided by planting more trees in the city through appropriate species selection, permeable pavement, soil volume improvement and water sensitive urban design initiatives
- 10.4 Provide an array of other environmental sustainability benefits including contributions to biodiversity, shading of surfaces, cooling, human mental and physical health benefits, a connection with nature, and promoting social cohesion.

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# CITY OF MELBOURNE URBAN FOREST

## COMMUNITY ENGAGEMENT 2013-2014

### FINAL REPORT- JUNE 2014

Prepared for the City of Melbourne by the Australian Research Centre for Urban Ecology

Version: 0.99

Date: June 2014

Contact: Dave Kendal, ARCUE

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## EXECUTIVE SUMMARY

This report is the final analysis of data collected during the City of Melbourne Urban Forest Community Engagement workshops and an online survey in 2013-14. It has been developed by the Australian Research Centre for Urban Ecology in consultation with the City of Melbourne. It is designed to assist the City of Melbourne develop an urban forest precinct plan guiding future tree plantings.

Three exercises were conducted that generated the data presented in this report. The first exercise was a questionnaire asking participants how the important certain values of the urban forest are to them (i.e. social, heritage, nature), and how much they trusted the city of Melbourne to manage the urban forest. The second was a mapping exercise asking participants to place coloured stickers on maps of the precincts to identify areas that they valued for different reasons (i.e. natural, social, heritage) and areas where there are opportunities to plant more trees. The third was for the workshop participants to describe their desired character of the future urban forest they would like to see.

The results from the questionnaire show that the public strongly values the Life Sustaining (e.g. shade, pollution reduction), Social (e.g. places to interact with others), Natural (e.g. habitat for wildlife), Civic (e.g. contributing to Melbourne's identity) and Heritage (e.g. cultural history) qualities of the urban forest. The strength of these values varied from place to place. For example, participants at the Kensington workshop valued the Social and Life Sustaining qualities of the forest more than other respondents, online participants valued the Heritage qualities of the urban forest less, and Docklands participants valued the Civic qualities of the forest more. Participants were clearly able to identify where these values exist in the current urban forest. The opportunities for new tree planting expressed a range of values e.g. along water courses (areas of Life Sustaining and Natural values), commercial precincts (areas with strong Social and Life Sustaining values) and sport fields, parks and trails (areas of high Social, Natural and Life Sustaining values)

Participants had very high levels of trust in the way the City of Melbourne is managing the urban forest and consulting the community. Trust was strongest for participants who valued the Life Sustaining qualities of the urban forest, and weakest for participants who valued the Natural qualities of the urban forest. This reflects the emphasis on ecosystem services of the current Urban Forest Strategy and highlights an opportunity for increasing trust through the upcoming Biodiversity strategy and associated events. Another opportunity is to continue to improve pathways for the community to provide input into decision-making around the urban forest, particularly for Docklands participants.

The visions for the future of the urban forest expressed by workshop participants are largely consistent with the vision portrayed by Council in the Urban Forest Strategy. There was a strong emphasis on maintaining and increasing the valued qualities of the urban forest identified in the questionnaire. In particular, there were strong themes of ecosystem service provision (e.g. shade), aesthetics (e.g. colour), diversity of plantings, and native trees/habitat for wildlife.

## INTRODUCTION

This report is the final analysis of data collected during the City of Melbourne Urban Forest Community Engagement workshops held in 2013-14. It includes data from the North Melbourne (including West Melbourne), Docklands, and Kensington Precinct workshops held between October 2013 to March 2014, and data collected from the online survey distributed via the City of Melbourne website.

Two exercises were conducted in the workshops to help participants explore how they value the urban forest in their precinct in different ways. The first exercise was a psychometric questionnaire that asked how important different things about the urban forest (e.g. cooling, habitat for birds, beauty) were to the participant. The second was a mapping exercise, where participants were asked to place different coloured sticker dots representing different kinds of values (e.g. heritage, natural, social) on maps of their precincts. Participants were also asked to place stickers where there were opportunities for more tree planting.

### **Which values do the questionnaire and mapping exercise measure?**

The questionnaire and mapping exercises were developed using social psychology concepts of value, which explore what is important to people. For example, previous research in rural forestry has identified that people value forests for intrinsic reasons, for their goods (such as timber), for aesthetics (e.g. scenic beauty) and for spiritual reasons. In social psychology, these different kinds of value are measured independently. This is different than when value is measured in economics, where the different ways that people value something are converted into a single unit of measure (usually money).

The engagement exercises measured 'valued attributes' of the urban forest. Valued attributes are aspects of the urban forests that are important to people (e.g. biodiversity, providing shade, attracting tourists, opportunities for recreation) and appear regularly in policy documents. Valued attributes were the focus of these exercises because they are often used to judge management actions and management objective often seek to enhance valued attributes. These valued attributes were drawn from the City of Melbourne's Urban Forest Strategy and existing literature on urban forests and natural areas.

## VALUE QUESTIONNAIRE

### Urban Forest Values

The final value questionnaire consisted of 21 items, where people were asked how important particular aspects of the urban forest were to them on a 7 point scale. These 21 items were statistically selected from an initial list of 33 items that were used in the North Melbourne precinct workshop and an initial online survey (n=146) (see Appendix 1 for details).

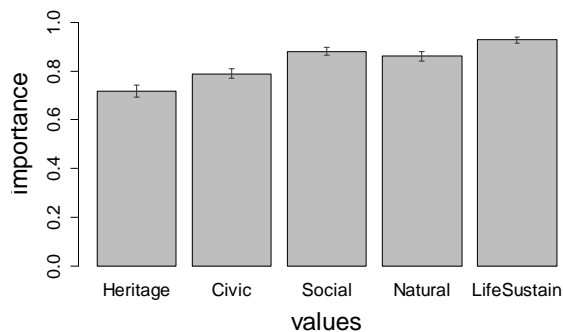
Statistical analysis was then used to identify value categories from the final 21 items based on all precinct workshops and online responses (n=294, see Appendix 2 for details). This analysis groups value items that people tend to respond to in the same way, and identified five value categories that people have for Melbourne’s Urban Forest: civic, natural, social, cultural/heritage and life sustaining (Table 1).

**Table 1 – Value categories identified through a factor analysis of value questionnaire responses**

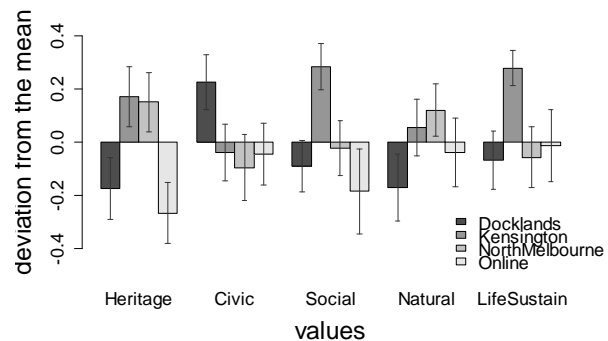
Value category	Example questions
Civic	Making the city more welcoming Marketing the city
Social	An place that is accessible to everybody Improving community cohesion
Cultural Heritage	Reflecting human history and stories A place to experience Melbourne’s history
Life Sustaining	Providing shade Cooling streets and buildings
Natural	A place for many kinds of animals to be Habitat for native plants and animals

Participants indicated that all value categories were very important for the urban forest (Figure 1). The Life Sustaining and Social categories were the most important to participants, and the Cultural/Heritage category (while still important) was slightly less important than other categories.

There was some variation in the importance of each value category between precincts (Figure 2). Participants from the Docklands workshop stand out as having the strongest Civic values for the urban forest and having the weakest Natural values, whilst participants at the Kensington workshop stand out as having the strongest Social and Life Sustaining values. Online respondents had lower Heritage and Social values.



**Figure 1 – The importance of each value category for all participants**



**Figure 2- Variation in the importance for each value category across precincts**

## Trust in management

The final survey also included 7 trust in management questions (Table 2). These related to both trust in Council’s management of the urban forest, and trust in Council’s consultation processes.

Table 2 – Trust in management questions used in the survey

Trust questions	Group
I trust that the Council will effectively plan and manage urban forests	Manage
Council is managing the urban forest effectively	Manage
The Council departments responsible for urban forest management can be trusted to do the right thing	Manage
The community has enough input into Council decision making around the urban forest	Consult
Council is genuine in its efforts to deal with issues around the urban forest	Consult
Council values local input and local knowledge when it makes decisions about the urban forest	Consult
Council makes it easy for the community to get involved in decision-making about the urban forest	Consult

Participants had consistently strong trust in the way the urban forest is managed, and the way the community is consulted by Council (Figure 3). Participants were slightly less in agreement that the community had enough Input into urban forest decision making, particularly those at the Docklands workshop (Figure 4). Online respondents found it easier to get involved in decision-making (Figure 4).

There were some clear relationships between value categories and participant’s trust in management of the urban forest (Figure 4). People who valued the Life Sustaining properties of the urban forest tended to have higher levels of trust in management and consultation. People who valued the Social aspects of the urban forest had higher levels of trust in consultation processes, and people who valued the Civic aspects of the urban forest had higher levels of trust in management. However, people who had valued the Natural properties of the urban forest tended to have lower levels of trust in management.

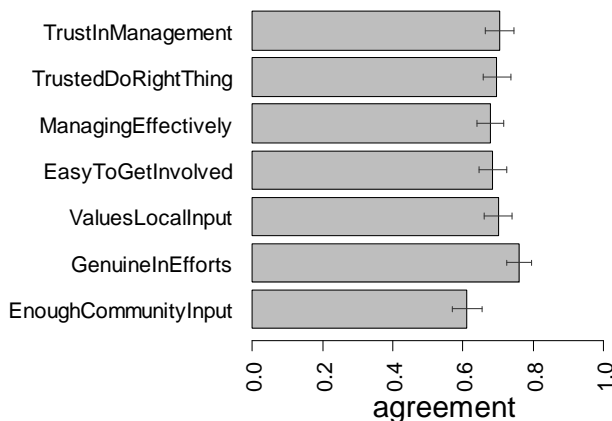


Figure 3 – Trust in management and community consultation



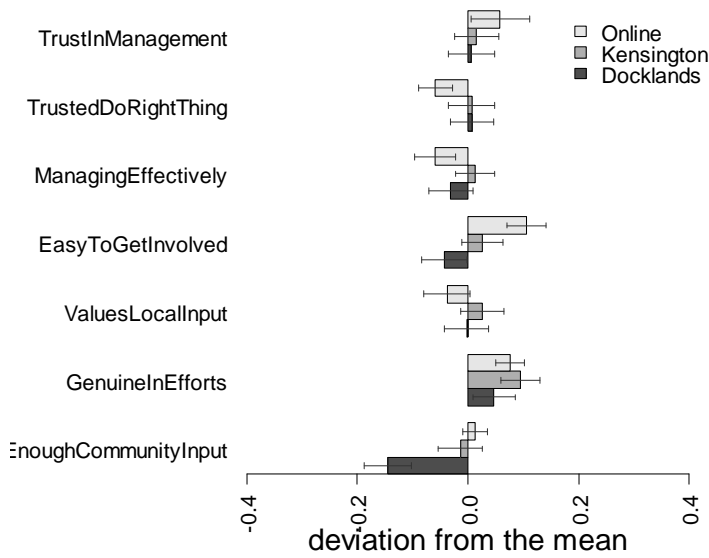


Figure 4 – Variation in trust in management across different precincts

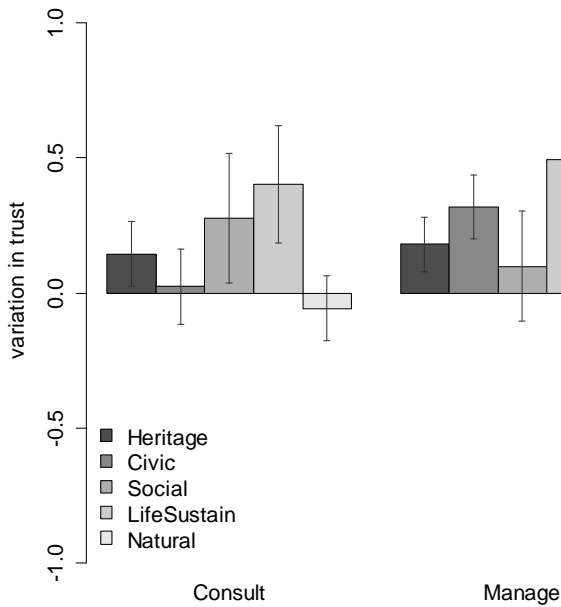


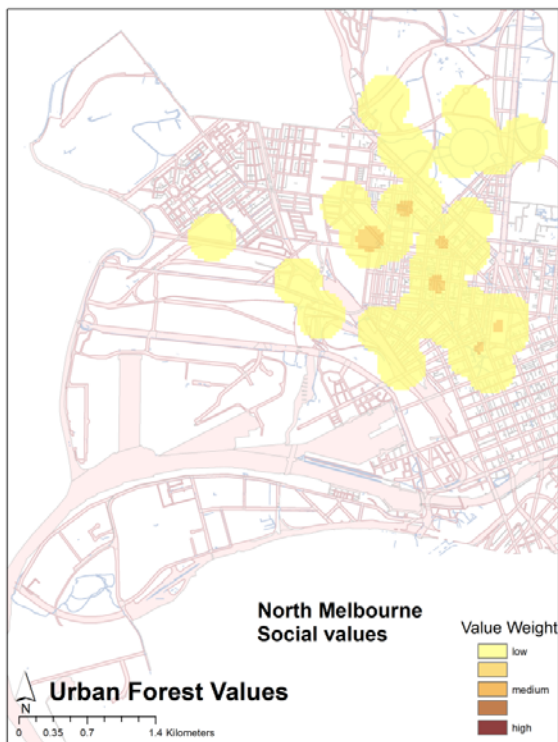
Figure 5 – Influence of value categories on average trust in management

## VALUE MAPS

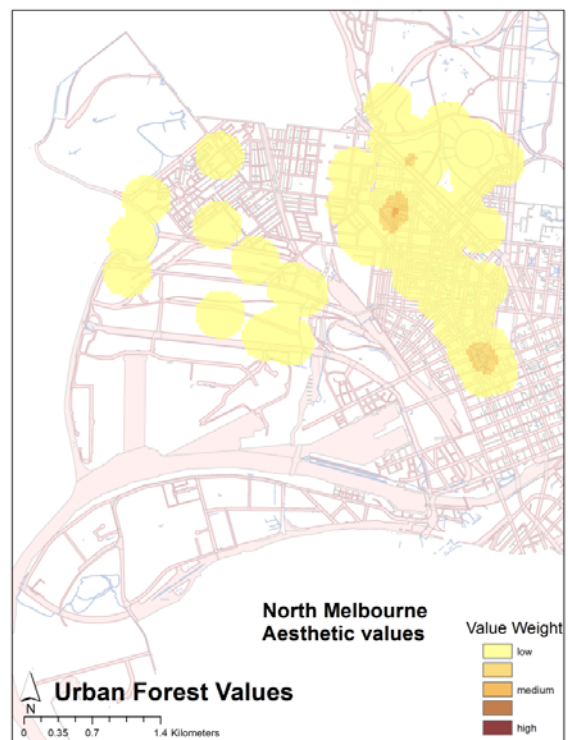
Participants were asked to place stickers representing one of five values (Social, Natural, Cultural/Heritage, Civic and Life Sustaining) on maps of the Docklands, Kensington and North Melbourne precincts (Note: At the North Melbourne Precinct workshop participants were asked about Aesthetic values rather than Civic values. After the preliminary analysis of the value questionnaire, the Aesthetic value category was dropped from the exercise and the Civic value category was added). The points were then entered into a GIS system and a density map generated for each value using the Kernel Density function in ArcGIS 10.1.

### North Melbourne

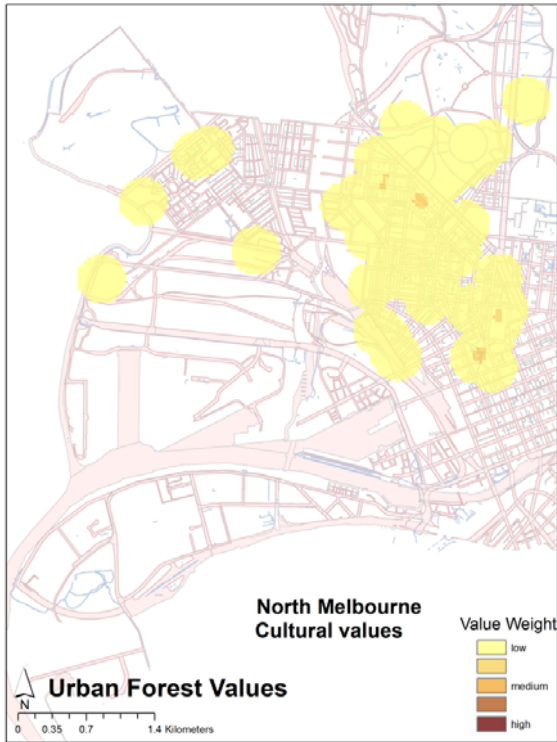
The value maps from the North Melbourne workshop show some interesting differences. Social values were located around sporting facilities and commercial precincts. Aesthetic values were located most strongly around the corner of Dryburgh and Canning St, and in Flagstaff gardens. Cultural values were located in both residential streetscapes and parks. However Life Sustaining values were mostly located in parks, including both natural (e.g. Royal Park) and formal (e.g. Flagstaff Gardens) parks and sporting ovals. Natural values were located in Royal Park, and around small areas of treed open space in residential areas.



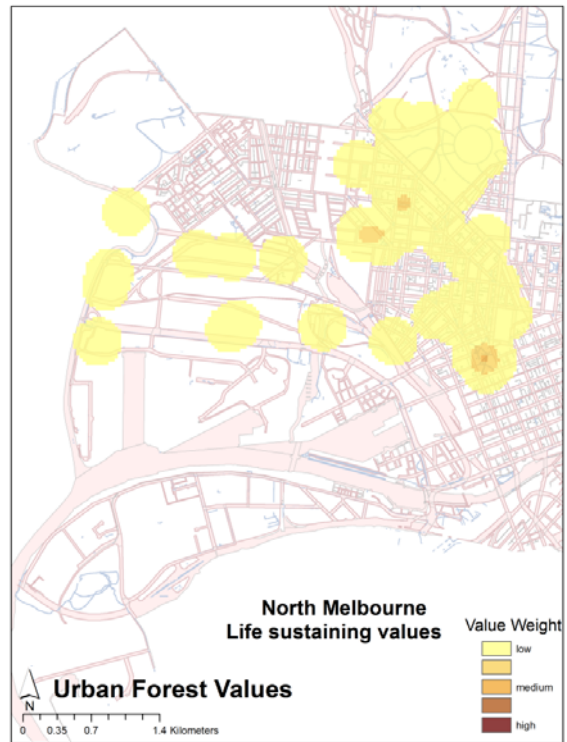
Maps 1- Density map of "Social" values for North Melbourne



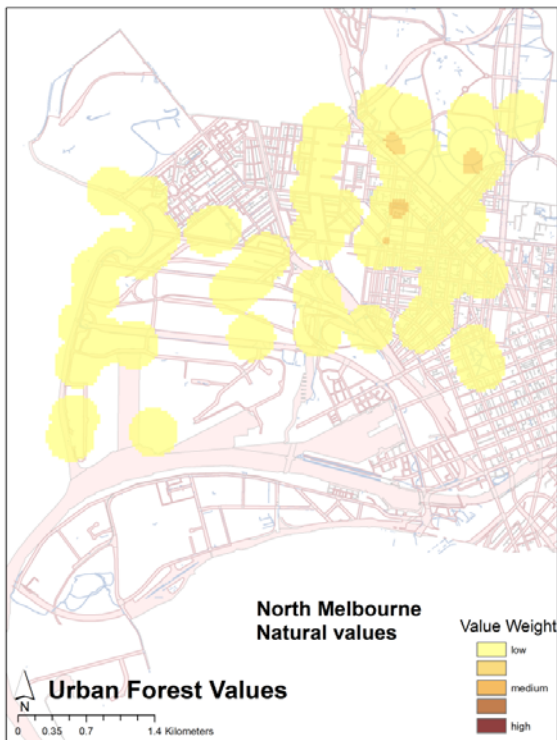
Map 2- Density map of "Aesthetic" value for North Melbourne



Map 3- Density map of "Cultural" values for North Melbourne



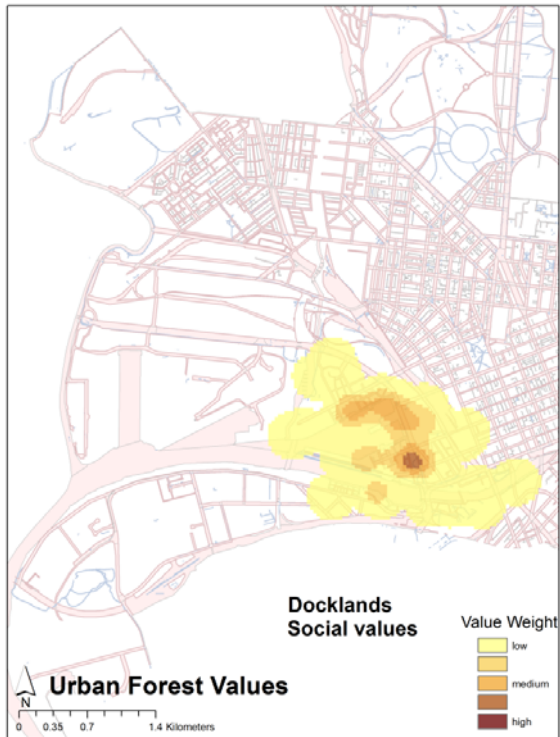
Map 4- Density map of "Life Sustaining" values for North Melbourne



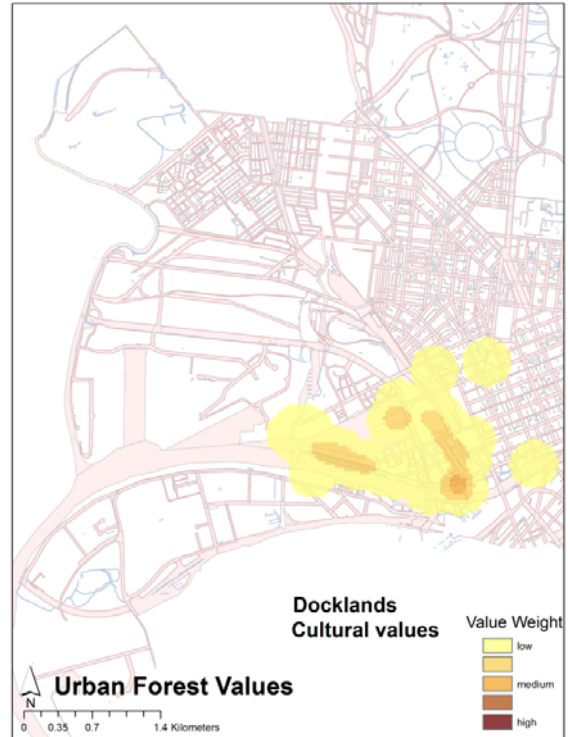
Map 5- Density map of "Natural" values for North Melbourne

## Docklands

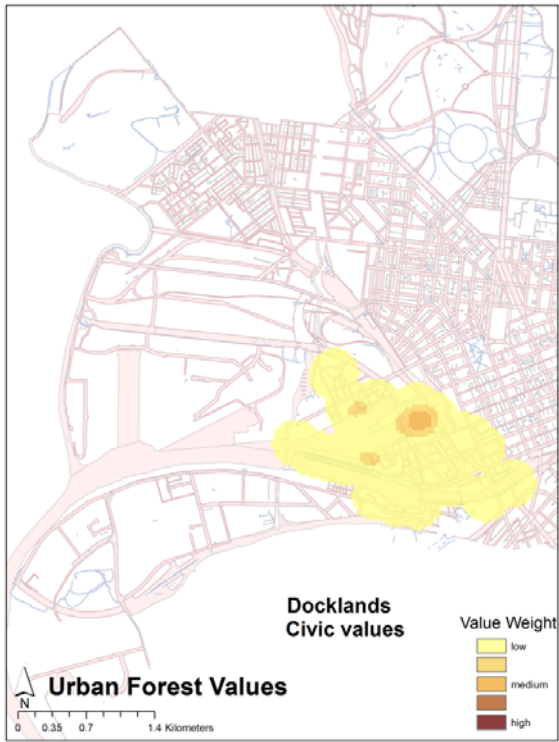
The value maps from the Docklands workshop also show interesting differences. Social values were most strongly located around open space such as Docklands Park, multipurpose sports fields and commercial precincts. Cultural values were most strongly located around heritage buildings such as the Grand Hotel and the Mission to Seafarers. Civic values were located around iconic areas such as Etihad Stadium and Victoria Harbor. Life Sustaining values were mostly located in parks (e.g. Docklands Parkland), along the banks of the Railway Canal and sporting fields. Natural values were located around areas of open space and parks (e.g. Docklands Park, Point Park and along the banks of the Moonee Ponds Creek).



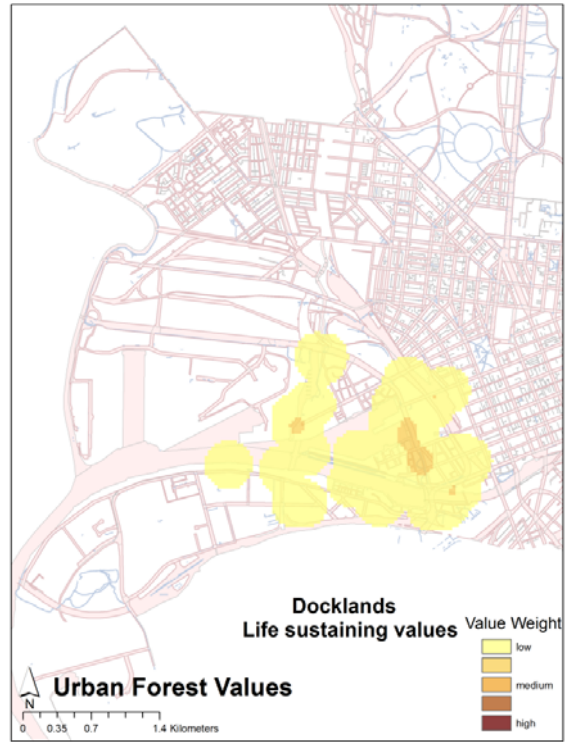
Map 6- Density map of "Social" values for Docklands



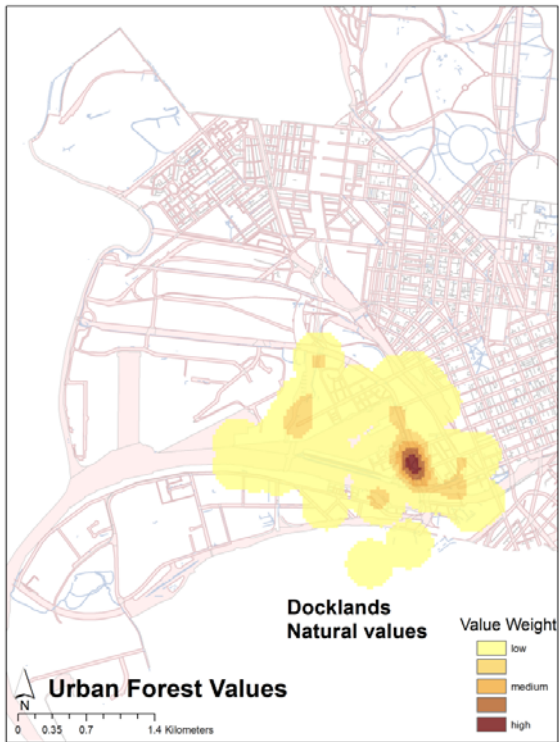
Map 7- Density map of "Cultural" values for Docklands



Map 7- Density map of "Civic" values for Docklands



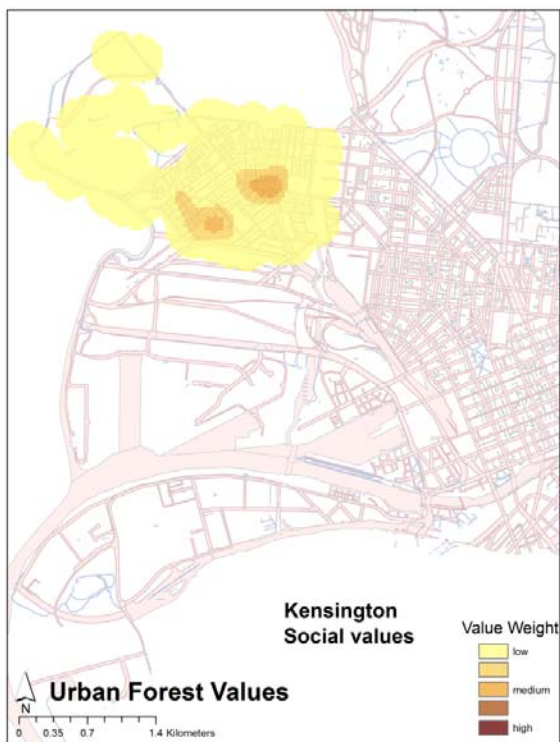
Map 8- Density map of "Life Sustaining" values for Docklands



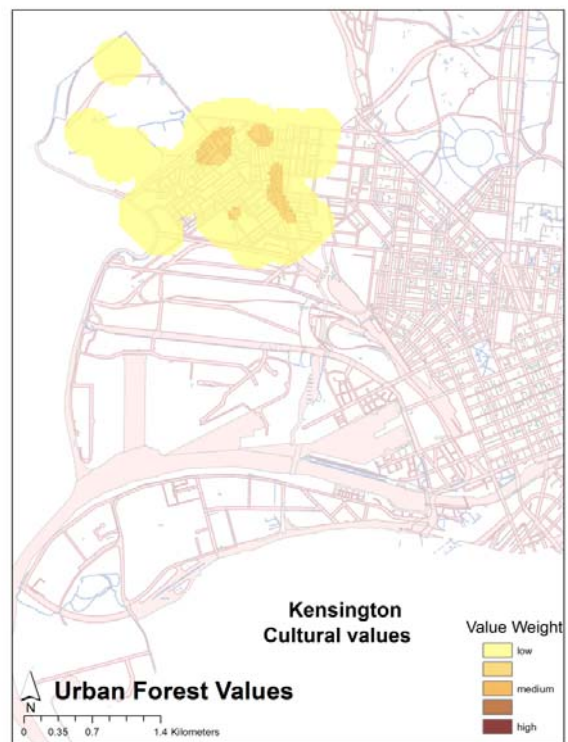
Map 9- Density map of "Natural" values for Docklands

## Kensington

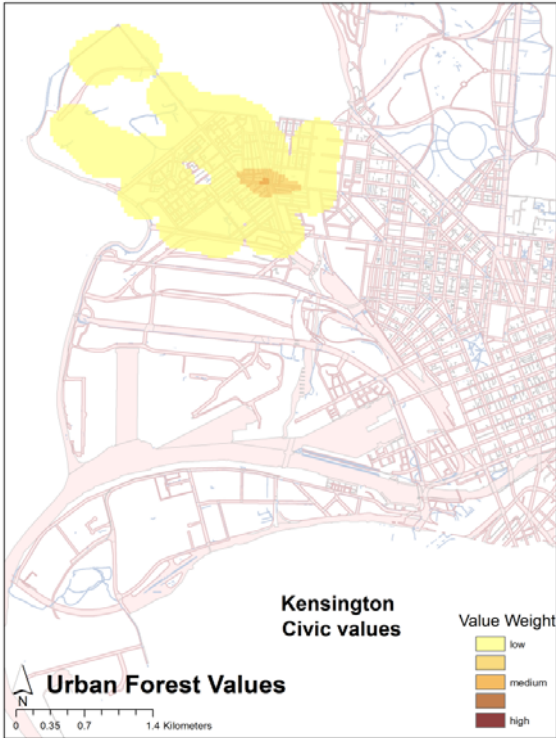
The value maps from the Kensington workshop show similar patterns to the North Melbourne and Docklands precincts. Social values are located around the commercial area along Macaulay Road and the open space and sport fields in JJ Holland Park. Cultural values are located along the railway and the residential areas around Epsom Road, the Princes Highway and Racecourse Road. Civic values are located around the treed commercial area along Macaulay Road and Bellair Street. Life Sustaining values are located around JJ Holland Park and the tree lined streets of Bellair Street, Eastwood Street and Rankins Road. Natural values are mostly located in large parks (e.g. JJ Holland Park, Lynch's Bridge, Women's Peace Garden) and along the tree lined Bellair and Eastwood Streets.



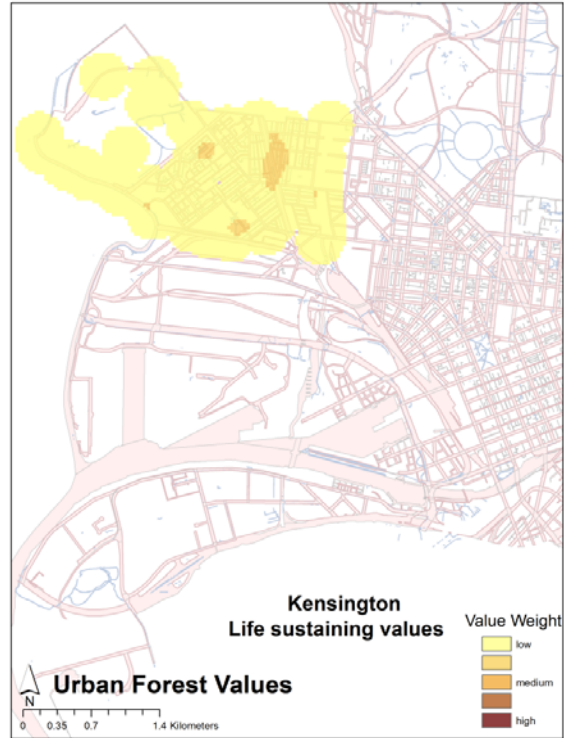
Map 10- Density map of "Social" values for Kensington



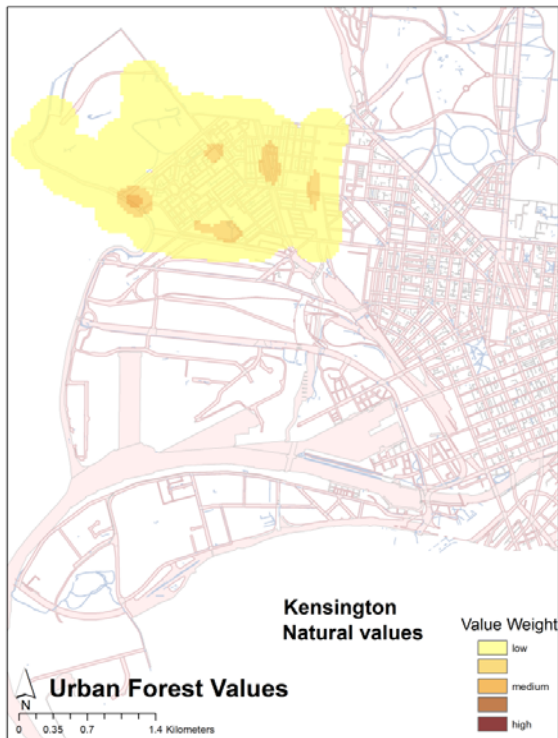
Map 11- Density map of "Cultural" values for Kensington



Map 12- Density map of "Civic" values for Kensington



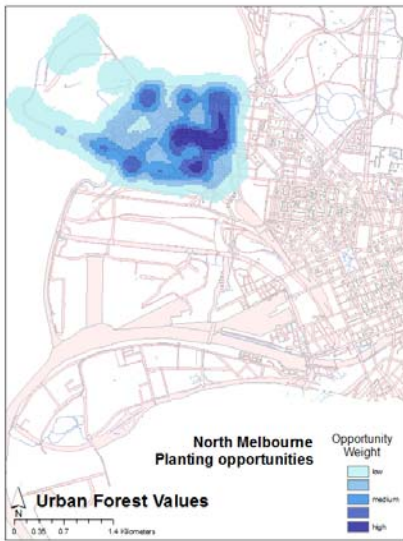
Map 13- Density map of "Life Sustaining" values for Kensington



Map 14- Density map of "Natural" values for Kensington

## PLANTING OPPORTUNITIES

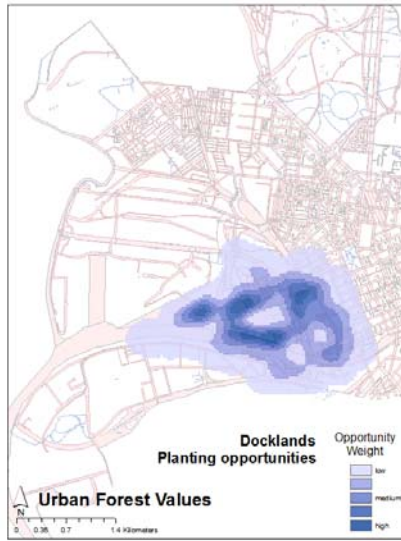
In addition to mapping the values of precincts, participants were asked to place stickers on the map where they thought more trees are needed and the areas could be improved by more or new tree planting.



**Map 15- Density map of areas in North Melbourne where there is opportunity to plant more trees**

### North Melbourne

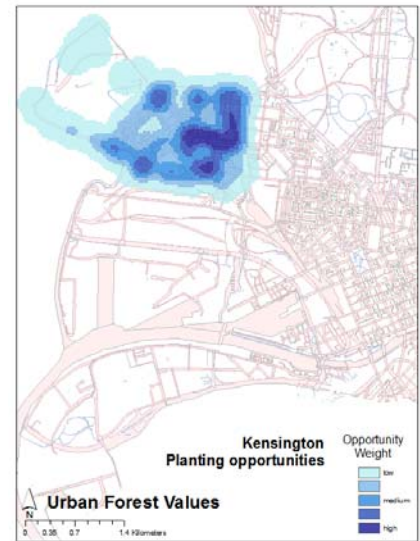
Opportunities for planting more trees were identified across the North Melbourne precinct, with some emphasis around Adderly St, the Errol St precinct, south of Flemington Rd, and along the Moonee Ponds Creek.



**Map 16- Density map of areas in Docklands where there are opportunities to plant more trees**

### Docklands

Opportunities for more tree planting in the Docklands precinct are strongly clustered around Victoria Harbour, Etihad Stadium, Docklands Park and the Yarra River.



**Map 17- Density map of areas in Kensington where there are opportunities to plant more trees**

### Kensington

Opportunities for more tree planting were identified across the Kensington precinct with emphasis along the Capital City Trail, the industrial areas of Arden Street and Lloyd Street, JJ Holland Park and Lynch's Bridge park, the commercial precinct of Macaulay Road and the corner of Racecourse Road and the Princess Highway.







## APPENDIX 1 – PRELIMINARY REPORT TECHNICAL ANALYSIS

Initial Factor Analysis of value questionnaire (based on North Melbourne and initial online survey, n=146)

Questionnaire item	Civic	Social	Heritage	Life Sustaining	Natural
<b><u>CIVIC</u></b>					
Making the city more welcoming	0.77				
Marketing the city	0.73				
Beautiful scenery	0.65				
Contributing to Melbourne's identity	0.51				
Improving quality of life in the city	0.47				
Attracting tourists to improve the local economy	0.45				
Increasing property prices	0.44				
<b><u>SOCIAL</u></b>					
An place that is accessible to everybody		0.79			
Intellectual stimulation and inspiration		0.55		0.30	
A place for children to experience nature		0.54			
Improving community cohesion		0.51			
Spaces for people to interact and socialise		0.48			
A place for rest and recovery from the stresses of daily life		0.44			
Production of food		0.42	0.30		
A place that is safe		0.41	0.35		
<b><u>HERITAGE</u></b>					
Reflecting human history and stories			0.85		
A place to experience Melbourne's history			0.78		
Being part of Melbourne's heritage	0.42		0.70		
Contributing to different cultural traditions			0.70		
Creating jobs and contributing to the local community		0.31	0.55		
<b><u>LIFE SUSTAINING</u></b>					
Providing shade				0.83	
Cooling streets and buildings				0.71	
Reducing air pollution				0.54	
A place for large old trees				0.52	0.30
Reducing storm water run off				0.40	
<b><u>NATURAL</u></b>					
A place for many kinds of animals to be					0.94
Habitat for native plants and animals				0.34	0.53
A place for nature in the city		0.40			0.47
A place for birds to live					0.31
<b><u>Not loading on any factor</u></b>					
A healthy environment				0.32	
Escaping the city	0.34	0.37			
A pleasant environment for outdoor activities such as walking, jogging or cycling	0.35	0.31			
Improving wellbeing for people in the city	0.40				
Proportion of Variance	14%	14%	14%	10%	7%
Cumulative Variance	14%	28%	41%	51%	59%

## APPENDIX 2 – FINAL REPORT TECHNICAL ANALYSIS

A total of 294 valid questionnaire responses were received across the three workshops and from the online survey. Five factors were identified (Table A2.1), explaining 60% of the variance in the data.

A scree plot (Figure A2.1) was used to select five factors for analysis. Factor analysis was performed using the *fa* function in the *psych* package in R2.15, to find the minres solution, using an oblimin rotation and replacing missing values with medians.

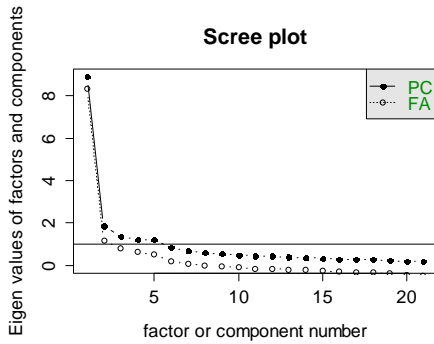


Figure A2.1 – Scree plot of questionnaire responses

Figure A2.1 – Final factor analysis based on all precinct and online data (n=294)

	Heritage	Civic	Social	Natural	LifeSustain
Human History	0.91				
Cultural Traditions	0.67				
Heritage	0.70				
Experience History	0.78				
Marketing		0.71			
Tourists		0.76			
Welcoming City		0.68			
Melbourne Identity		0.68			
Children Nature			0.57	0.33	
Socialise			0.53		
Community Cohesion			0.56		
Walk Jog Cycle			0.60		
Accessible			0.50		
Improving Wellbeing			0.60		
Habitat				0.79	
Place For Birds				0.61	
Many Animals				0.85	
Shade					0.69
Cooling					0.76
Old Trees					0.32
Air Pollution					0.44
<i>Proportion Var</i>	0.15	0.13	0.13	0.11	0.09
<i>Cumulative Var</i>	0.15	0.28	0.40	0.51	0.60
<i>Cronbach's alpha</i>	0.90	0.85	0.87	0.84	0.75

# NORTH AND WEST MELBOURNE URBAN FOREST

## PRECINCT PLAN 2014 - 2024



FINAL  
DRAFT

# NORTH WEST MELBOURNE URBAN FOREST

## PRECINCT PLAN 2014 - 2024

### 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?

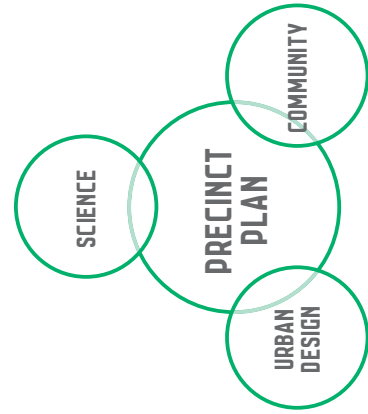
The urban forest comprises all of the trees and other vegetation – and the soil and water that supports it – within the municipality. It incorporates vegetation in streets, parks, gardens, plazas, campuses, river and creek embankments, wetlands, railway corridors, community gardens, green walls, balconies 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 Melbourne 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 to 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* is being updated to strategically manage Melbourne's water catchment. In the meantime, we have implemented numerous water sensitive urban design projects to capture and store

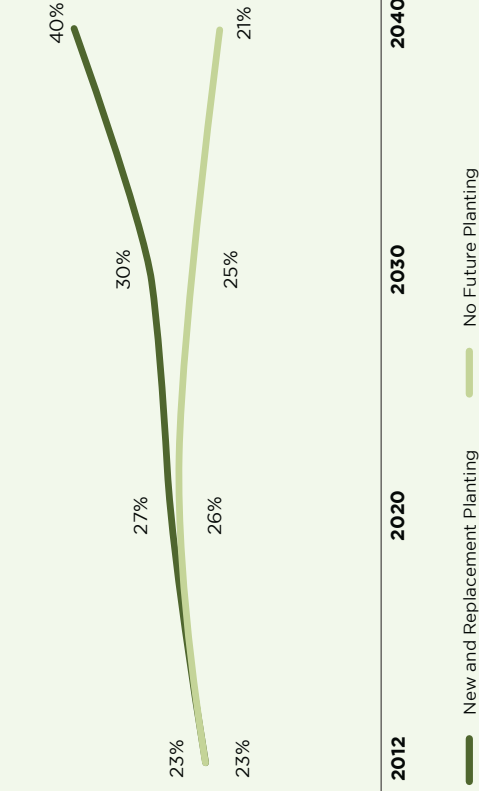
water that would otherwise go down the drain. This water is being used to water the vegetation in our urban landscapes.

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.

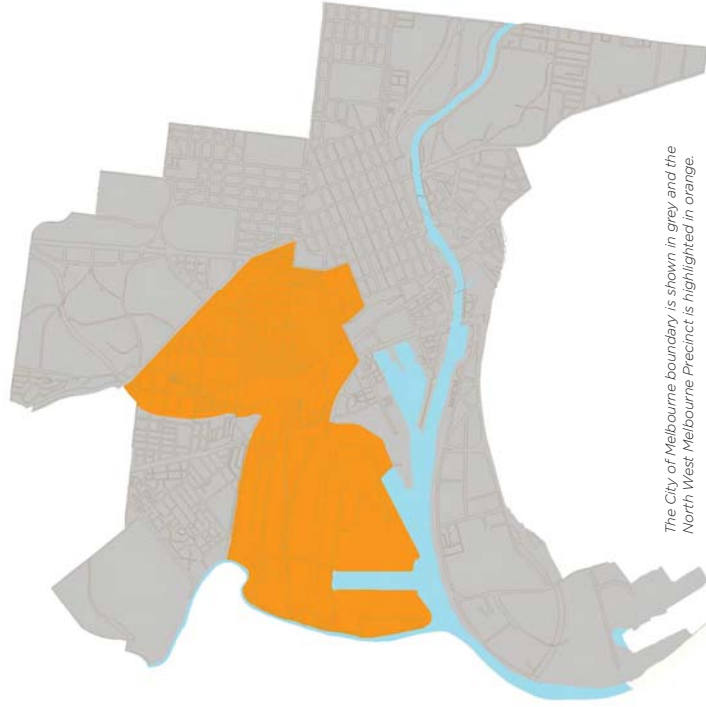
Within this document, specific direction is provided on the selection of appropriate trees for the precinct. The plans are performance based in that they

establish the desired outcomes for streets but do not prescribe specific species for each location. A set of *Urban Forest Diversity Guidelines* are being 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 North & West Melbourne, the heritage overlays, City North and Arden Macaulay Structure and Plans, Open Space Strategy and future development areas strongly influence the future character of the precinct. Structure planning may provide opportunities for new tree planting in appropriate locations as they are developed.



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

## THE VISION FOR NORTH WEST MELBOURNE URBAN FOREST

**NORTH & WEST MELBOURNE'S URBAN FOREST WILL BE ALIVE WITH COLOUR, DIVERSITY AND INTEREST. ITS SHADY, LAYERED AND CONNECTED CANOPY WILL PROVIDE A RETREAT FOR PEOPLE AND WILDLIFE. THE VARIED CHARACTER OF THE PRECINCT WILL BE REFLECTED IN THE CHARACTER OF PLANTINGS.**



## 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 tripling of private realm canopy cover to 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 North & West Melbourne precinct, the Port of Melbourne, State Government and schools manage large areas of land that could potentially support greater canopy cover. 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, with neighbouring municipalities the City of Melbourne will work to support and encourage the adoption of urban forest strategy principles in other jurisdictions.

## Historical and existing tree plantings

North Melbourne and the eastern section of West Melbourne were surveyed and subdivided in the 1850s. The western section of West Melbourne was a saltwater wetland that would have provided an important seasonal food source for Aboriginal people of the Wurundjeri tribe. In the early years of settlement the wetland was a beauty spot and hunting ground, but later became spoiled with waste. It was drained in the late 1800s and developed into the low lying railway and industrial areas of West Melbourne that exist today. North and West Melbourne were within the Town of Hotham until 1888, when Hotham amalgamated with City of Melbourne.

Early tree planting was largely driven by the desire to create

windbreaks, manage dust and establish shade. Flemington Road was a rough track in the earliest days. Improvement plans were developed in 1874 but the elms were not planted for some years due to cost. The Brush Boxes were planted in 1926.

A tender for 100 iron tree guards was advertised in 1876 and 50 of these were used in Queensberry Street to plant elms 4.5 m apart. Newspaper records indicate that Peel Street was planted around 1878 and Elizabeth Street was planted close to that time also. Curzon Street was planted in approximately 1884. Chapman Street and Canning Street were planted around 1886. Councillor preferences at this time suggest elms were commonly planted in streets while in reserves the preference was for deciduous trees alternated with evergreens (e.g. elms with pines). Most of these original plantings in streets appear to have been replaced.

Other significant periods of street tree planting occurred in the 1930s when many tree islands and medians were constructed, and another wave of planting occurred from the 1970s onward and this period saw a greater emphasis on the use of native trees.

## North West Melbourne character

North and West Melbourne have a strong cultural identity attached to the arts community and their proximity to Queen Victoria Market, added to which a variety of commercial, industrial, residential and other land uses have been mixed. The precincts' street grid is largely based on the 200 m by 100

m module common to other local neighbourhoods, varying between a radial geometry in the south-west sector, and a north-south orientation in the central sector, and east-west to the north.

While the major open spaces of Royal Park and Flagstaff Gardens are located on the neighbourhood fringe, there are few parks within the neighbourhood of any significant size. The points at which the different city grids converge result in distinctively shaped urban spaces. These offer unique opportunities and the potential for meaningful and enlarged green spaces such as the recently completed Errol Street Park.

Many of the streets in North and West Melbourne are 30 metres wide, with relatively narrow footpaths and no nature strips. A network of laneways and narrow streets also filters through the neighbourhood creating a dense, more intimate character. There are opportunities to expand planting opportunities in wider streets by either planting in roadsides and footpaths or by changing existing configurations to create new nature strips, road ends and kerb outstands. Understorey planting can also be supported in many locations.

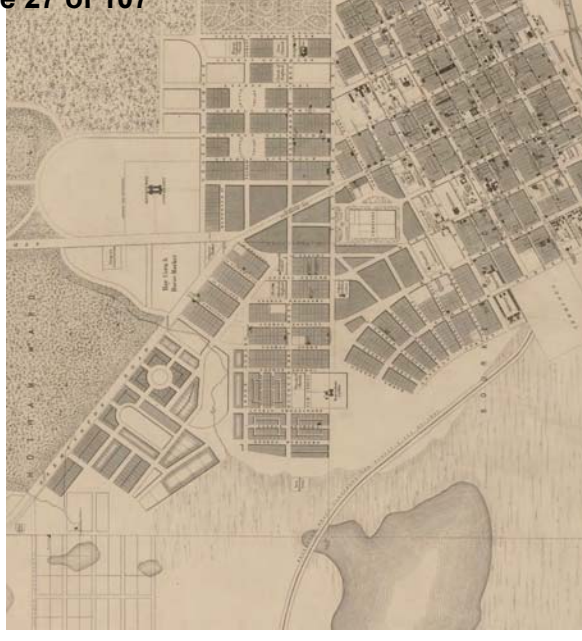
The core genera (Groupings of species) that characterise North and West Melbourne's urban forest are the many mature spotted gums and eucalypts that distinguish the area from other parts of Melbourne as well as elms and planes commonly found across the city.

Community consultation highlighted opportunities to create diverse and surprising landscapes in pocket parks and other strategic locations.

More uniform landscapes were favoured for wide streets and boulevards. Access to light, scale relative to homes and good design were also highlighted.

The character of the urban forest in North & West Melbourne is varied between areas with different historic land uses but a strong native tree planting theme permeates the neighbourhood and strengthens with proximity to Royal Park. In the more established residential zones of North Melbourne, mature spotted gums, elms and planes are planted uniformly in the wider avenues.

More recent plantings in narrow streets have introduced an eclectic range of species. The formerly industrial zones of North & West Melbourne (now becoming more residential) offer wide streets but plantings are relatively recent and consist of varied species. The industrial and future development areas of North & West Melbourne are largely un-planted and offer a substantial opportunity for tree planting as they develop.



*\*Melbourne and Its Suburbs' compiled by James Kearney, draughtsman; engraved by David Tulloch and James D. Brown. Victoria Surveyor-General [Melbourne]; Andrew Clarke, Surveyor General 1855. (part, State Library of Victoria collection)*

# COMMUNITY PRIORITIES

North & West Melbourne'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 North & West Melbourne's urban forest.

Consultation highlighted that North & West Melbourne's urban forest should contribute shade, colour, beauty and native habitat. The urban forest should provide a cool, healthy environment and be a place to meet, people, relax and escape the hustle and bustle.

## COLOUR



*Images selected by the community as representing a preferred future for North West Melbourne urban forest that includes colour, shade, layers, diversity and canopy*

## Desired future states defined by the community

- Shady, layered, connected, diverse; aesthetically pleasing
- Social, immersive and peaceful, providing relief from heat
- Native trees and native bird and insect attracting
- Healthy, appropriate tree selection and water sustainable
- Enhancement of local neighbourhood character and maintenance of heritage character and boulevards

## Urban forest benefits highlighted through community consultation

- Shade
- Biodiversity
- Social cohesion
- Connection with nature
- Aesthetic beauty and screening
- Psychological benefits (e.g., sense of calm, soothing etc.)

## SHAPE, DIVERSITY AND LAYERS



**COMMUNITY PRIORITIES  
CONTINUED**

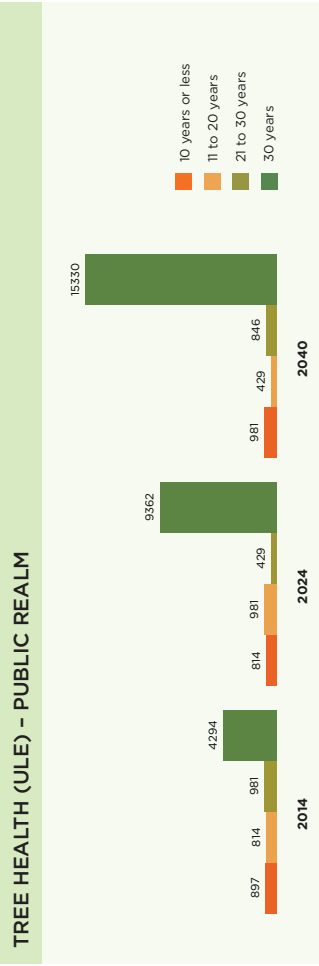
**STREETSCAPE**



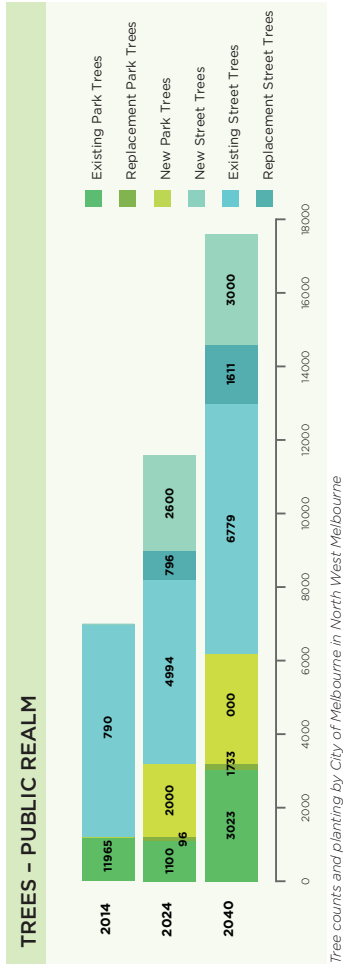
*North West Melbourne community members developing priorities for planting in the precinct. (opposite)*



# NORTH WEST MELBOURNE URBAN FOREST IN 2014 AND ITS PROJECTED FUTURE



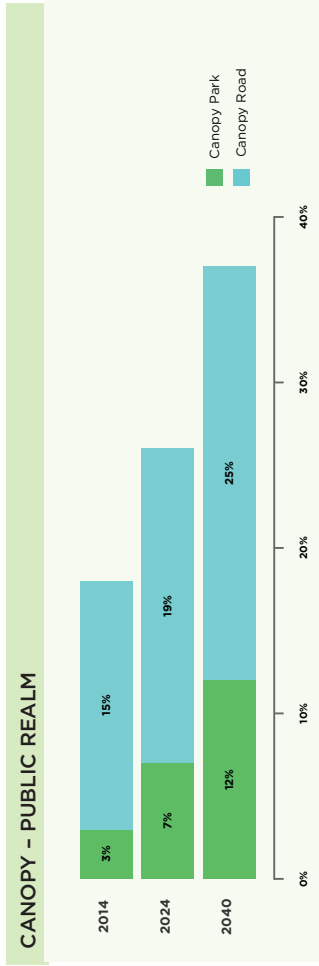
Tree counts for North West Melbourne, categorised by useful life expectancy (ule) in years



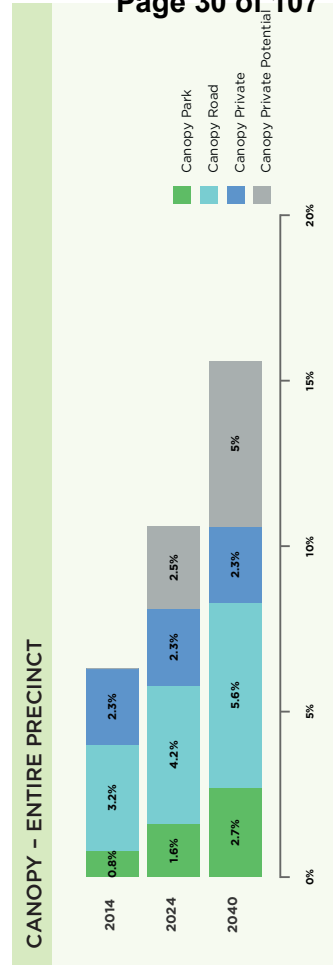
Tree counts and planting by City of Melbourne in North West Melbourne



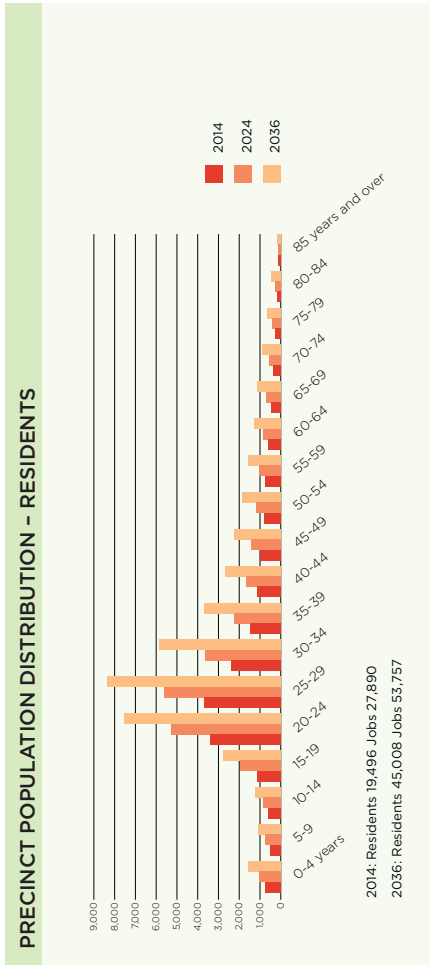
Main genus types for North West Melbourne



Tree canopy and locations for North West Melbourne



Tree canopy and locations for North West Melbourne



Projected resident population by age for North West Melbourne

# 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. Unforseen 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 which have a:

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 Unforseen 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

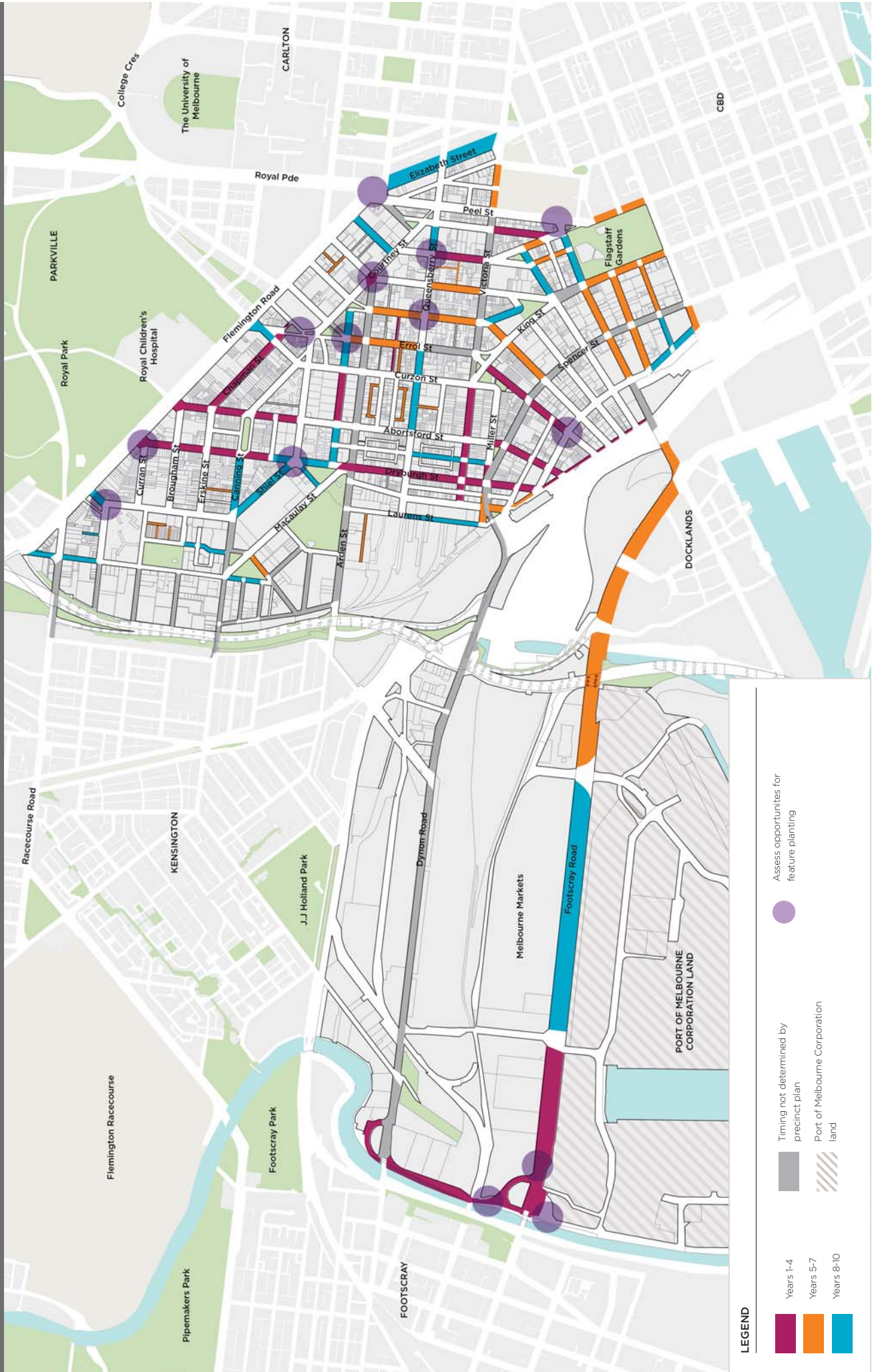
Review Streetscape objectives  
Review What should change (Map 7)  
Review Planting plans (Map 8, 9 & 10)  
Review species palette



### Implement planting

Produce streetscape design options  
Consult with residents  
Plant

**MAP 1: PLANTING PRIORITIES**



**LEGEND**

- Years 1-4
- Years 5-7
- Years 8-10
- Timing not determined by precinct plan
- Port of Melbourne Corporation land
- Assess opportunities for feature planting



# PRIORITISING TREE PLANTING IN STREETS

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 North & West Melbourne specific principles are outlined below

## Planting types and locations: Preference large canopy trees

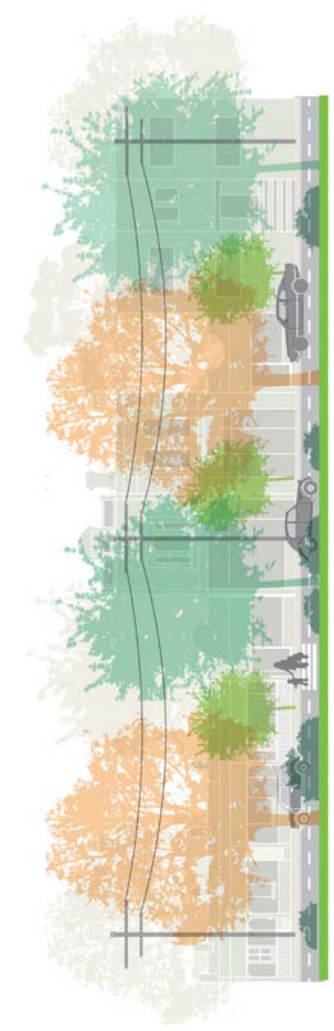
A single large canopy tree provides greater benefits in terms of cooling, rainwater interception and other ecosystem services than multiple small trees totalling the same canopy extent. Wide streets in North & West Melbourne present opportunities for planting large trees in medians and, in some locations, there is potential to reduce road widths and construct either medians or nature strips for large trees. Streets such as Spencer Street, Dryburgh Street and Victoria Street have existing medians with poor below ground conditions that will need to be remediated when trees are replaced.

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. Consider extending the character of Royal Park and the numerous small reserves into the surrounding streetscapes to create linkages between open spaces.

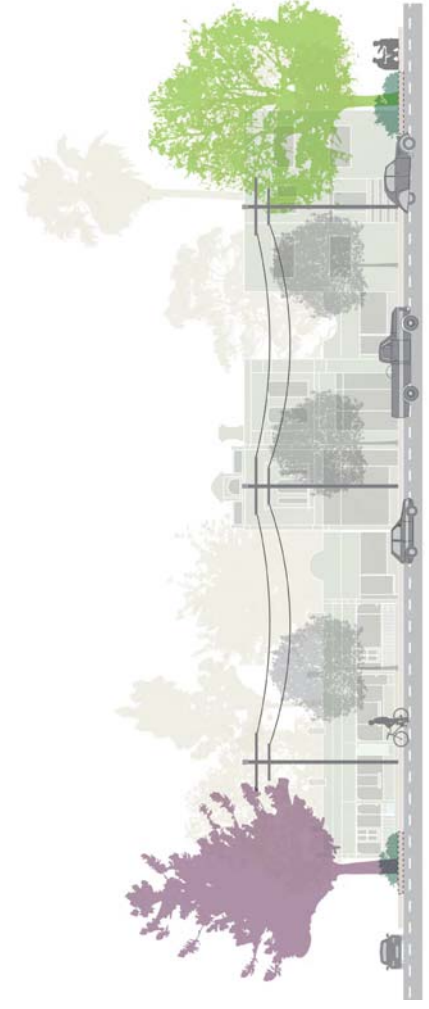
Low voltage overhead wires are present in many North & West Melbourne streets. High voltage wires are also present on Arden Street, Dynon Road, Railway Place and portions of Dryburgh Street, Queensberry Street, Courtney Street and Capel Street. These constraints limit the potential for large, natural canopy growth. Where medians 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. Below ground services such as gas mains and water mains also restrict planting on streets such as Dryburgh Street, Melrose Street and Railway Place among others. Alternative 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.



Streetscape with powerlines



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 CONTINUED

## 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/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 (e.g., 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 (e.g., perimeters of parks and gardens, streets where most trees senescent but important established specimens remain, streets where vegetation from private gardens occasionally overhangs into street space, etc.);
- 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.

## 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 or cells below permeable paving
- Increasing soil volume
- WSD tree pits or infiltration pits
- Stormwater harvesting
- Improving existing soil quality and water holding capacity

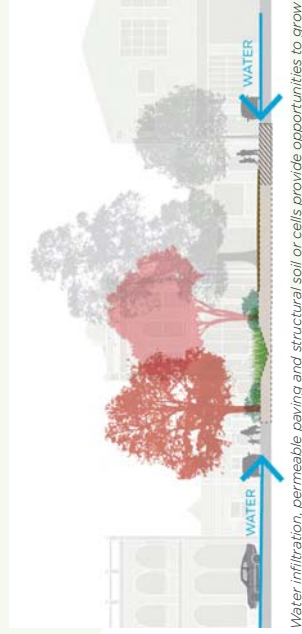


Use informal mixes of species where acceptable (e.g., perimeters of parks and gardens, streets where most trees senescent but important established specimens remain, streets where vegetation from private gardens occasionally overhangs into street space, etc.).

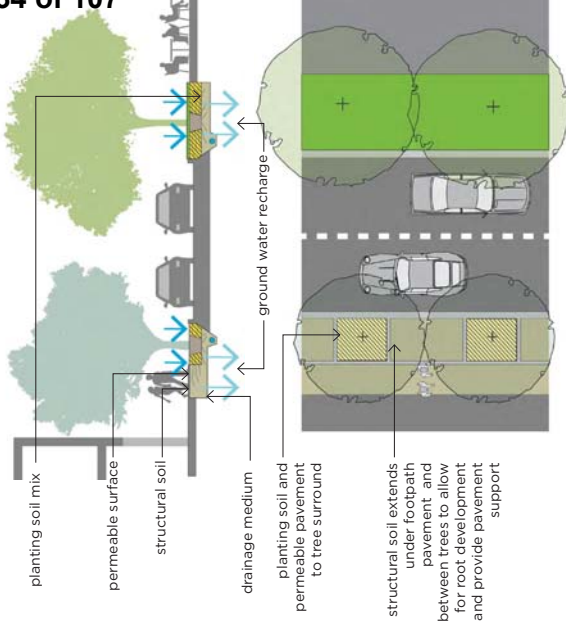
The native soils in North & West Melbourne were formed from Silurian deposits. Heavy silty-clay soils with poor drainage occur in western part of the precinct for most of the length of Flemington Road and Elizabeth Street.

The exception occurs between Gatehouse and Abbotford Street where heavy textured clay soils derived from deeply weathered basalt occur. This same soil type is prevalent from Park Street south to Arden Street and in much of West Melbourne. Below the higher elevation areas in the vicinity of Erskine Street, and then Arden Street from Lauren Street to Curzon St and south through Flagstaff Gardens the underlying mudstone is capped with flat-lying tertiary sand which produces a loamy-sandy soil. Within this cap one would expect better drainage than the mudstone and sufficient nutrient status to support healthy trees. Adjacent to the Moonee Ponds Creek and over the full extent of the western end of the precinct (i.e., from the rail corridor west) medium to heavy textured clay with some sand derived from alluvial deposits is present, as is variable fill and Coode Island Silt.

The Maribyrnong River and Moonee Ponds Creek are important waterways within the North & West Melbourne precinct and the surrounding 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.



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

**MAP 2: KEY PLANTING CONSTRAINTS**

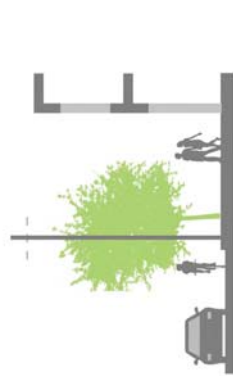


**LEGEND**

	Existing tram line with tram stop		High pressure gas line
	Low voltage powerlines		Proposed East West link
	High voltage powerlines		Port of Melbourne Corporation land
	Existing tram stop		Extent of City of Melbourne municipality boundary
	Future Melbourne Metro (PLAN Melbourne)		Boundary for North West Melbourne precinct
	Large Scale co-generation plant		Stormwater collection points
	Local co-generation plant		
	Water treatment plant		
	Central Services Hub (CHS)		
	Potential light rail (alignment to be confirmed) (PLAN Melbourne)		
	Closed loop system		

**Map 2: Key planting constraints**

This map indicates locations where overhead constraints 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.



*Small tree under powerlines*



*Tree trimmed under powerlines*

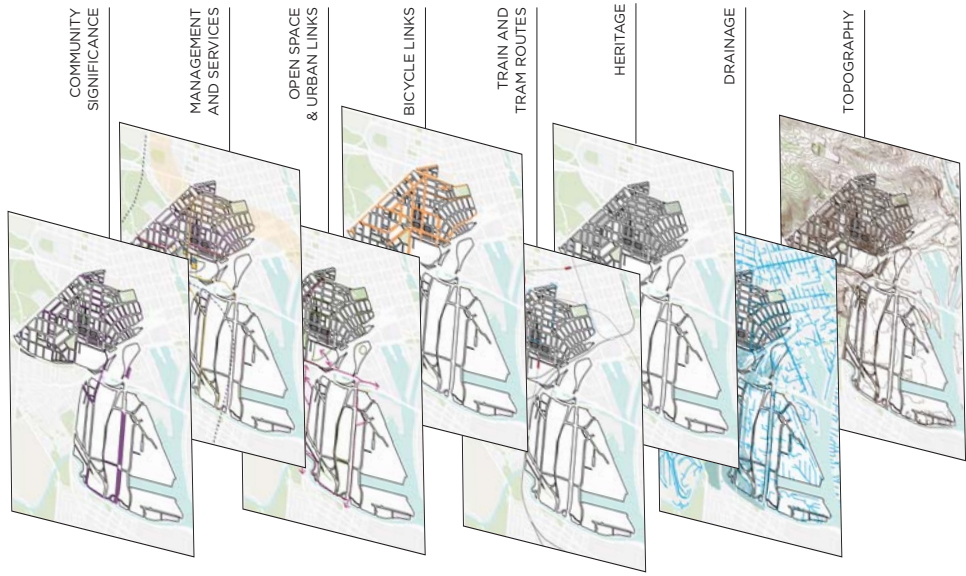
**Map 3 & 4: Planting Opportunities**

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

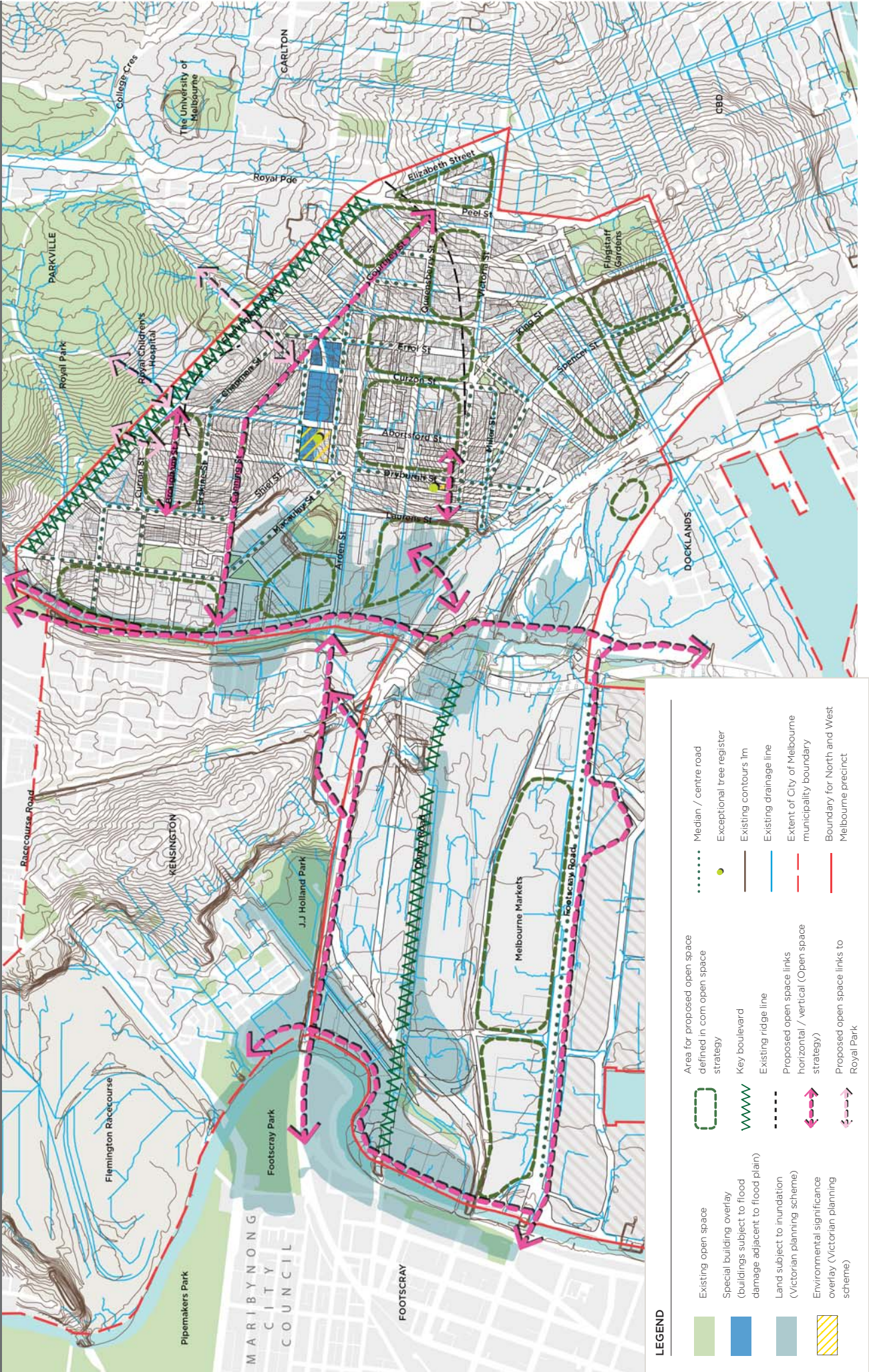
Map 3 illustrates the Natural and Open Space Context which considers the geographic aspects of the precinct as well as open space opportunities.

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

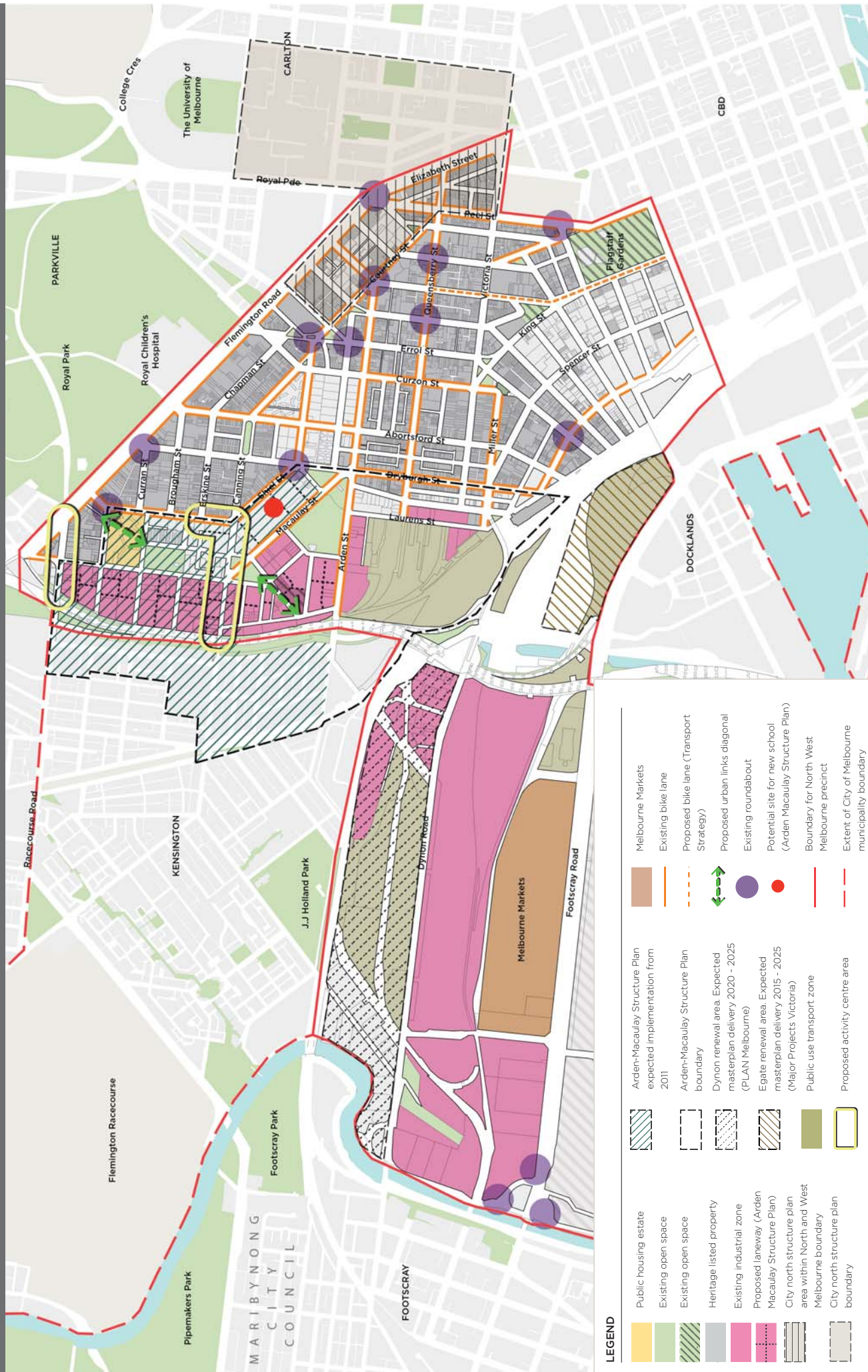
The combination of all of these factors will influence the design for streets, the varied role of planting in these streets and species selection. (refer Maps 3 & 4 on pages ##&##)



MAP 3: NATURAL AND OPEN SPACE CONTEXT



MAP 4: STRATEGIC CONTEXT



LEGEND

- |  |  |  |   |
|--|--|--|---|
|  | Public housing estate  |  | Melbourne Markets   |
|  | Existing open space  |  | Existing bike lane  |
|  | Existing open space  |  | Proposed bike lane (Transport Strategy)                       |
|  | Heritage listed property   |  | Proposed urban links diagonal                                 |
|  | Existing industrial zone   |  | Existing roundabout   |
|  | Proposed laneway (Arden Macaulay Structure Plan)                                       |  | Potential site for new school (Arden Macaulay Structure Plan) |
|  | City north structure plan area within North and West Melbourne boundary                |  | Boundary for North West Melbourne precinct                    |
|  | City north structure plan boundary   |  | Extent of City of Melbourne municipality boundary             |
|  | Public use transport zone  |  |   |
|  | Proposed activity centre area  |  |   |
|  | Arden-Macaulay Structure Plan expected implementation from 2011                        |  |   |
|  | Arden-Macaulay Structure Plan boundary   |  |   |
|  | Dynon renewal area. Expected masterplan delivery 2020 - 2025 (PLAN Melbourne)          |  |   |
|  | Egate renewal area. Expected masterplan delivery 2015 - 2025 (Major Projects Victoria) |  |   |

# GUIDING PRINCIPLES AND CONSIDERATIONS FOR TREE PLANTING CONTINUED

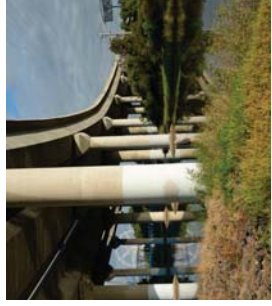
## Map 5: Planting Sub-precincts

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

### Arden- Macaulay growth area precincts

This precinct will undergo considerable change with conversion of the existing industrial areas to a higher density, mixed use neighbourhoods. There will also be considerable change to the existing housing estate and a need to plan for the new infrastructure (i.e. schools, public transport, activity/retail hubs) this growing community will require. The growth area is made up of 3 distinct sub precincts:

Arden precinct adjacent to the Moonee Ponds creek is subject to flood inundation, and is currently characterised by industrial uses and the large recreation open spaces of North Melbourne. The urban forest in this precinct can extend the habitat values of the creek corridor and will need to respond to soil moisture conditions and be resilient to periodic flooding.



Moonee Ponds creek

**Macaulay/Flemington precinct** is currently characterised by its industrial land uses and is defined by the creek, railway and Citylink road infrastructure, Boundary Road and Macaulay Road.

Macaulay community precinct is currently a mixture of public housing, park and community infrastructure. The selection of trees and streetscape design in this area will need to be developed to provide increased amenity as part of the future neighbourhood activity centre.

### City north growth area

This precinct will undergo a greater degree of change than most areas of North Melbourne. The growth area extends into, and will have strong links to, the north edge of the city and Carlton. Increased building height and density will create a varied microclimate at street level with the public realm design and planting needing to respond to issues of wind, building shade and providing pedestrian amenity and comfort. Enhancing the precinct's connections to Royal Park and linking the small reserves along Courtney Street will increase permeability and open space amenity.

### Central park precinct

This precinct sits across a small valley in middle of North Melbourne that runs west to Moonee Ponds Creek. A series of triangular street intersections and open spaces are located where the two street layouts meet, and a number of wide medians connect these spaces. The Open Space Strategy proposes the expansion and connections between these smaller open spaces. The selection of trees and streetscape

design in this precinct will need to address the management of storm water along this valley.



Row of Elms in Chetwynd Street North Melbourne

### North Melbourne retail precinct

This area sits to the north of Victoria Street and is characterised by its mix of heritage commercial and residential buildings. It is the hub of commercial and retail activity in North Melbourne with the 'high streets' of Victoria Street and Errol Street, and the Town Hall. The urban forest in this precinct needs to provide appropriate microclimate for outdoor dining, and enhance the character of this destination precinct.

### Central residential heritage precinct

The central residential heritage precinct occupies the hilltop at the west end of Victoria Street and slopes to the north and west in a tight grid of heritage residential buildings interspersed with a mix of industrial and institutional uses. The series of service lanes also add to the fine grain of this precinct which contrasts with the broad width of the through streets.

### North Melbourne station precinct

This area extends from North Melbourne Station up to Victoria Street at the intersection of Erroll Street. The station area is part of the Arden-Macaulay Structure Plan and will be an important junction between the E-gate precinct in future, along with the connection to the Errol Street shops. A series of small open spaces and wide street corners run through this precinct where the North and West Melbourne street patterns meet. These streetscape and open spaces will be enhanced to strengthen the connections between the key activity points, expanding open space areas and introducing greater biodiversity.

### Royal Park precinct

On the north edge of North Melbourne, this area along Flemington Road is predominantly low rise heritage residential. The connection of this precinct to Royal Park will be enhanced through the character of its tree and streetscape planting. The Open Space Strategy identifies the need for some new smaller open spaces in this precinct.



Corymba maculata in Chapman Street North Melbourne

### Market / Flagstaff north precinct

This precinct is a pocket north of Flagstaff Gardens to Victoria Street where the city grid and north Melbourne street layouts meet, creating a series of angled junctions with wide streetscape spaces. The opportunities in this area include enhancing the park character of these spaces to create a strong connection to Flagstaff Gardens and the Market.

### Flagstaff west precinct

Separated from the rest of the CBD by Flagstaff Gardens, this pocket of West Melbourne has a strong relationship with the character of the city, while Dudley Street separates it from the rest of West Melbourne. There is an opportunity to create a distinctive character in this precinct that strengthens its connections to Flagstaff Gardens.

### West warehouse precinct

This precinct is defined by the tapering lot sizes that result in a transition from larger warehouses towards King and Spencer Street, towards the finer grain at Railway Place. The radiating streets have a common character and the arcing layout of the intersecting streets creates changing viewlines to the intersecting streets.

### Dynon growth area

This area primarily accommodates freight and light industrial uses and is bounded by both the Marlyrnong River and Moonee Ponds Creek. The urban forest will support the ecological and recreation value of these corridors and a diverse gateway linkage to the city from the west. A consistent

native and indigenous planting palette used in this area will maintain the buffer between the ports and Melbourne's exotic urban forest plantings to mitigate the risk of exotic tree pests escaping from the ports.

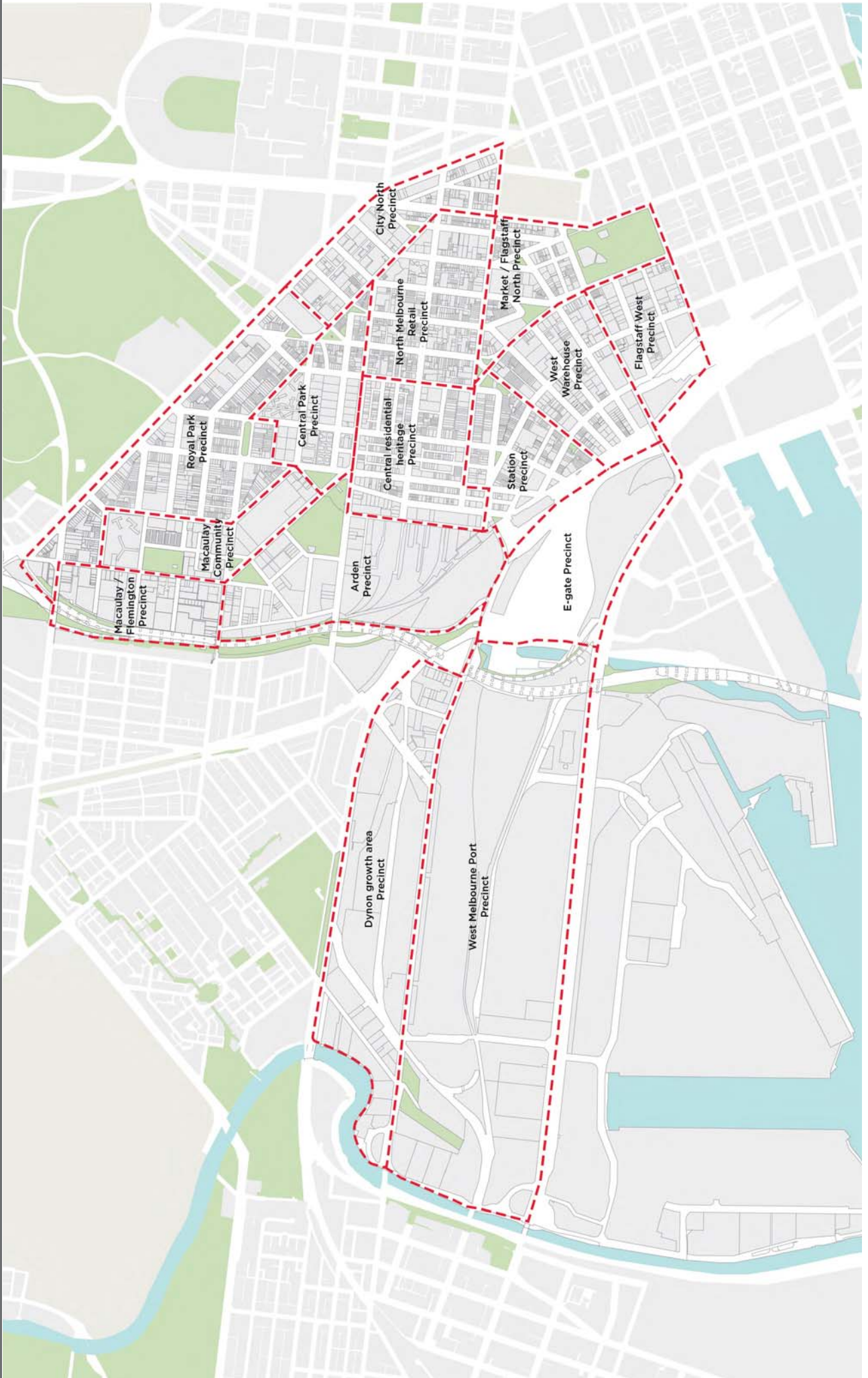
### West Melbourne port precinct

This area will undergo significant change with the market relocations and proposed road and rail developments. As with the Dynon precinct, the urban forest will play an important role in linking the Marlyrnong River and Moonee Ponds Creek, and creating a significant gateway. Flood management will also need to be considered in the design of these linear corridors. It is also important to consider how the Port of Melbourne land supports the drainage and ecological functions of this area. A consistent native and indigenous planting palette used in this area will maintain the buffer between the ports and Melbourne's exotic urban forest plantings to mitigate the risk of exotic tree pests escaping from the ports.

### E-gate precinct

Whilst the future development of this precinct is yet to be determined, its urban forest will need to consider its close linkages with North and West Melbourne, and Docklands. This area is currently occupied by rail infrastructure and its development will need to consider how it will best support tree growth. A consistent native and indigenous planting palette used in this area will maintain the buffer between the ports and Melbourne's exotic urban forest plantings to mitigate the risk of exotic tree pests escaping from the ports.

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. Planting configuration should seek to maximise canopy cover in all cases.

### Biodiversity

The Moonee Ponds Creek, and Maribyrnong River are important ecology corridors and the precinct plan will look to enhance habitat and bio diverse connections along these waterways and the drainage lines that feed into them. Creating links between the small open space pockets and the wider medians.

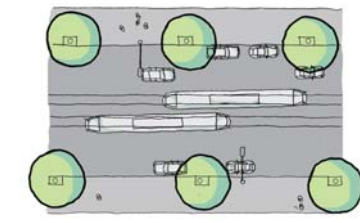
Opportunities to enhance biodiversity include selecting bird and pollinator attracting species and adding layers of vegetation to provide structural diversity. Avenue and linear open space corridors along Footscray and Dynon Roads play a key role in supporting biodiversity. Other streets may also provide 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)

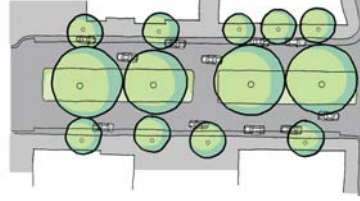
## Map 7: What should stay and what should change?

Planes, elms, Corymbias (Gums) and eucalypts are core genera within North & West Melbourne'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.

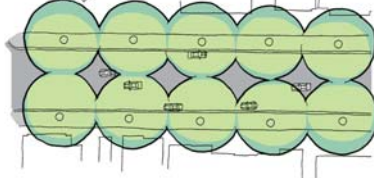
### Minimum canopy cover of 20%



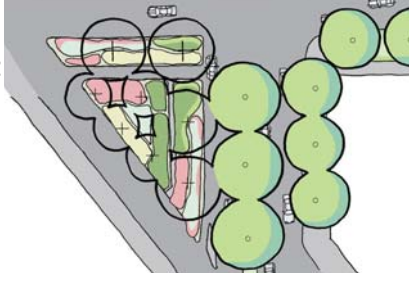
### Minimum canopy cover of 20 - 40%



### Minimum canopy cover of 40%



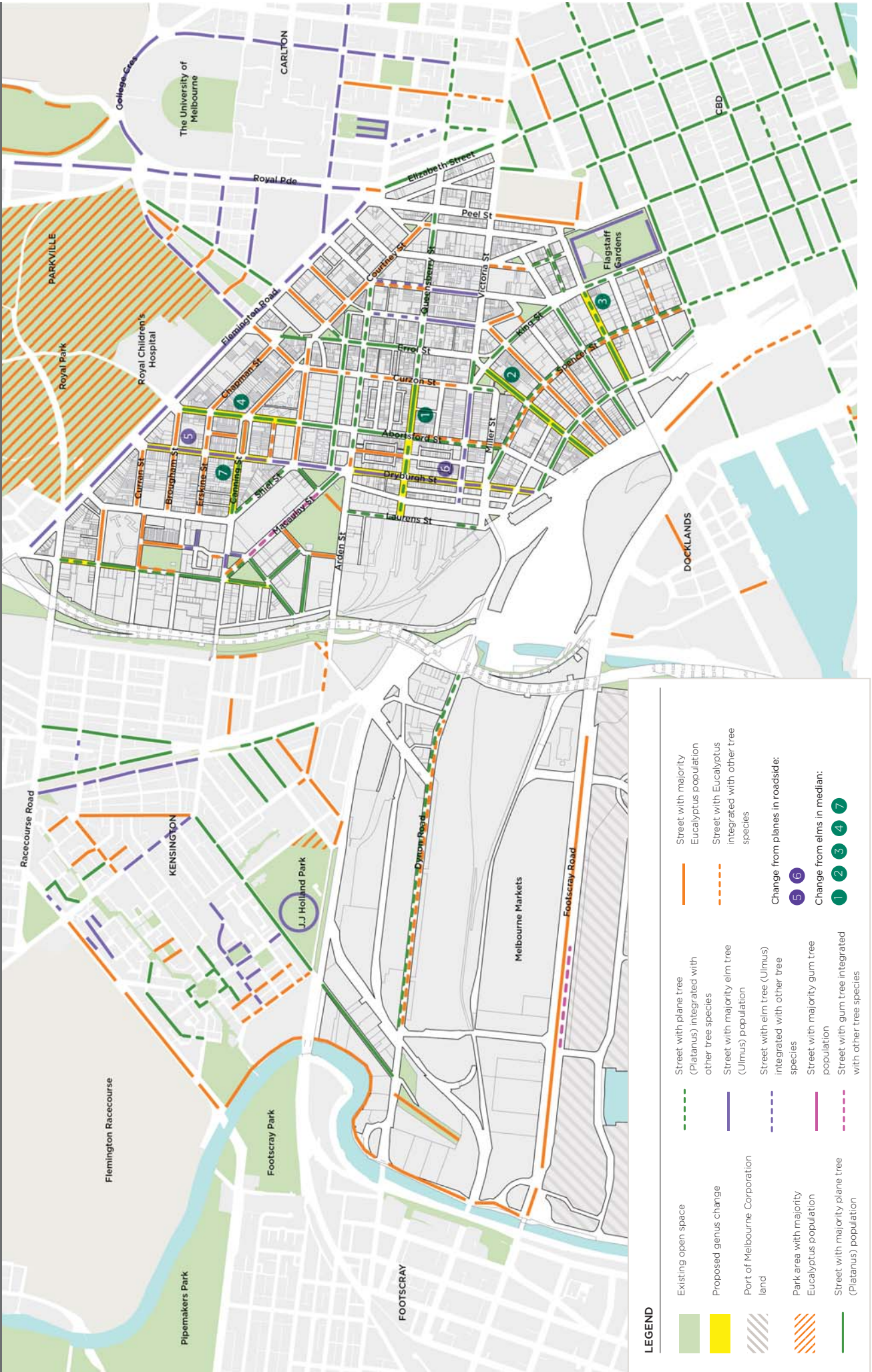
### Biodiversity objective maximise canopy



**MAP 6: CANOPY COVER AND BIODIVERSITY OUTCOMES**



**MAP 7: WHAT SHOULD STAY AND WHAT SHOULD CHANGE?**



# 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 Maribymong 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 North & West Melbourne. 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.



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

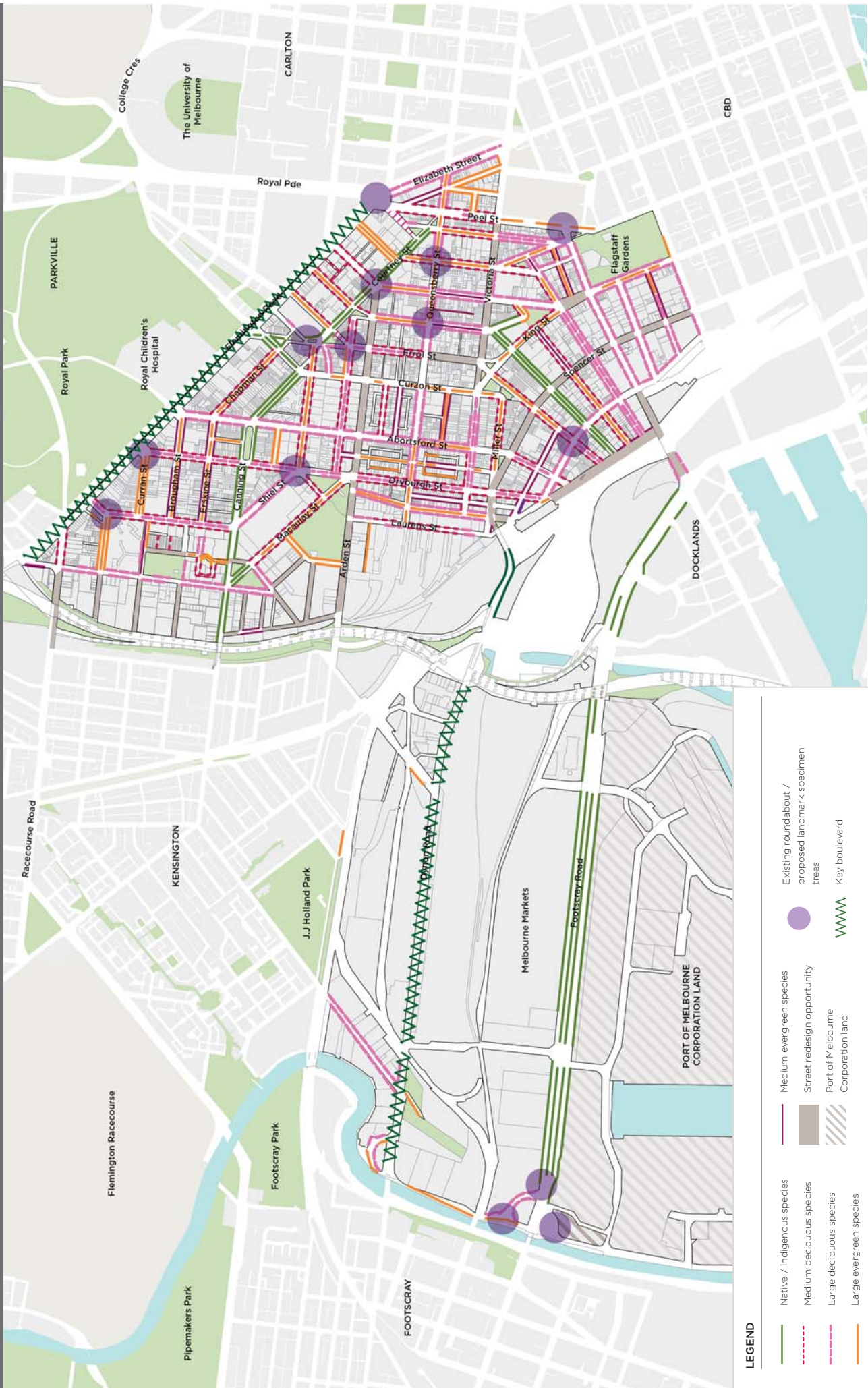


10-year planting plan: New and replacement planting is to occur across North & West Melbourne.



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.

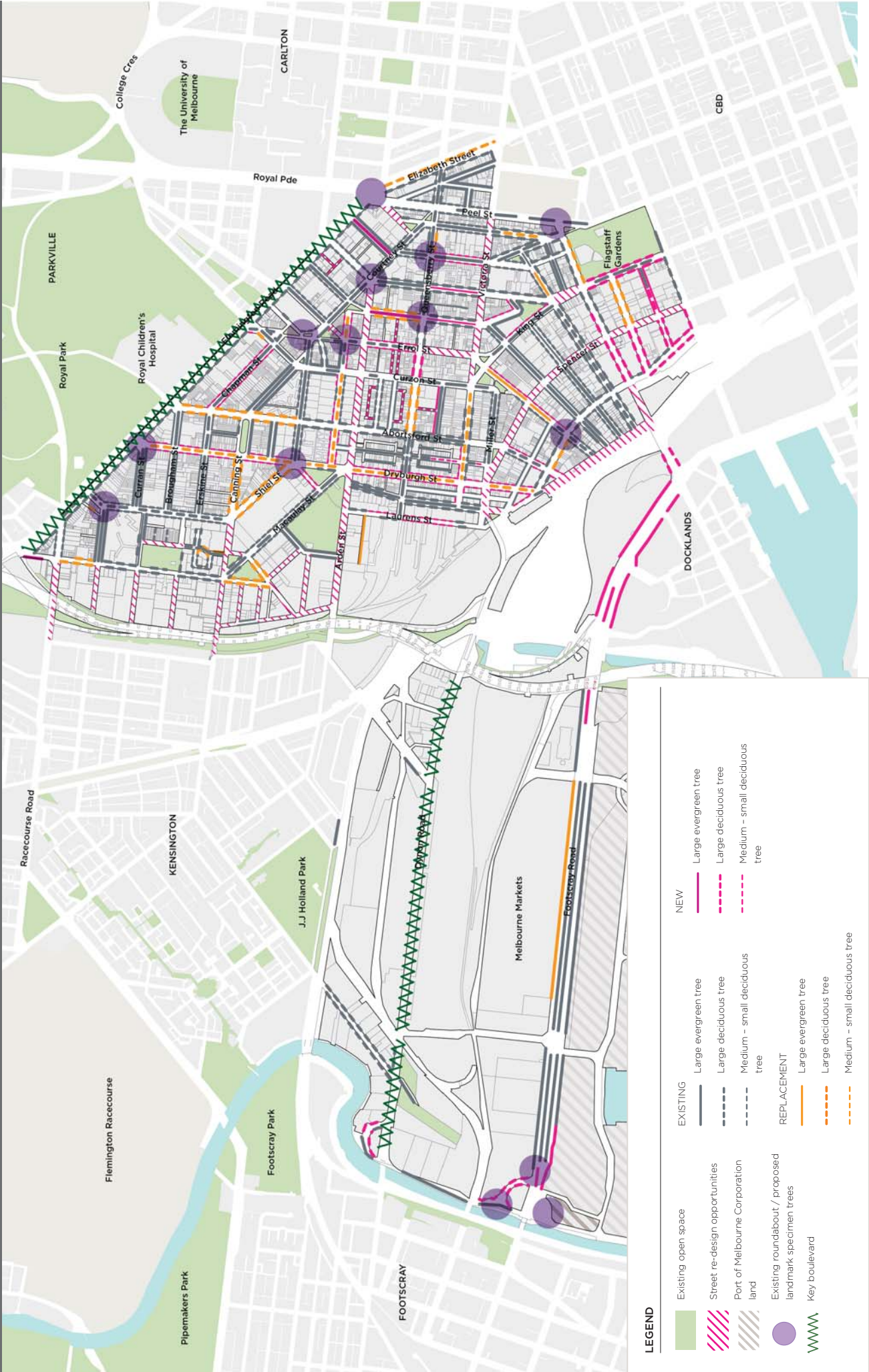
**MAP 8: LONG TERM PLANTING PLAN**



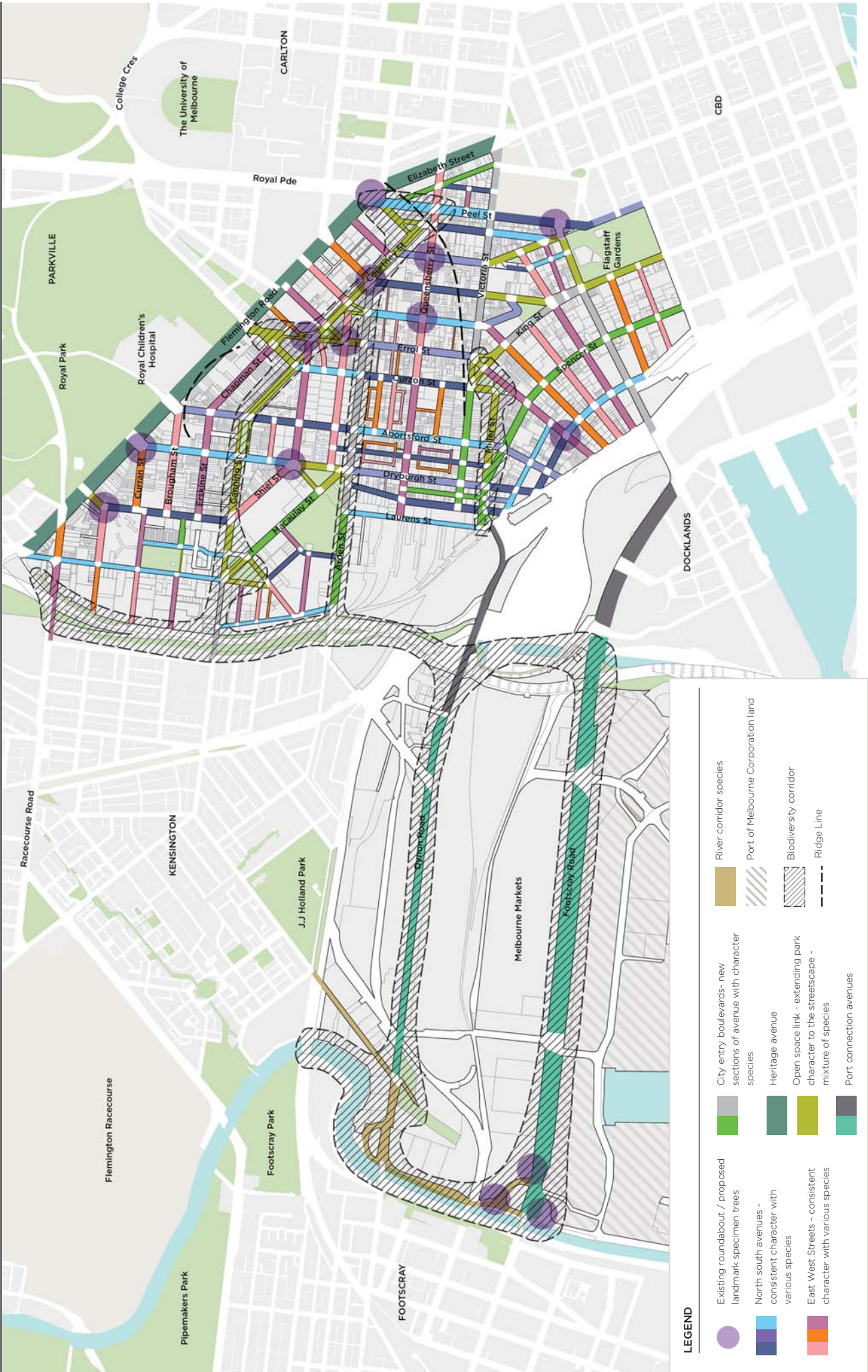
**LEGEND**

- Native / indigenous species
- Medium deciduous species
- Large deciduous species
- Large evergreen species
- Medium evergreen species
- Street redesign opportunity
- Port of Melbourne Corporation land
- Existing roundabout / proposed landmark specimen trees
- Key boulevard

**MAD 9: 10-YEAR PLANTING PLAN**



**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 North & West Melbourne, Guiding Principles and Planting Plan. Elms and planes are key genera within North & West Melbourne, 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 North & West Melbourne'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 North & West Melbourne Trees (Limited New Plantings)

*Corymbia* spp., Gums  
*Eucalyptus* spp., Eucalypts  
*Platanus* spp., Plane  
*Ulmus* spp., Elm

## Large Trees for Streets

*Cinnamomum camphora*, Camphor laurel  
*Eucalyptus sideroxylon*, Red iron bark  
*Ficus rubiginosa*, Rusty fig  
*Ficus platyphloia*, Rock fig  
*Flindersia australis* (trial), Crow's ash

## Deciduous

*Celtis australis*, European nettle tree  
*Fraxinus pennsylvanica*, Green ash  
*Fraxinus oxycarpa* 'Raywood', Claret ash  
*Metasequoia glyptostroboides* (trial), Dawn redwood  
*Quercus* spp., Oaks  
*Tipouana tipou* (trial), Rosewood  
*Toona ciliata* (trial), Australian red cedar

## Medium to Small Trees for Streets

**Evergreen**  
*Afrocarpus falcatus* (trial), Sickle-leaved yellowwood  
*Buckinghamia celsissima*, Ivory curl tree  
*Callodendron capense*, Cape chestnut

*Elaeocarpus reticulatus*, Blueberry ash  
*Eucalyptus cinerea*, Argyle apple  
*Eucalyptus leucoxylon* spp.  
*Megalocharpa*, Yellow gum  
*Brachychiton roseus*, Flame tree  
*Stenocarpus sinuatus*, Firewheel tree  
*Schinus terabinthifolius* (trial), Broad-leaf pepper tree

## Deciduous

*Albizia julibrissin* (trial), Persian silk-tree  
*Catalpa bignonioides*, Catalpa  
*Cercis siliquastrum*, Judas tree  
*Corylus colurna*, Turkish hazel  
*Gleditsia tricanthos*, Honey locust  
*Koelhueteria bipinnata*, Chinese flame-tree  
*Pistacia chinensis*, Chinese pistachio  
*Phellodendron amurense* (trial), Amur cork tree  
*Sapindus sebiferum*, Chinese tallow tree  
*Sophora japonica* (trial), Pagoda tree

## Large Feature Trees

**Evergreen**  
*Afrocarpus falcatus*, Yellowwood  
*Angophora Floribunda*, Rough barked apple  
*Araucaria* spp.  
*Eucalyptus camaldulensis*, River red gum  
*Eucalyptus leucoxylon* spp. *Connata*, Yellow gum  
*Eucalyptus melliodora*, Yellow box

*Ficus macrophylla*, Moreton Bay fig  
*Ficus rubiginosa*, Rusty fig  
*Lithocarpus densiflorus* (trial), tanoak  
*Phellodendron amurense* (trial), amur cork tree  
*Pinus* spp.  
*Podocarpus elatus*, Plum pine  
*Quercus agrifolia*, Coast live oak  
*Quercus virginiana*, Californian live oak  
*Schinus molle*, Peppercorn

## Medium to Small Feature Trees

*Acacia implexa*, Lightwood oak  
*Allocasuarina verticillata*, drooping she-oak  
*Banksia marginata*, silver banksia  
*Banksia serrata*, saw banksia  
*Callitris glaucochylla*, White cypress pine  
*Callistemon viminalis*  
*Hakea francisiana*  
*Hakea bucculenta*  
*Melaleuca ericifolia*, Macadamia integrifolia, Macadamia nut  
*Angophora hispida*, Dwarf apple  
*Brachychiton acerifolia*, Illawarra flame tree

## 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](mailto: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](mailto: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 [treeplanning@melbourne.vic.gov.au](mailto:treeplanning@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 [treeplanning@melbourne.vic.gov.au](mailto:treeplanning@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](http://melbourne.vic.gov.au)



## HOW TO CONTACT US

### Online:

[melbourne.vic.gov.au](http://melbourne.vic.gov.au)

Telephone: 03 9658 9658

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

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)

### In person:

Melbourne Town Hall  
- Administration Building  
120 Swanston Street, Melbourne

7.30am to 5pm, Monday to Friday  
(Public holidays excluded)

### In writing:

City of Melbourne  
GPO Box 3603  
Melbourne VIC 3001  
Australia

Fax: 03 9654 4854

**MELBOURNE.VIC.GOV.AU**



# KENSINGTON URBAN FOREST

## PRECINCT PLAN 2014 - 2024



FINAL  
DRAFT

# KENSINGTON URBAN FOREST

## PRECINCT PLAN 2014 - 2024

### 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



*Aaron Wood*  
**Cr Aaron 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?

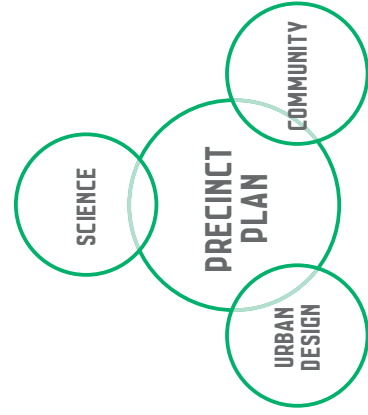
The urban forest comprises all of the trees and other vegetation – and the soil and water that supports it – within the municipality. It incorporates vegetation in streets, parks, gardens, plazas, campuses, river and creek embankments, wetlands, railway corridors, community gardens, green walls, balconies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

### 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.

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.

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 Melbourne 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 to 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* is being updated to strategically manage Melbourne's water catchment. In the meantime, we have implemented numerous water sensitive urban design projects to capture and store

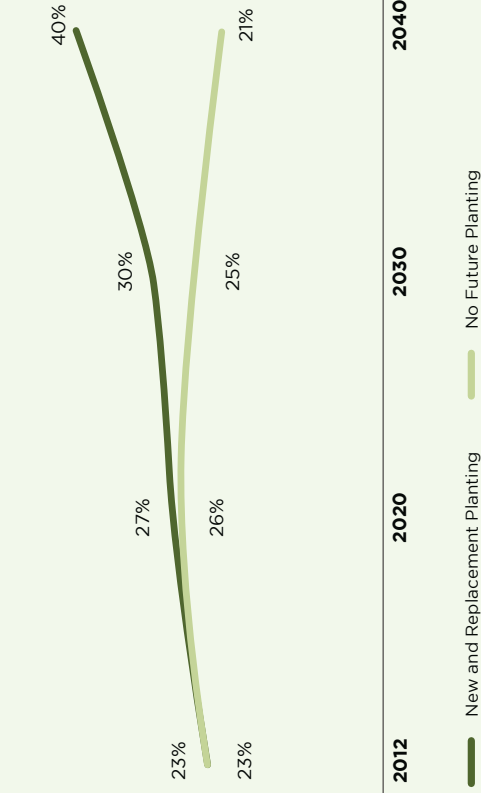
water that would otherwise go down the drain. This water is being used to water the vegetation in our urban landscapes.

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?

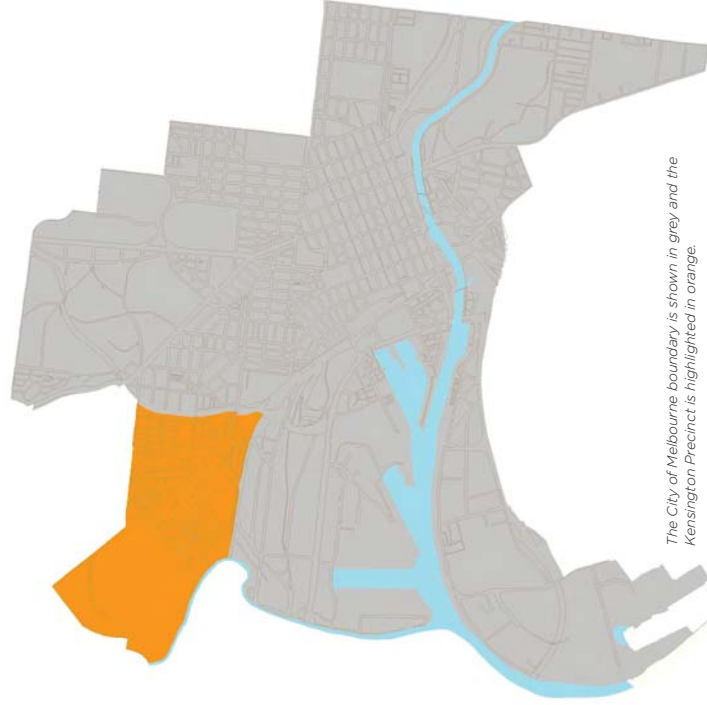
The precinct plans will help to guide implementation of the urban forest strategy in Melbourne's streets. The information provided in the plans will direct the annual tree planting program to achieve urban forest strategy objectives, protect and enhance neighbourhood character, and to prioritise works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

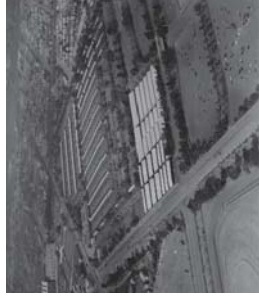
### Kensington character

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 Maribymong 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.

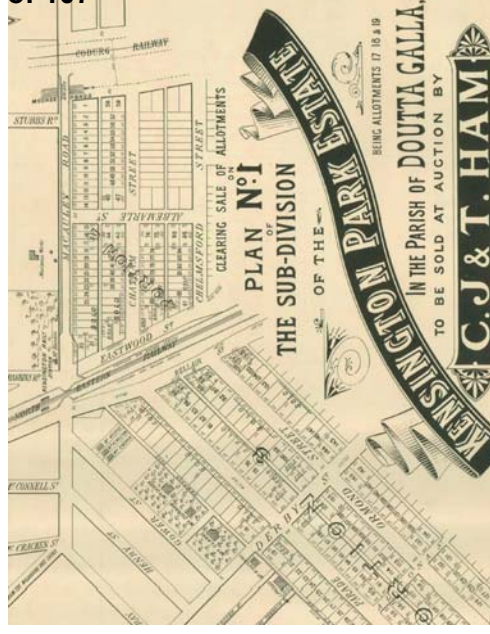
The Macaulay Road shopping precinct offers a lively retail and community hub with a strong sense of "urban village". Kensington contains a few wide main streets, some of which provide opportunities for central medians with trees. Most of the local streets, however, are narrower with narrow footpaths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

Kensington's urban forest character is strongly influenced by the peppercorns, ash and native



Newmarket Stock Saleyards, 1925 ca - 1940 ca. Charles Daniel Pratt, Airsop, 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.

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.



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



*Images selected by the community as representing a preferred future for North West Melbourne urban forest that includes colour, shape, layers, diversity and canopy*

## 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 (e.g., sense of calm, soothing etc.)
- Social cohesion
- Cultural (e.g., indigenous trees, nativeness, connection to water)
- Wind mitigation
- Water capture and storage

## SHAPE, DIVERSITY AND LAYERS



**COMMUNITY PRIORITIES  
CONTINUED**

**STREETSCAPE**



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



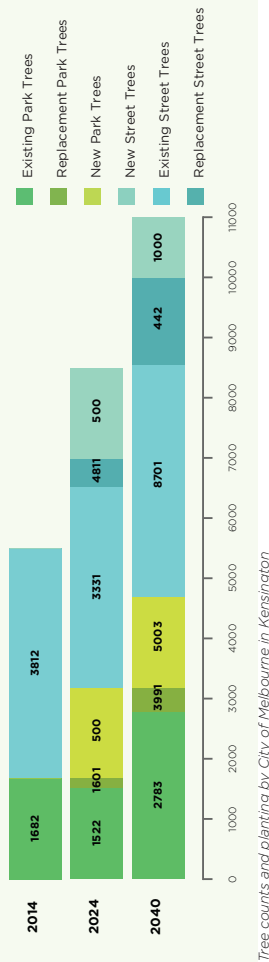
# KENSINGTON URBAN FOREST IN 2014 AND ITS PROJECTED FUTURE

## TREE HEALTH (ULE) – PUBLIC REALM



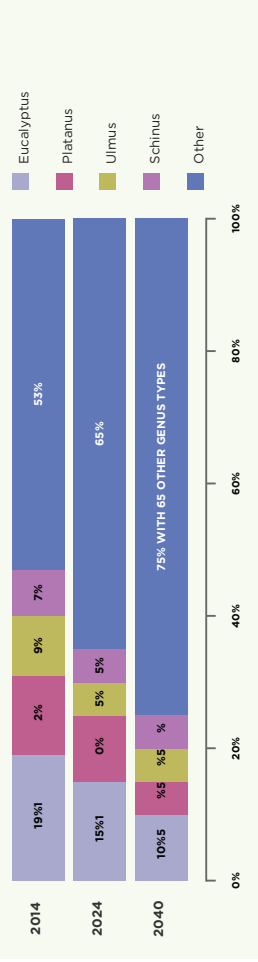
Tree counts for Kensington, categorised by useful life expectancy (ule) in years

## TREES – PUBLIC REALM



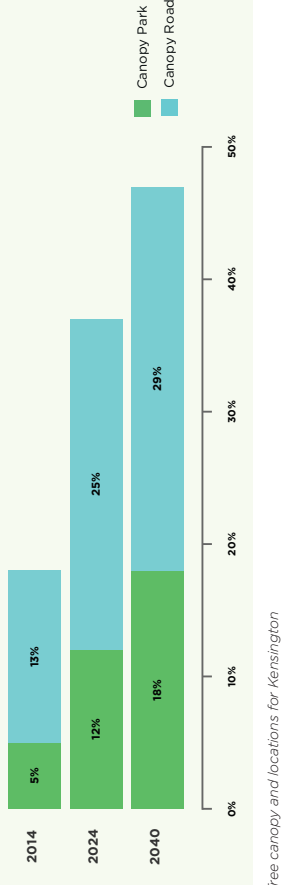
Tree counts and planting by City of Melbourne in Kensington

## DIVERSITY (BY GENUS) – PUBLIC REALM



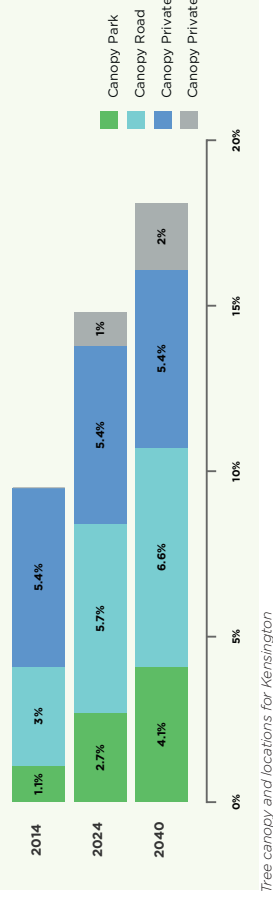
Main genus types for Kensington

## CANOPY – PUBLIC REALM



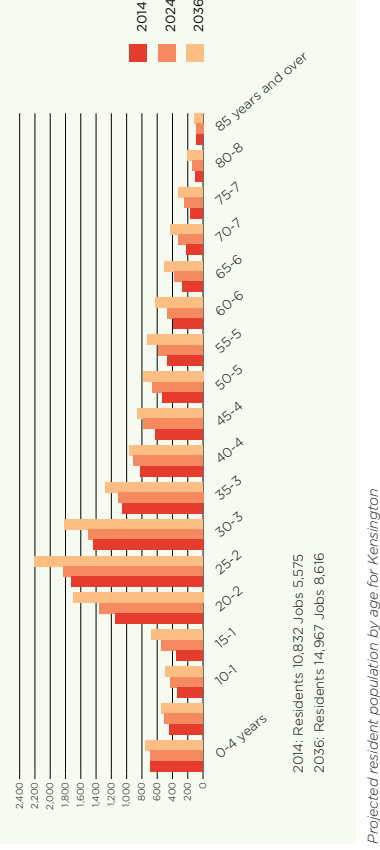
Tree canopy and locations for Kensington

## CANOPY – ENTIRE PRECINCT



Tree canopy and locations for Kensington

## PRECINCT POPULATION DISTRIBUTION – RESIDENTS



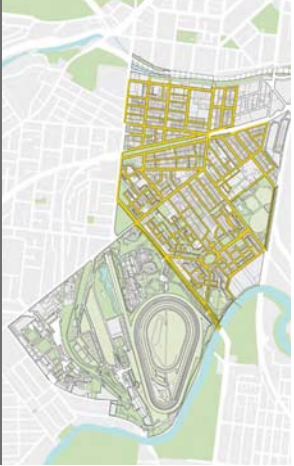
Projected resident population by age for Kensington

# 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. Unforseen 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 Unforseen 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

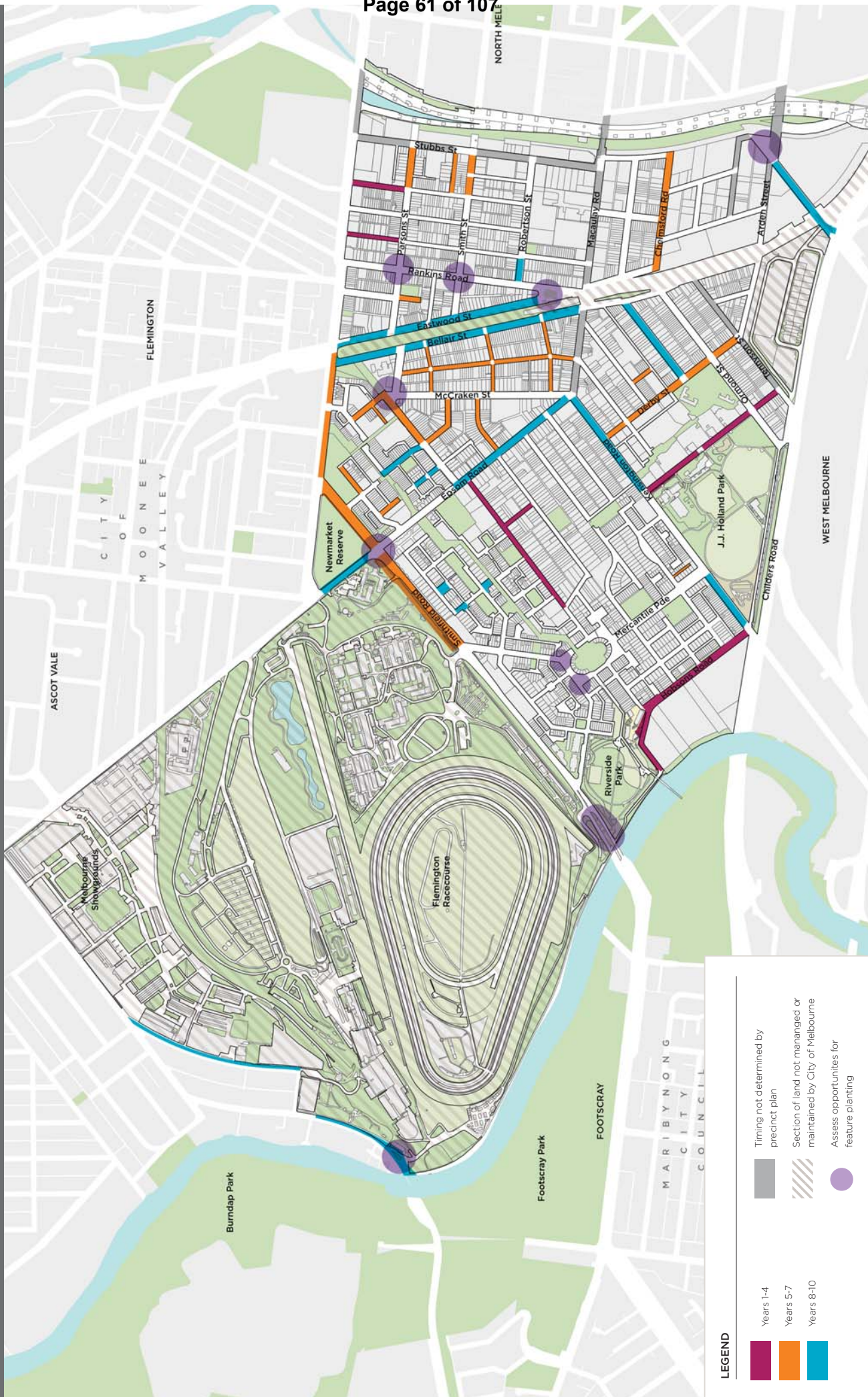
Review Streetscape objectives  
Review What should change (Map 7)  
Review Planting plans (Map 8, 9 & 10)  
Review species palette



### Implement planting

Produce streetscape design options  
Consult with residents  
Plant

**MAP 1: PLANTING PRIORITIES**



# PRIORITISING TREE PLANTING IN STREETS

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.

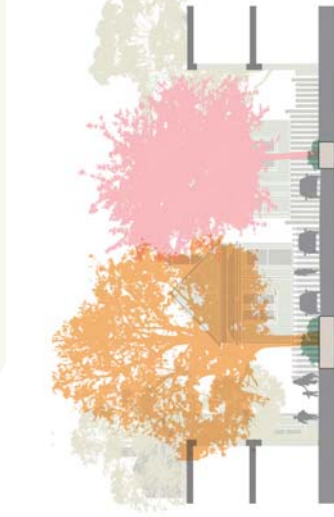
A limited number of streets have nature strips or centre medians that provide a planting opportunity. Given the limited sites available for tree planting, the largest tree appropriate for the site should be selected to maximise the canopy and shade potential.

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.

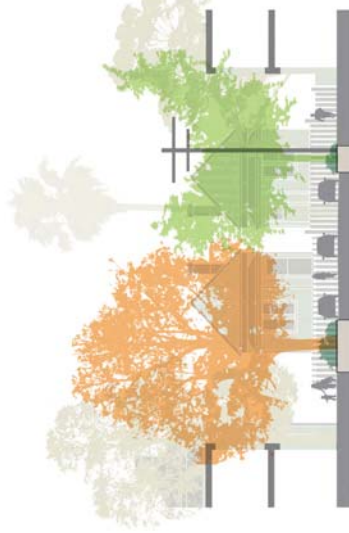
Low voltage overhead wires are present throughout Kensington streets in the older residential areas. High voltage wires are also present on many streets and limit the potential for large, natural canopy growth. Where medians

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.

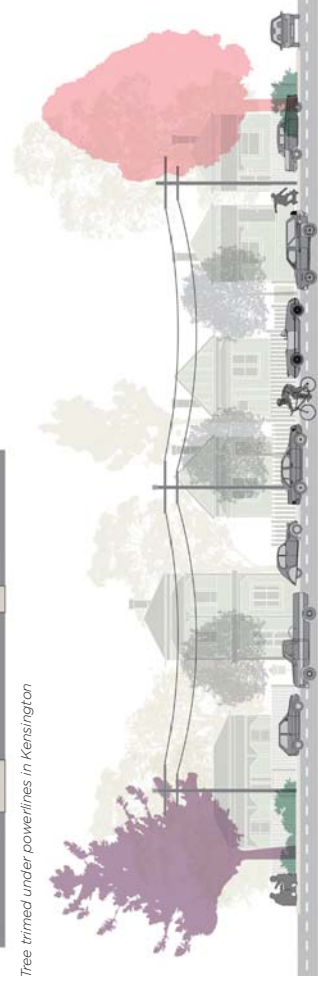
Outcomes that improve the pedestrian environment should always be prioritised. Opportunities for understorey planting with a biodiversity and pedestrian environment objective should be considered where possible.



*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 CONTINUED

## 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:

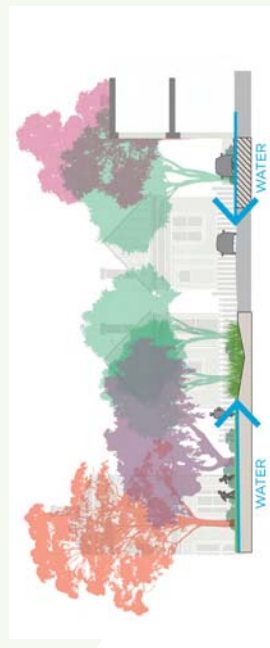
- Establish a hierarchy of streets/paths most important to plant with continuous avenues and limit use elsewhere;
- Identify breaks in avenues at logical points along the length of streets, where species may change;
- Use asymmetrical treatments along some streets (e.g., local streets where there are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

## 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

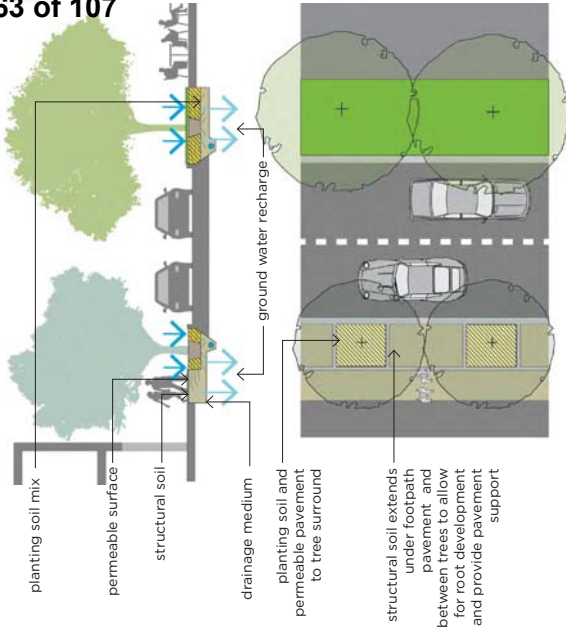
In the higher elevation portions of Kensington the native soils are heavy textured clay soils derived from deeply weathered basalt.



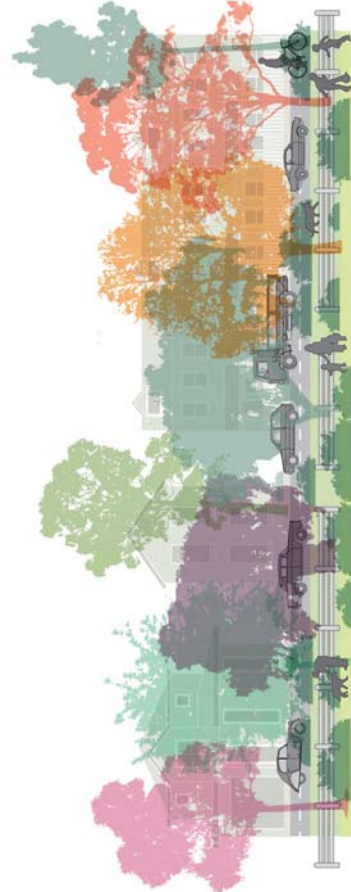
Water infiltration, permeable paving and structural soil or cells, provide opportunities to grow larger, healthier trees in paved areas.

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 Cooee 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.



Improving below ground growing conditions for trees in streets



Existing biodiversity corridor along stockyard route

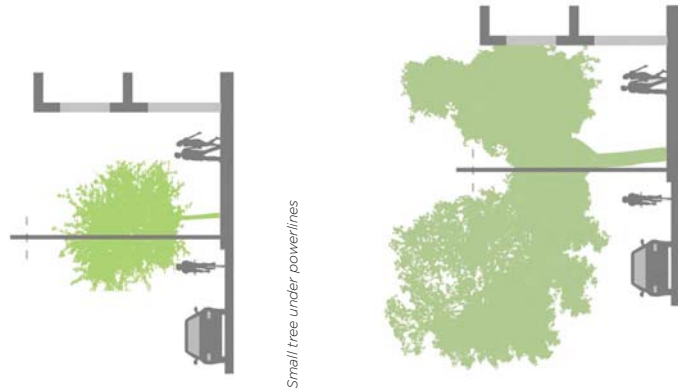
# GUIDING PRINCIPLES AND CONSIDERATIONS FOR TREE PLANTING CONTINUED

## 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 overhead 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 ##)



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 ##&##)





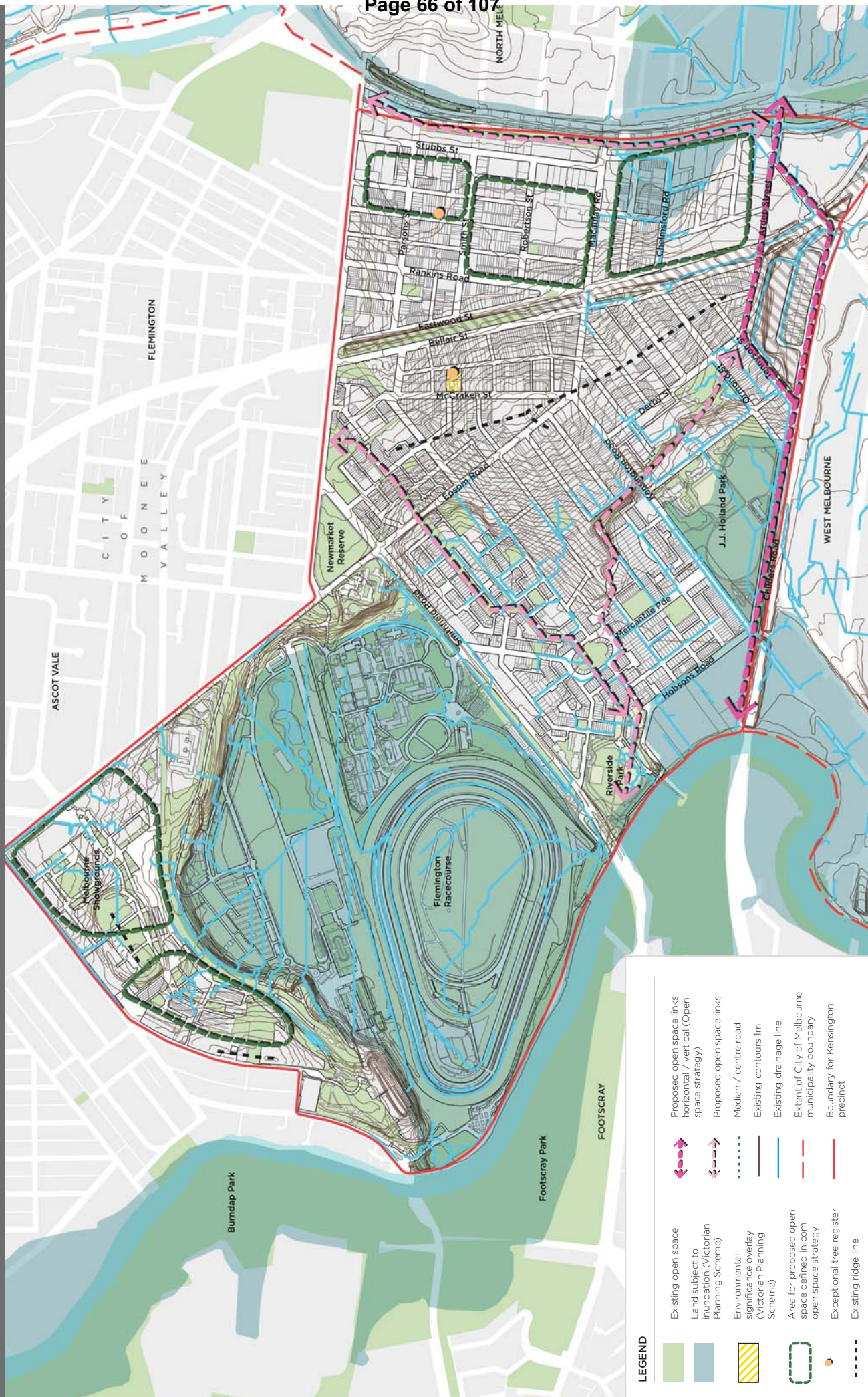
MAP 2: KEY PLANTING CONSTRAINTS



**LEGEND**

- Existing tram line with tram stop
- Low voltage powerlines
- High saline levels in ground
- Section of land not managed and maintained by City of Melbourne
- Future Melbourne Metro
- Existing Railway Line
- Storm water collection point
- Proposed East West link
- Large Scale co-generation plant
- Local co-generation plant
- Water treatment plant
- High saline levels in ground
- Central Services Hub (CHS)
- Extent of City of Melbourne municipality boundary
- Boundary for Kensington precinct

MAP 3: NATURAL AND OPEN SPACE CONTEXT



**MAP 4: STRATEGIC CONTEXT**



**LEGEND**

	Existing open space		Kensington town hall
	Heritage listed open space		Existing bike lane
	Heritage listed property		Proposed urban links diagonal (Open space strategy)
	Existing industrial zone		Existing roundabout
	Proposed laneway (Arden Macaulay Structure Plan)		Proposed pedestrian bridge (Arden Macaulay Structure Plan)
	Arden-Macaulay Structure Plan expected implementation from 2011		Boundary for Kensington precinct
	Arden-Macaulay Structure Plan boundary		Extent of City of Melbourne municipality boundary

# 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 residential 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.

### Stock 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

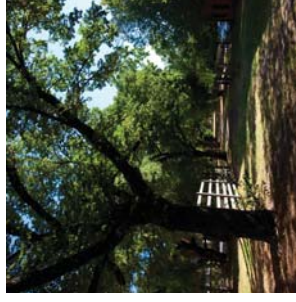
On the southern edge of Kensington, this precinct extends from the natural embankment along the north edge, down to the Maribyrnong River and the railway line. A series of smaller open spaces provide connections between the river corridor and Holland Park which provides a large recreation open space. 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.



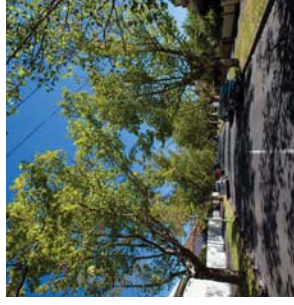
Flemington Racecourse precinct



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-PREINCTS



# 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 understory planting.

Species choices for understory planting should factor in light conditions, competition with existing plantings, and maintenance requirements related to irrigation and access.

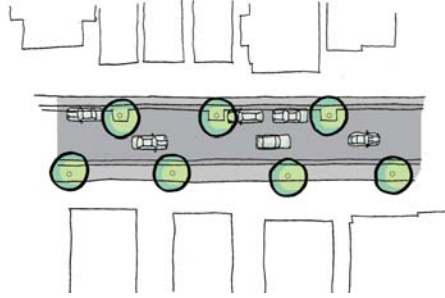
(see adjacent images for examples of canopy cover and biodiversity outcomes)

## Map 7: What should stay and what should change?

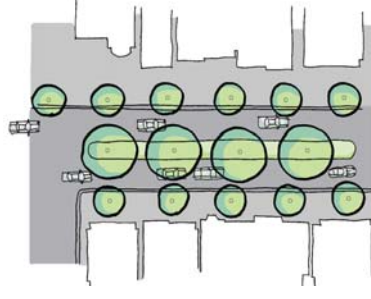
Planes, elms, gums (*Corymbias*), eucalypts and peppercoms are core genera within Kensington's urban forest today. That is not proposed to change, however their dominance will be reduced by using alternatives for new plantings and, in the locations defined on this map, by breaking up spatial continuity. 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.

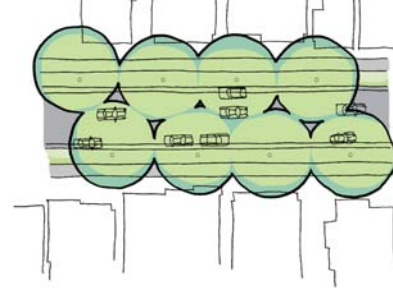
Minimum canopy cover of 20%



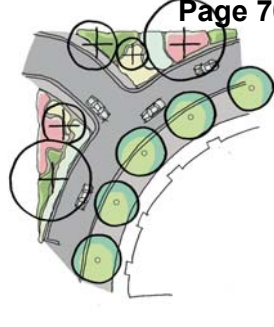
Minimum canopy cover of 20 - 40%



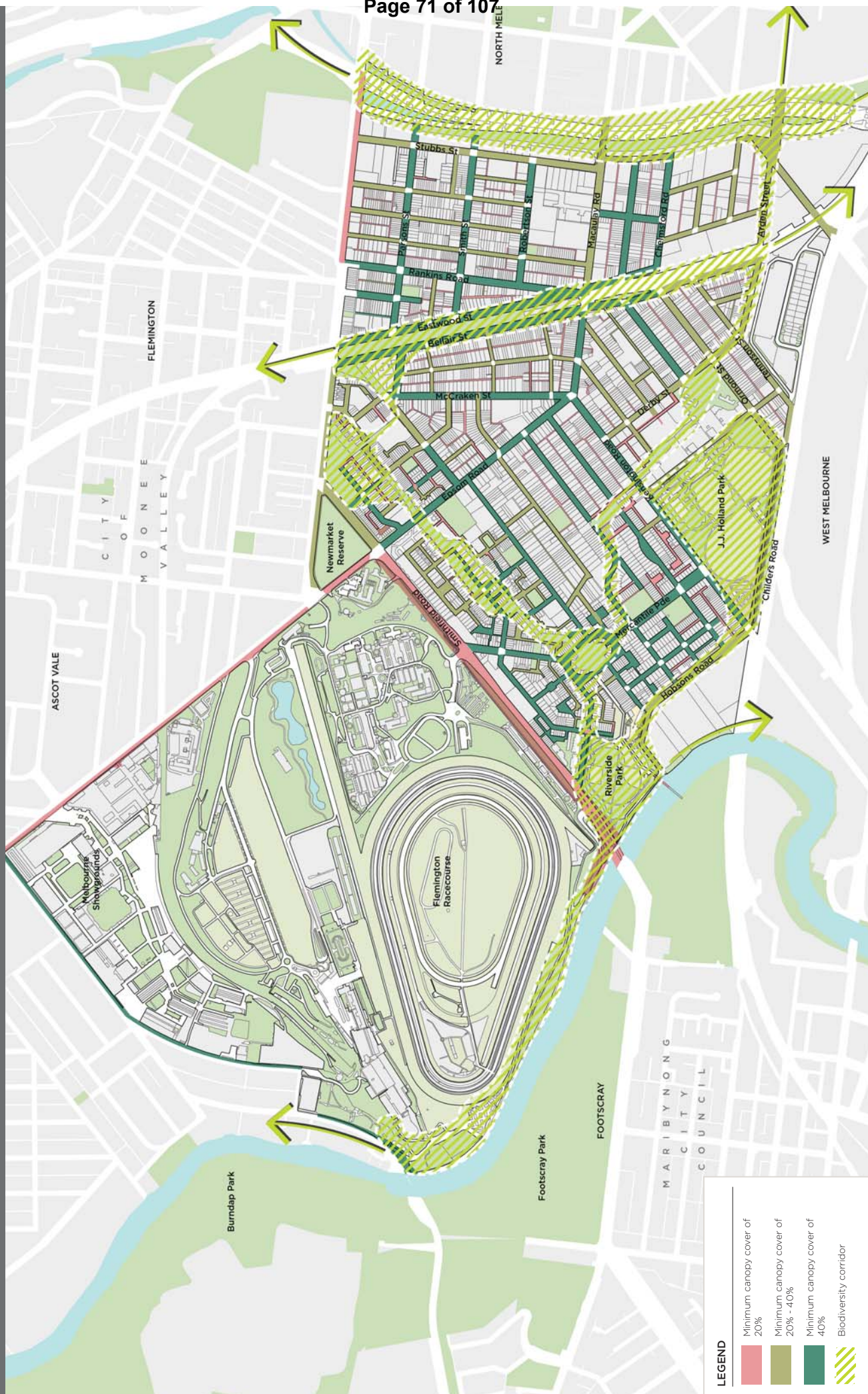
Minimum canopy cover of 40%



Biodiversity objective maximise canopy



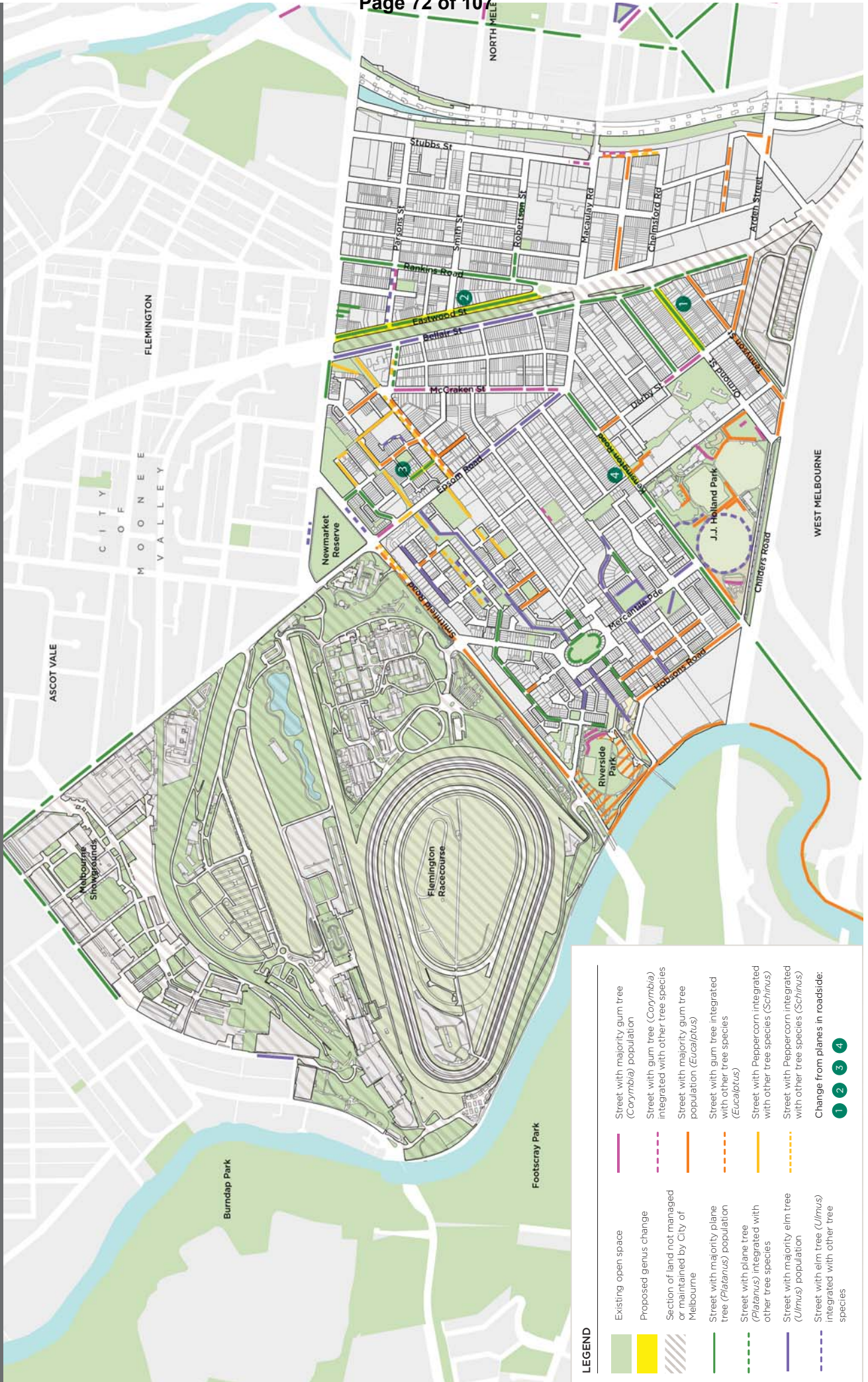
MAP 6: CANOPY COVER AND BIODIVERSITY OUTCOMES



**LEGEND**

- Minimum canopy cover of 20%
- Minimum canopy cover of 20% - 40%
- Minimum canopy cover of 40%
- Biodiversity corridor

MAP 7: WHAT SHOULD STAY AND WHAT SHOULD CHANGE?



**LEGEND**

	Existing open space		Street with majority gum tree ( <i>Corymbia</i> ) population
	Proposed genus change		Street with gum tree ( <i>Corymbia</i> ) integrated with other tree species
	Section of land not managed or maintained by City of Melbourne		Street with majority gum tree population ( <i>Eucalyptus</i> )
	Street with majority plane tree ( <i>Platanus</i> ) population		Street with gum tree integrated with other tree species ( <i>Eucalyptus</i> )
	Street with plane tree ( <i>Platanus</i> ) integrated with other tree species		Street with Peppercorn integrated with other tree species ( <i>Schinus</i> )
	Street with majority elm tree ( <i>Ulmus</i> ) population		Street with Peppercorn integrated with other tree species ( <i>Schinus</i> )
	Street with elm tree ( <i>Ulmus</i> ) integrated with other tree species		Change from planes in roadsides: 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 topology 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 Maribyrnong 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.

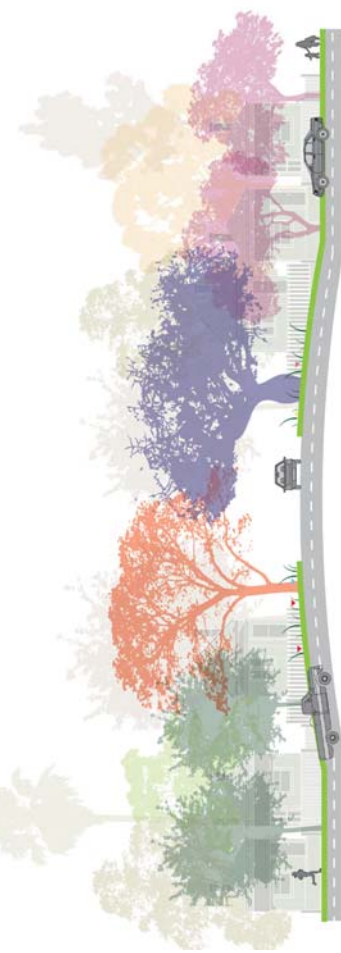
These illustrations provide an example of how these three aspects would apply in a particular street.



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

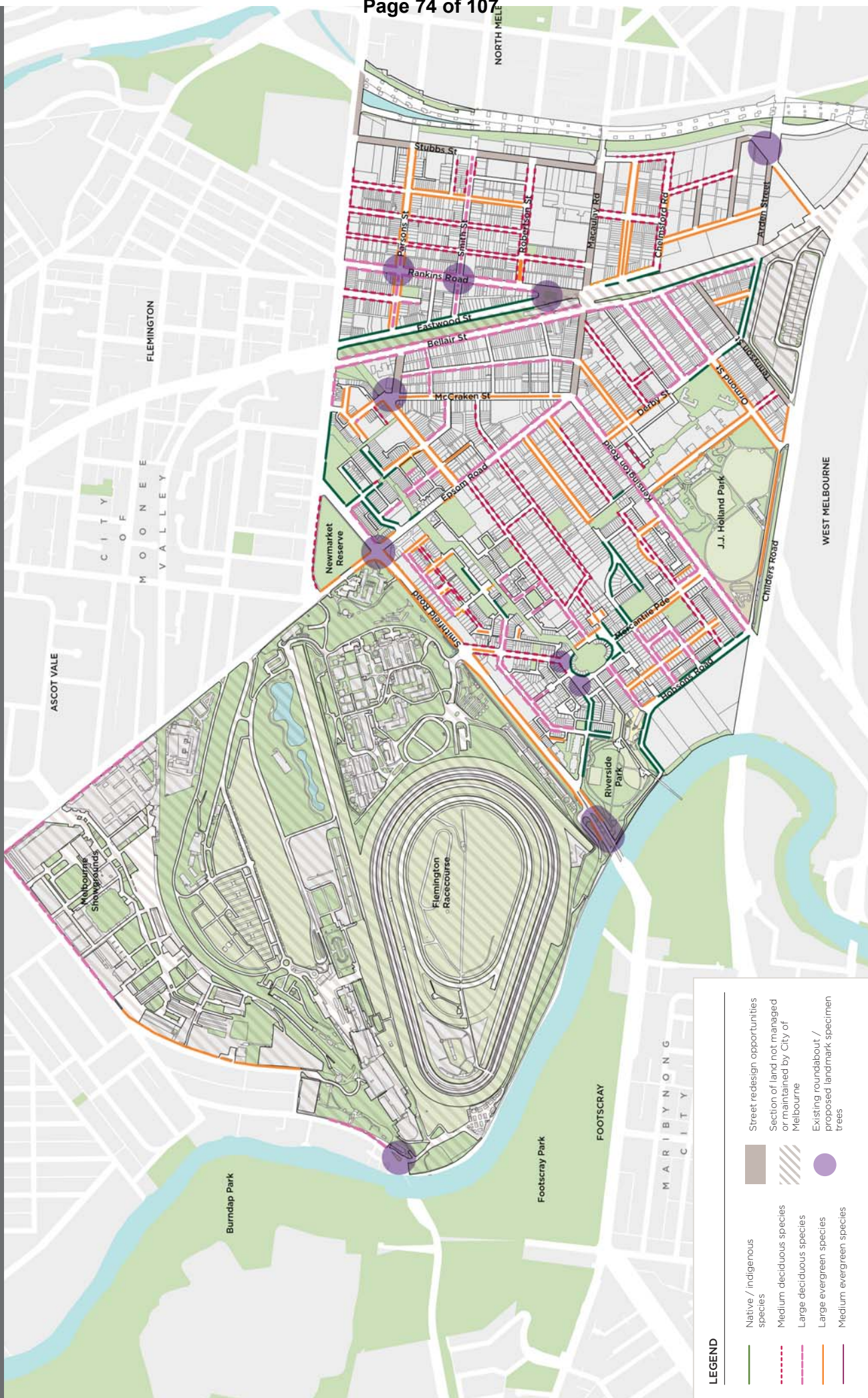


10-year planting plan: New and replacement planting is to occur across Kensington



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.

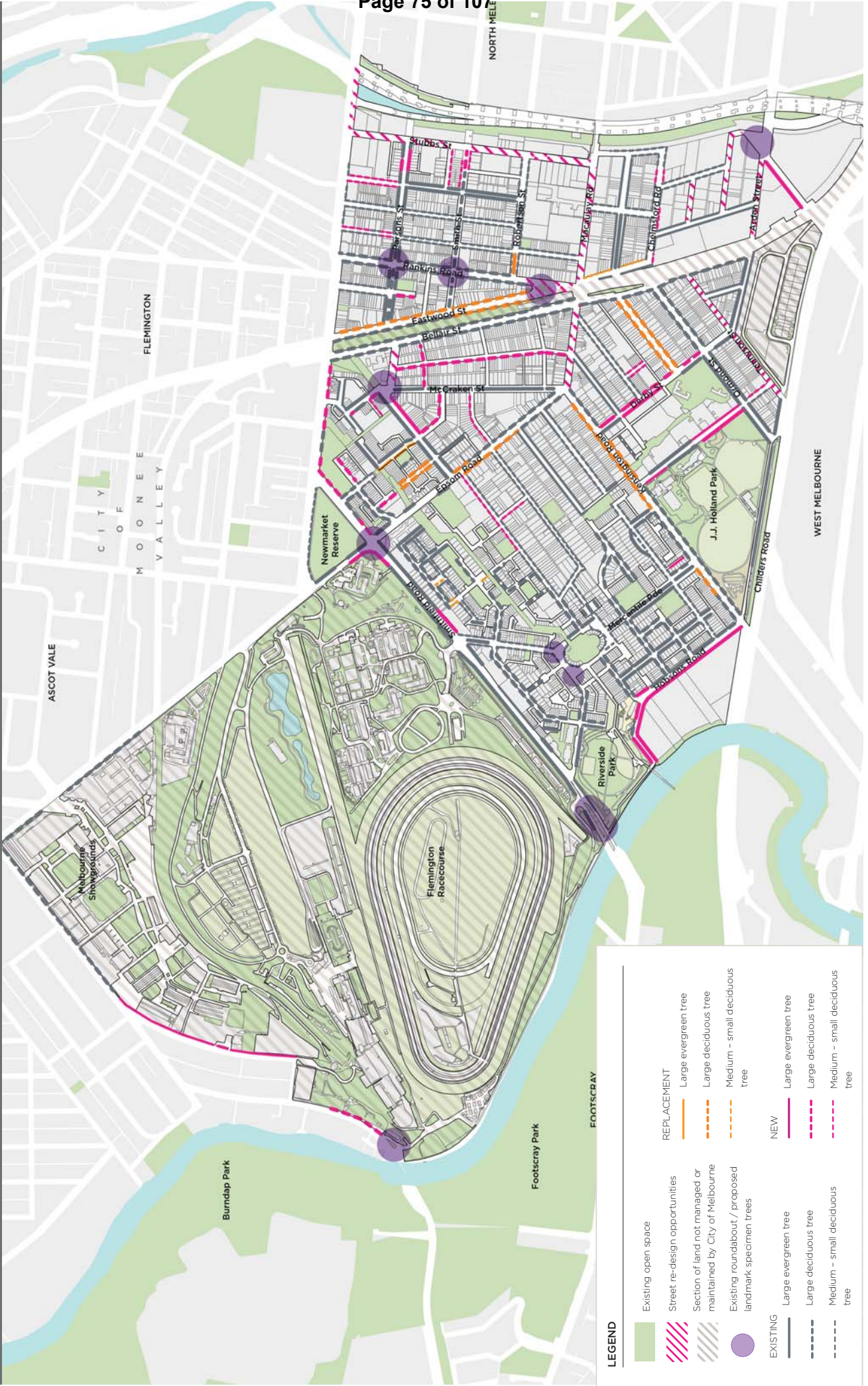
MAP 8: LONG TERM PLANTING PLAN



**LEGEND**

- Native / indigenous species
- - - Medium deciduous species
- - - Large deciduous species
- Large evergreen species
- Medium evergreen species
- Street redesign opportunities
- Section of land not managed or maintained by City of Melbourne
- Existing roundabout / proposed landmark specimen trees

**MAP 9: 10-YEAR PLANTING PLAN**



**LEGEND**

- Existing open space
- Street re-design opportunities
- Section of land not managed or maintained by City of Melbourne
- Existing roundabout / proposed landmark specimen trees

**REPLACEMENT**

- Large evergreen tree
- Large deciduous tree
- Medium - small deciduous tree

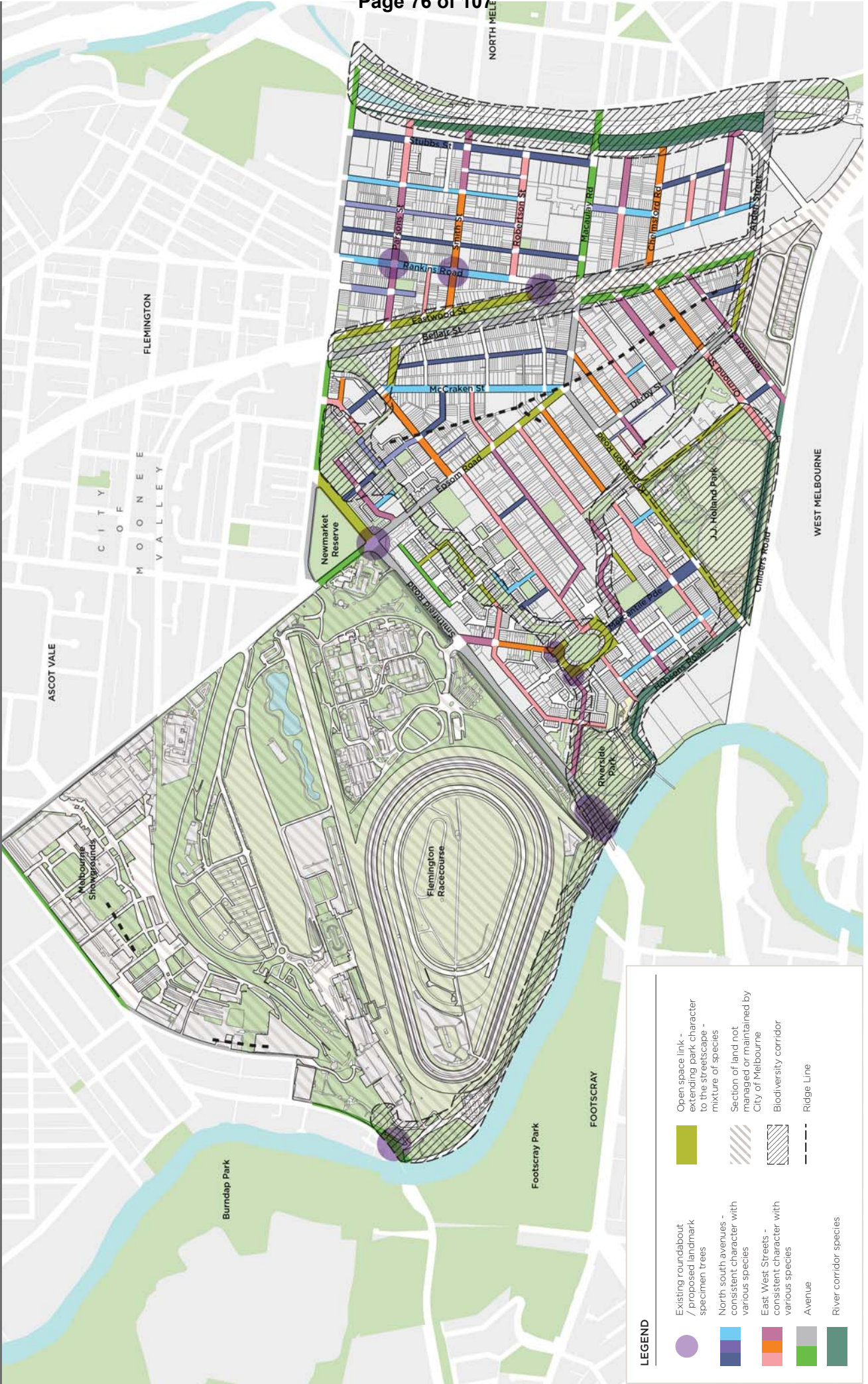
**NEW**

- Large evergreen tree
- Large deciduous tree
- Medium - small deciduous tree

**EXISTING**

- Large evergreen tree
- Large 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 platyphoba*, Rock fig  
*Findleria australis*, Crow's ash  
*Eucalyptus polyanthemus*, Red box  
*Eucalyptus melliodora*, Yellow box  
*Eucalyptus sideroxylon*, Red ironbark

## Deciduous

*Celtis australis*, Hackberry  
*Fraxinus pennisylvanica*, Green ash  
*Quercus* spp., Oak  
*Tilia 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  
*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  
*Tristaniaopsis laurina*, Kanooka  
*Waterhousea floribunda*, Weeping lilly pilli

## Deciduous

*Cercis siliquastrum*, Judas tree  
*Gleditsia tricanthos*, Honey locust tree  
*Koeluteria bipinnata*, Chinese flame tree  
*Pistacia chinensis*, Chinese pistachio  
*Sapulum 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  
*Findleria 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 glaucochylla*, 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](mailto:melbourne.vic.gov.au/urbanforest)

### 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 [treeplanning@melbourne.vic.gov.au](mailto:treeplanning@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 [treeplanning@melbourne.vic.gov.au](mailto:treeplanning@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](http://melbourne.vic.gov.au)

### 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](mailto:urbanforest@melbourne.vic.gov.au)

## HOW TO CONTACT US

### Online:

[melbourne.vic.gov.au](http://melbourne.vic.gov.au)

Telephone: 03 9658 9658

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

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**

### In person:

Melbourne Town Hall  
- Administration Building  
120 Swanston Street, Melbourne

7.30am to 5pm, Monday to Friday  
(Public holidays excluded)

### In writing:

City of Melbourne  
GPO Box 3603  
Melbourne VIC 3001  
Australia

Fax: 03 9654 4854

# DOCKLANDS URBAN FOREST

## PRECINCT PLAN 2014 - 2024



FINAL  
DRAFT

# DOCKLANDS URBAN FOREST

## PRECINCT PLAN 2014 - 2024

### 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**  
Lord Mayor



**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?

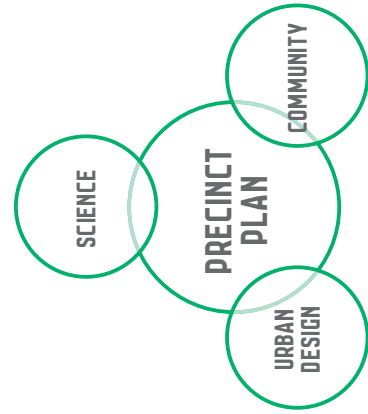
The urban forest comprises all of the trees and other vegetation – and the soil and water that supports it – within the municipality. It incorporates vegetation in streets, parks, gardens, plazas, campuses, river and creek embankments, wetlands, railway corridors, community gardens, green walls, balconies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

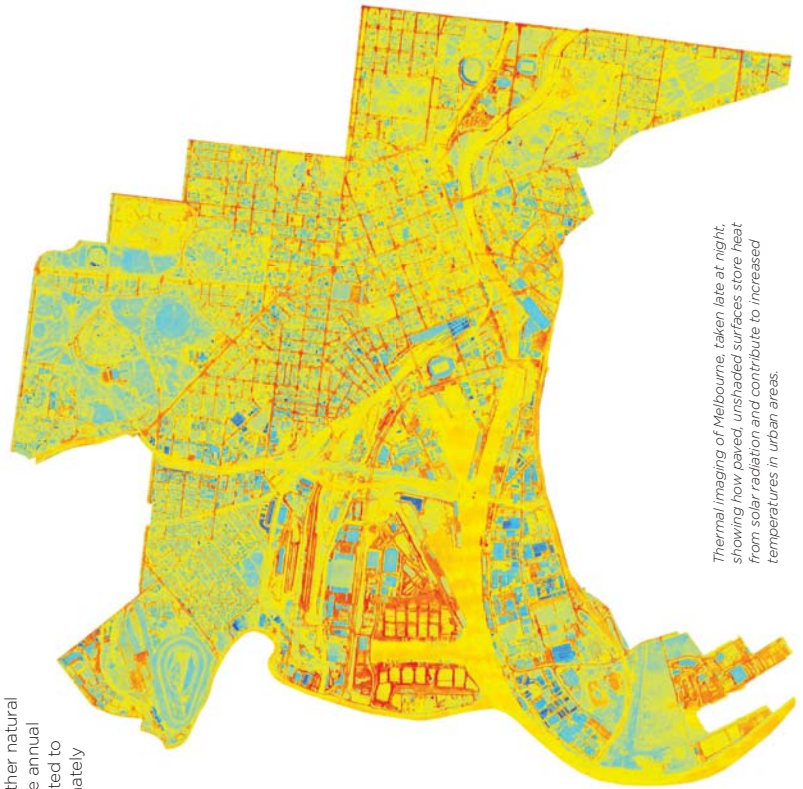
Climate change impacts to human health and wellbeing are a significant concern for our municipality. Climate change science indicates that Melbourne is likely to experience an increase in the frequency and severity of extreme weather events such as heatwaves, drought, and flooding. Heat waves kill more 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.*

### 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.

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.

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 Melbourne 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 to 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* is being updated to strategically manage Melbourne's water catchment. In the meantime, we have implemented numerous water sensitive urban design projects to capture and store

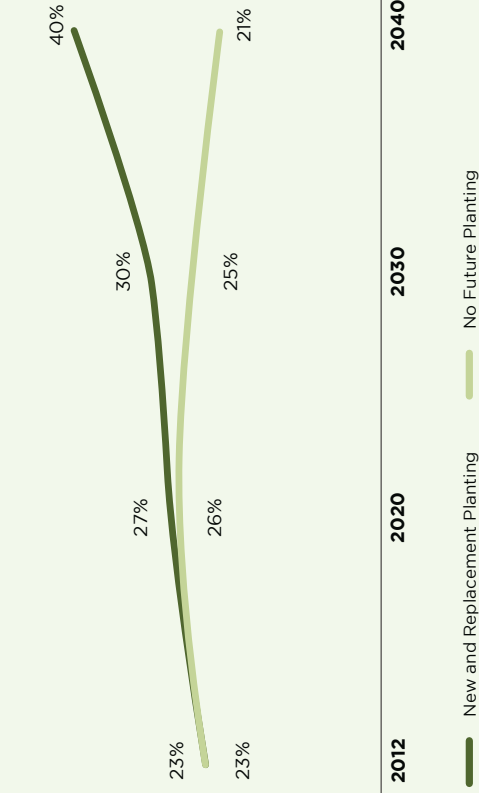
water that would otherwise go down the drain. This water is being used to water the vegetation in our urban landscapes.

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 *Urban Forest Diversity Guidelines* are being 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. The Docklands Community and Place Plan, Docklands Public Realm Plan, the Open Space Strategy, the Harbour Esplanade Master Plan and future development areas strongly influence the future character of the precinct.



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

## THE VISION FOR KENSINGTON URBAN FOREST

**DOCKLANDS' URBAN FOREST WILL BE A MIX OF GLOBAL AND NATIVE SPECIES WITH SEASONAL COLOURS, TEXTURES AND SCENTS THAT COMPLEMENT THE PRECINCT'S CONNECTION TO WATER AND ITS ARCHITECTURE. THE GREEN, LEAFY CANOPY WILL PROVIDE SHADY, SHELTERED SPACES THAT ARE WELCOMING, ACCESSIBLE AND SURPRISING. SUSTAINABLE DESIGN WILL SUPPORT MULTIPLE LAYERS OF PLANTING THAT ATTRACTS BIRDS AND BRINGS NATURE INTO THE DOCKLANDS.**



## 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 doubling of private realm canopy cover to 5% 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 Docklands precinct, the Port of Melbourne, State Government and developer community manage large areas of land that could potentially support greater canopy cover. 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

Docklands was not planted until recently. Prior to settlement, Docklands was part of an estuarine ecosystem and therefore would not have supported tree cover.

The 3,000 trees now in Docklands have predominantly been planted since the first residents moved into Docklands in 2001. The 2008 Melbourne Docklands Tree Strategy had guided species selection within the precinct and this precinct plan.

### Docklands character

The redevelopment of Docklands began 16 years ago. In that time its population has grown to 7,000 residents and 25,000 workers.

Docklands is located where Victoria Harbour, Yarra River and Moonee Ponds Creek intersect resulting

in 7 km of waterfront edge within the precinct. The Docklands Public Realm Plan describes the following future for Docklands:

Docklands will capture the essence of Melbourne's waterways by embracing the Yarra River, Victoria Harbour and Moonee Ponds Creek. Docklands will have a seamless network of welcoming public streets and waterfronts and a well-linked family of diverse public spaces that provide a choice of experiences, activities and journeys, for many people at various times of the day and night throughout the seasons.

Harbour Esplanade forms the central spine of Docklands as the primary destination waterfront, parkland and civic spine of the precinct. Several of the 30 m wide east-west city streets (Collins, Bourke, La Trobe and Dudley Streets) extend across the Spencer Street railway lines, linking the central city to Docklands. Laid across these is a less regular array of new secondary streets in Docklands. Generally, these cross-streets occur at more frequent intervals and are 16-18 m in width.

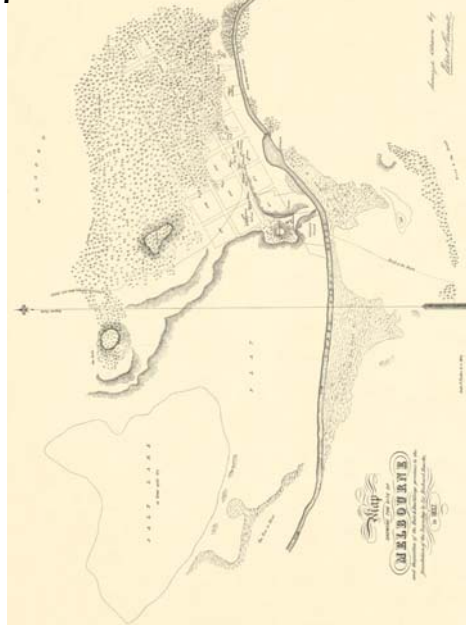
Separating the CBD and Docklands is the rail corridor and a series of at grade and elevated vehicle and pedestrian links extending the Hoddle Grid street layout across to Docklands. Planting on structure is common in Docklands and will increase as decking extends across roads and rail yards, and as the wharfs are further developed. As the remainder of North Wharf is developed in future, this new precinct will be finer grained with a more local character and close connection with the water on this narrow peninsula.

The urban forest has an important role to play in creating welcoming and connected spaces in Docklands. Themes of creating an urban forest that celebrates the precinct's unique waterfront character were prevalent in community engagement.

Docklands urban forest is young and its character is still evolving. The deciduous tree canopy of the Hoddle Grid is continued down the connecting streets. A predominantly native, evergreen character is prevalent throughout the rest of the precinct. A number of difficult planting conditions are encountered in the precinct and a certain amount of trialling is appropriate in order to identify successful species. To achieve the future vision desired by the community, it will be essential that new developments create good planting opportunities, including the provision of adequate soil volume to achieve large canopy tree



Aerial view of Victoria Dock, 1920 - 1939, Museum Victoria



Map showing the site of Melbourne and the position of the huts & buildings previous to the foundation of the township by Sir Richard Bourke in 1837 [cartographic material] / surveyed & drawn by Robert Russell. State Library of Victoria.

# COMMUNITY PRIORITIES

Docklands 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 Docklands' urban forest.

Consultation highlighted that Docklands is a unique part of Melbourne and the urban forest planting should respond to its uniqueness, Australian identity and waterfront connection.

Our work with the Docklands community indicated a preference for trees that would add to the social, cultural and aesthetic value within Docklands as well as providing canopies that would mitigate wind, capture water and foster biodiversity.

## 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 (e.g., sense of calm, soothing etc.)
- Social cohesion
- Cultural (e.g., 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 North West Melbourne urban forest that includes colour, shape, layers, diversity and canopy*

**COMMUNITY PRIORITIES  
CONTINUED**

**STREETSCAPE**

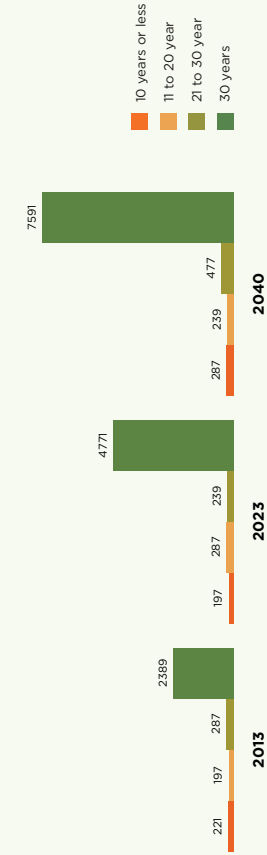


*Kensington community members developing priorities for planting in the precinct. (opposite)*



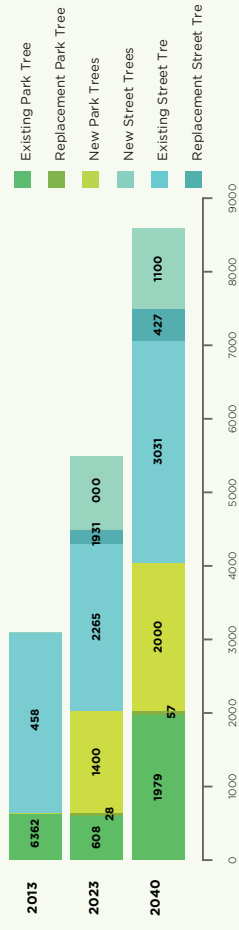
# DOCKLANDS URBAN FOREST IN 2014 AND ITS PROJECTED FUTURE

## TREE HEALTH (ULE) - PUBLIC REALM



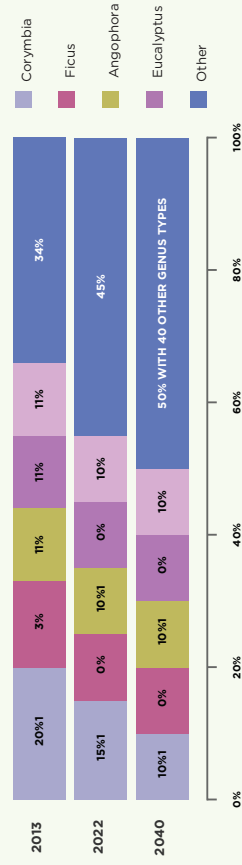
Tree counts for Kensington, categorised by useful life time expectancy (ule) in years

## TREES - PUBLIC REALM



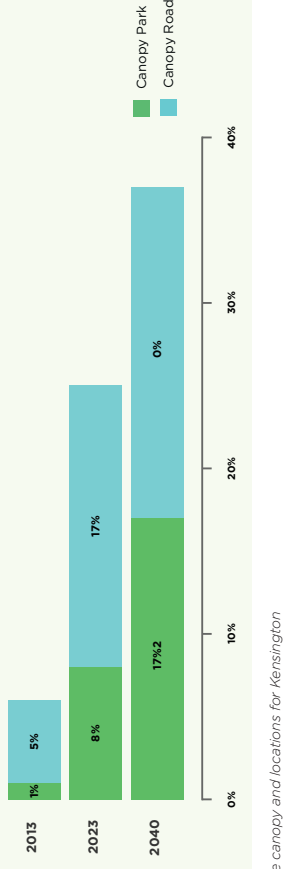
Tree counts and planting by City of Melbourne in Kensington

## DIVERSITY (BY GENUS) - PUBLIC REALM



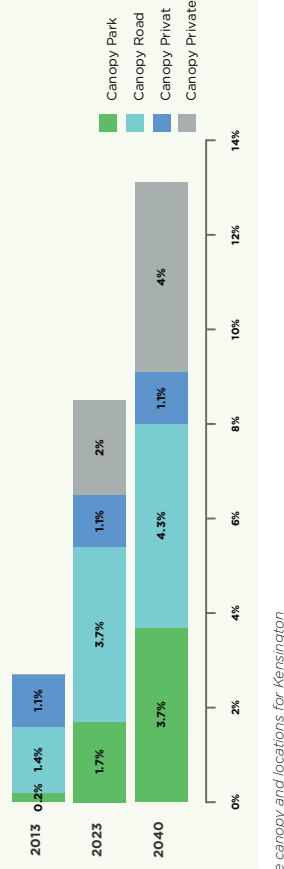
Main genus types for Kensington

## CANOPY - PUBLIC REALM



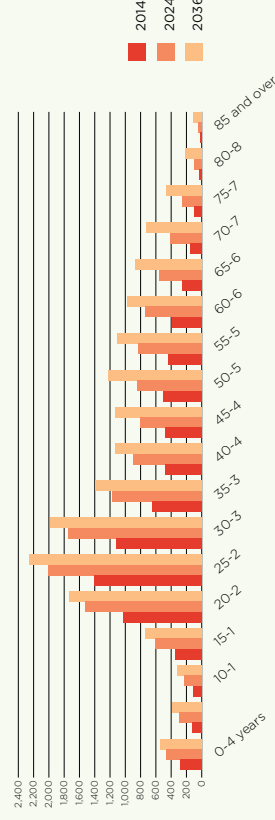
Tree canopy and locations for Kensington

## CANOPY - ENTIRE PRECINCT



Tree canopy and locations for Kensington

## PRECINCT POPULATION DISTRIBUTION - RESIDENTS



Projected resident population by age for Kensington



# 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 Unforsee 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

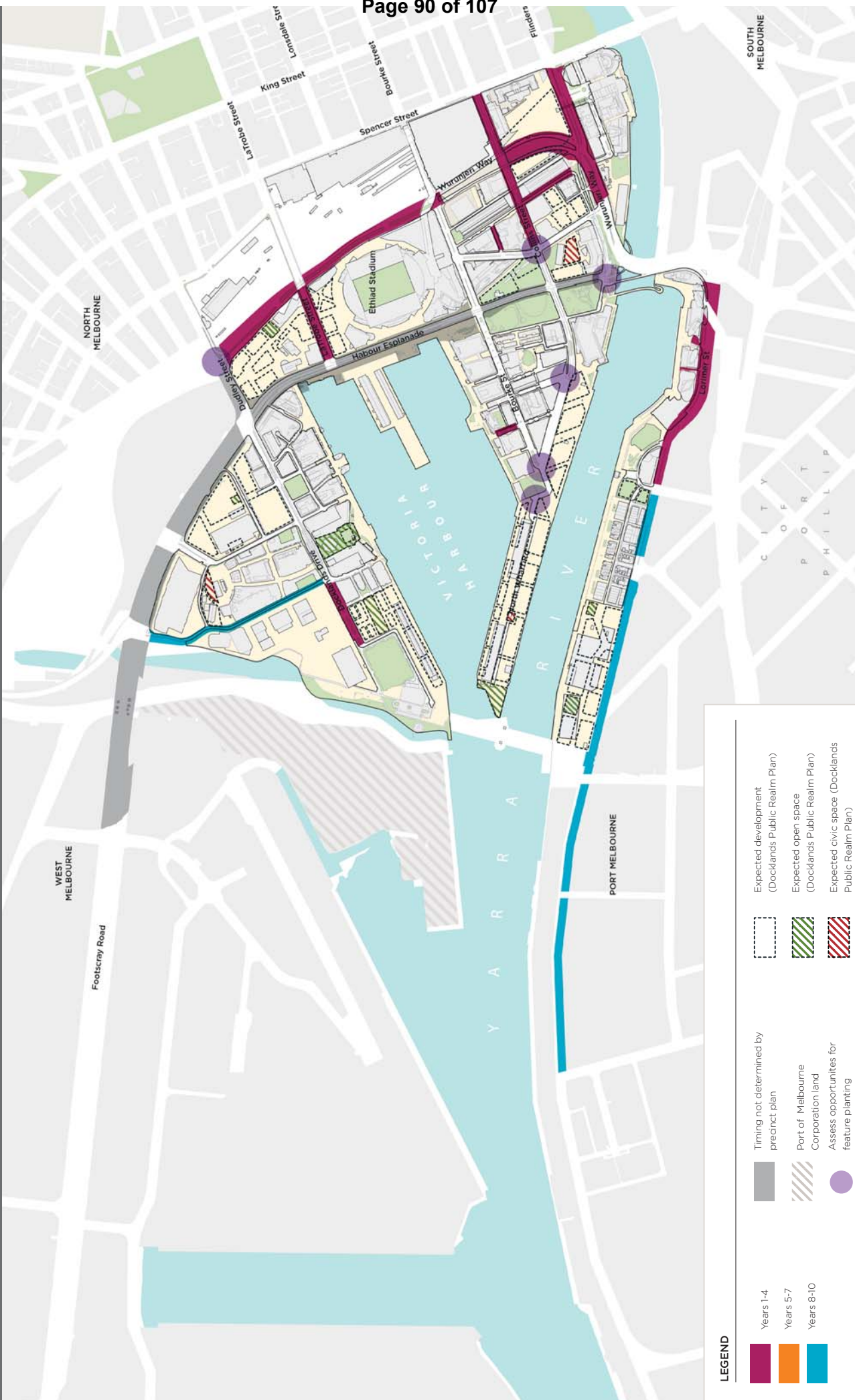


**Select species**  
Review Streetscape objectives  
Review What should change (Map 7)  
Review Planting plans (Map 8, 9 & 10)  
Review species palette



**Implement planting**  
Produce streetscape design options  
Consult with residents  
Plant

**MAP 1: PLANTING PRIORITIES**



**LEGEND**

- Years 1-4
- Years 5-7
- Years 8-10
- Timing not determined by precinct plan
- Port of Melbourne Corporation land
- Assess opportunities for feature planting
- Expected development (Docklands Public Realm Plan)
- Expected open space (Docklands Public Realm Plan)
- Expected civic space (Docklands Public Realm Plan)

# PRIORITISING TREE PLANTING IN STREETS

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 Docklands specific principles are outlined below. As many areas of Docklands are still under development, there is opportunity to plan and design these areas to maximise the potential for tree growth.

## 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.

There are many other factors to consider in selecting trees in the urban environment such as context, scale and program.

In Docklands feature trees can be used to create individual identities for sites and sub-precincts. Consider extending the character of the gardens into the surrounding streetscapes to create linkages between open spaces. Outcomes that improve the pedestrian environment should always be prioritised.

Wind conditions in Docklands affect tree performance and selection of species that are suited to these conditions is essential. Trees can

also play a role in mitigating wind impacts. Selection of trees for wind mitigation should consider a variety of species to ensure that diversity objective can be achieved. Windborne saline conditions will also be a factor in some areas.

## Planting on structure

Much of Docklands waterfront areas are wharf structures which extend beyond the sea walls that form the edge between natural ground and the adjacent waterways. Large areas of bridging structures also connect Docklands to the Central City across the railway corridor and Wurundjeri Way.

While the first option for any city greening should be planting in ground where vegetation has access to natural soil and ground water, a significant proportion of the public realm is on structure in Docklands and it is important to consider how these spaces can contribute to the Urban Forest.

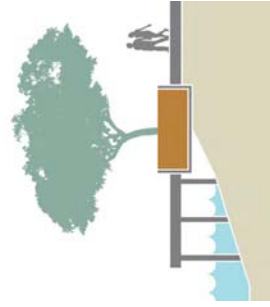
The cost of planting on structure is substantially greater than planting in ground but the potential benefits of greening these areas can be considerable in reducing wind, providing shade, open space amenity, connectivity of the streetscape and a range of ecological services.

Planting on structure requires creating a growing environment for vegetation that provides sufficient soil volume and suitable growing media to support the growth and stability of the planting, drainage and irrigation. The weight loading either of the existing or proposed structure needs to be appropriate to

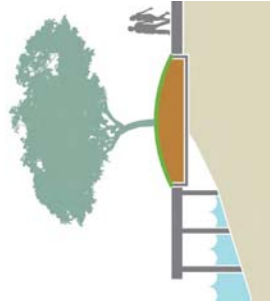
support the dead/live and transient loads of the growing environment, the mature vegetation, as well as the weight of people and vehicles that may use the space. The available depth of structure will also determine what type of planting can be supported and if the planting needs to be raised above the deck level to create sufficient space.

The Urban Forest Diversity Guidelines provide further details on soil volume requirements for containerized trees and details the Crown Projection Method to be used when determining the soil volume required for a tree of a given size.

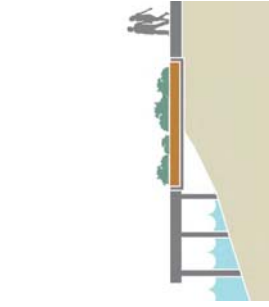
All vegetation on structure relies more on ongoing inputs and maintenance, and is more vulnerable to failure due to infrastructure failure or change of management and ownership. The selection of vegetation in these locations will be subject to the limitations of the growing that can be achieved, and also needs to be able to cope with strong winds and be salt and heat tolerant.



Planting on structure: raised garden bed to achieve required soil volume for tree planting



Planting on structure: trees growing on mound to achieve required soil volume for tree planting



Planting on structure: garden bed with required soil volume for ground cover planting

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

Docklands presents a range of challenges for tree growth due to the underlying soil conditions, wind exposure, saline air, sometimes limited solar access and building canopies/awnings. Planting site

preparation, stock selection and, to an extent, species trials are critical to establishing a successful urban forest in Docklands. 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 Docklands. These selections should be focused in areas or planting positions where losses will have a lower impact on shade provision (e.g., where there large, long-lived trees in medians or on one side of the street, or in landmark/biodiversity plantings).

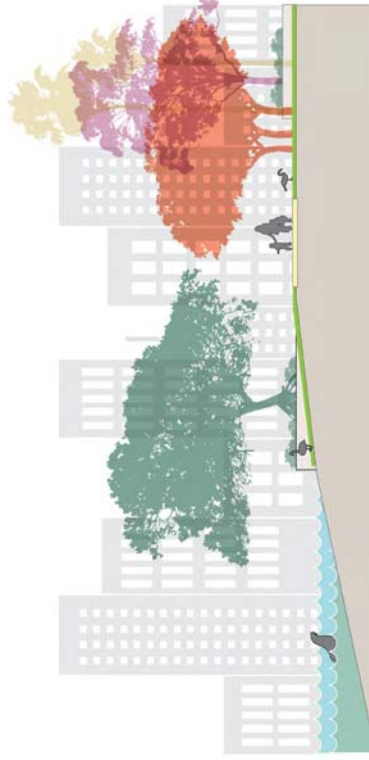
## Soil and moisture conditions: Improve soil moisture conditions and select species appropriate to the site conditions

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:

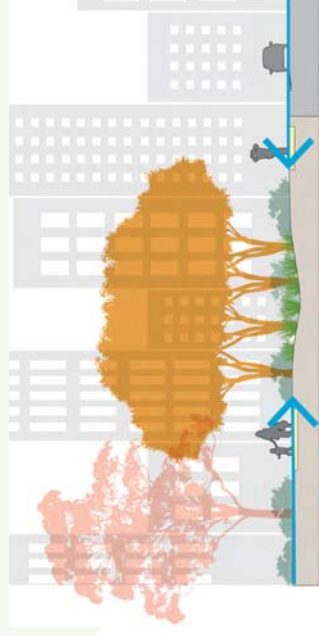
- Systematic trenching in landscaped areas, in medians, between tree plots and centre of road parking zones
- Structural soils below permeable paving
- Increasing soil volume
- WSUD tree pits or infiltration pits
- Stormwater harvesting

The Docklands precinct has been heavily modified. The landscape would have been periodically inundated with saline water and therefore a low water table, saline soil or contamination may be encountered. Given the level of modification variable fill and Coode Island Silt are likely to be common.

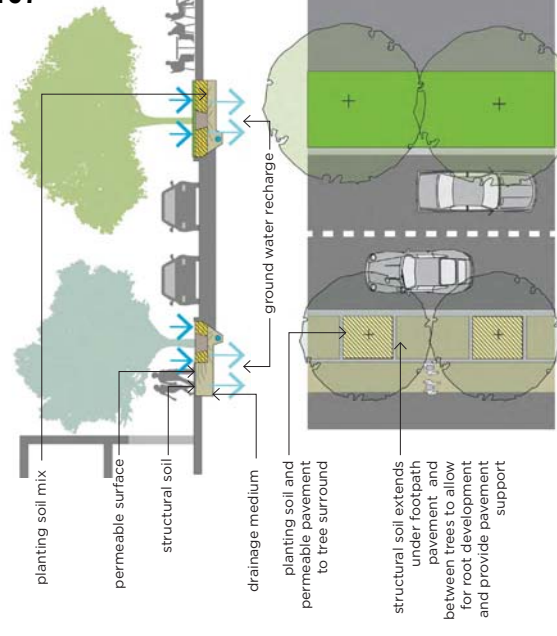
The Yarra River, Moonee Ponds Creek and Victoria Harbour are the focus of the Docklands precinct and the streetscapes. Public and private realm vegetation can play a role in supporting the ecology of the river corridor. Species selection to provide habitat can be incorporated with initiatives for capturing water and runoff for filtration prior to entering the waterways



Enhance ecology corridors and increasing biodiversity along the waterfront.



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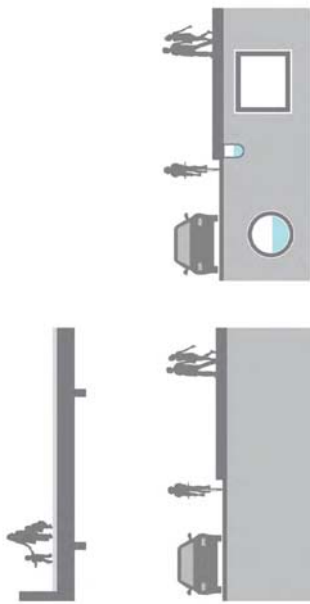


Improving below ground growing conditions for trees in streets

# GUIDING PRINCIPLES AND CONSIDERATIONS FOR TREE PLANTING CONTINUED

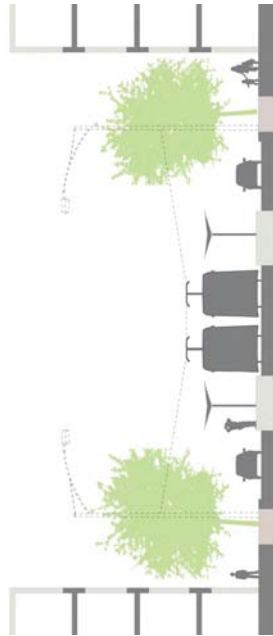
## Map 2: Key planting constraints

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



Over head structures such as bridges limit tree planting

Various significant below ground structures and services restrict tree planting opportunities



Tram infrastructure prevents median tree planting, and overhead services clearances influence tree placement in footpaths

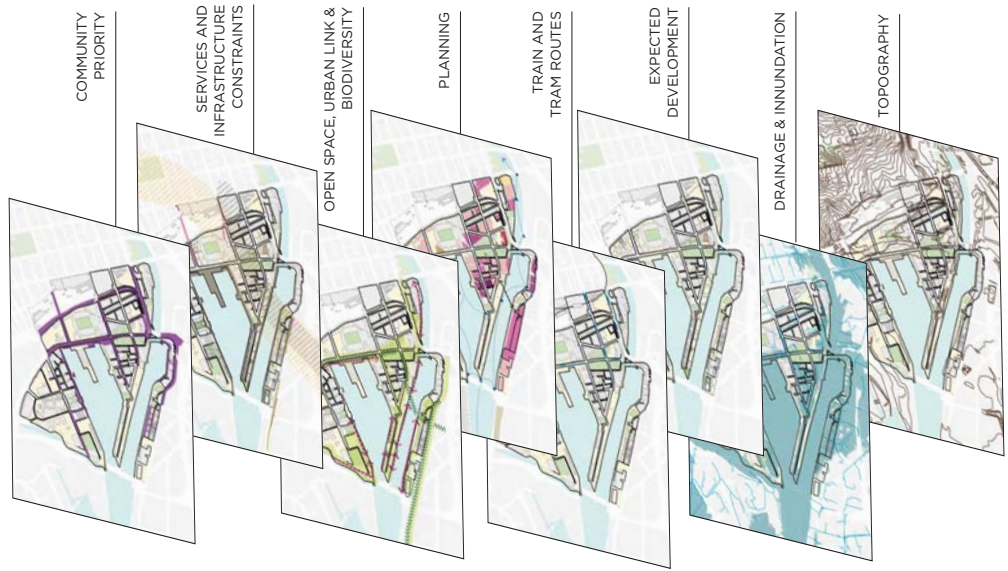
## Maps 3 & 4: Planting Opportunities

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

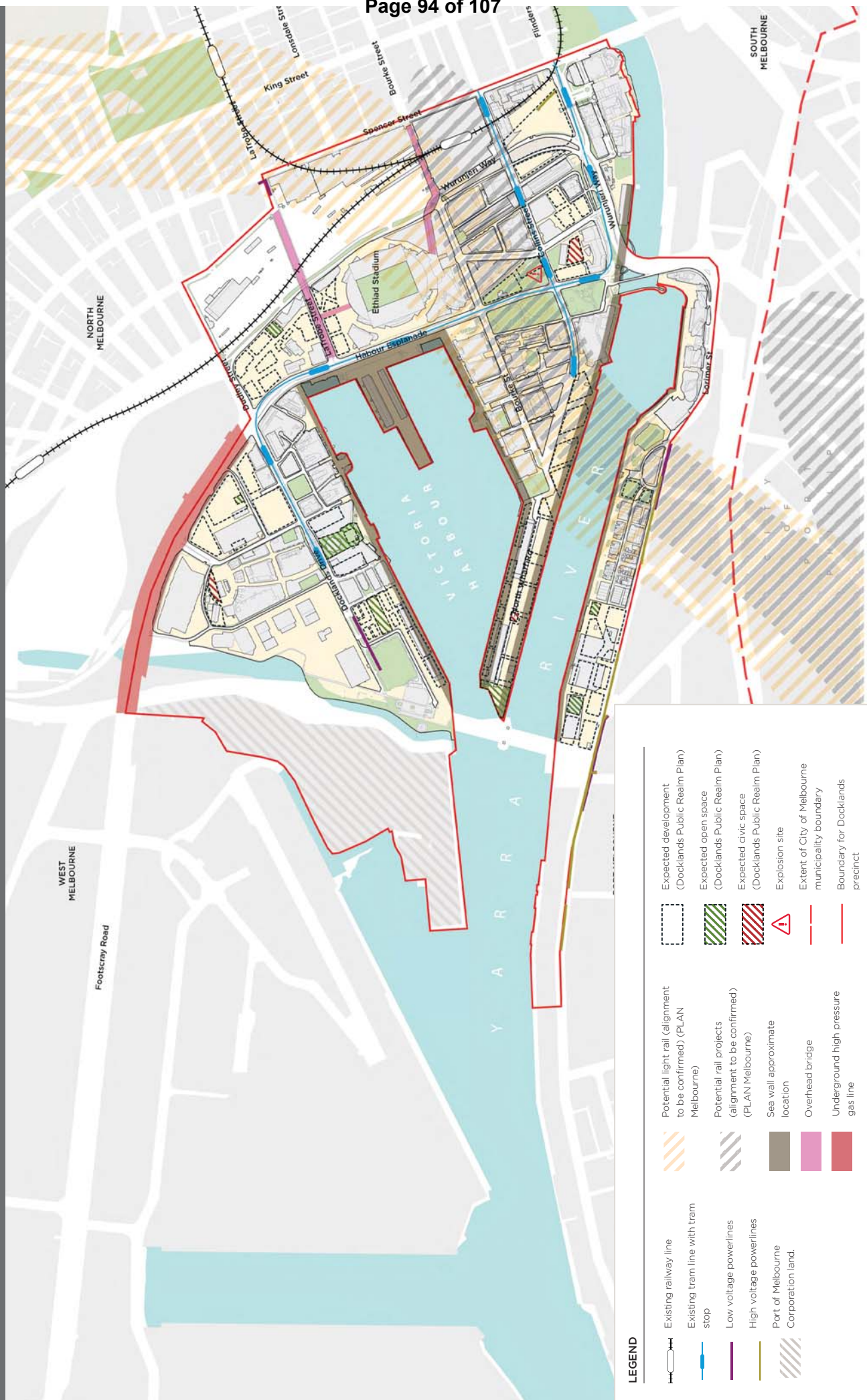
Map 3 illustrates the Natural and Open Space Context which considers the geographic aspects of the precinct as well as open space opportunities.

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

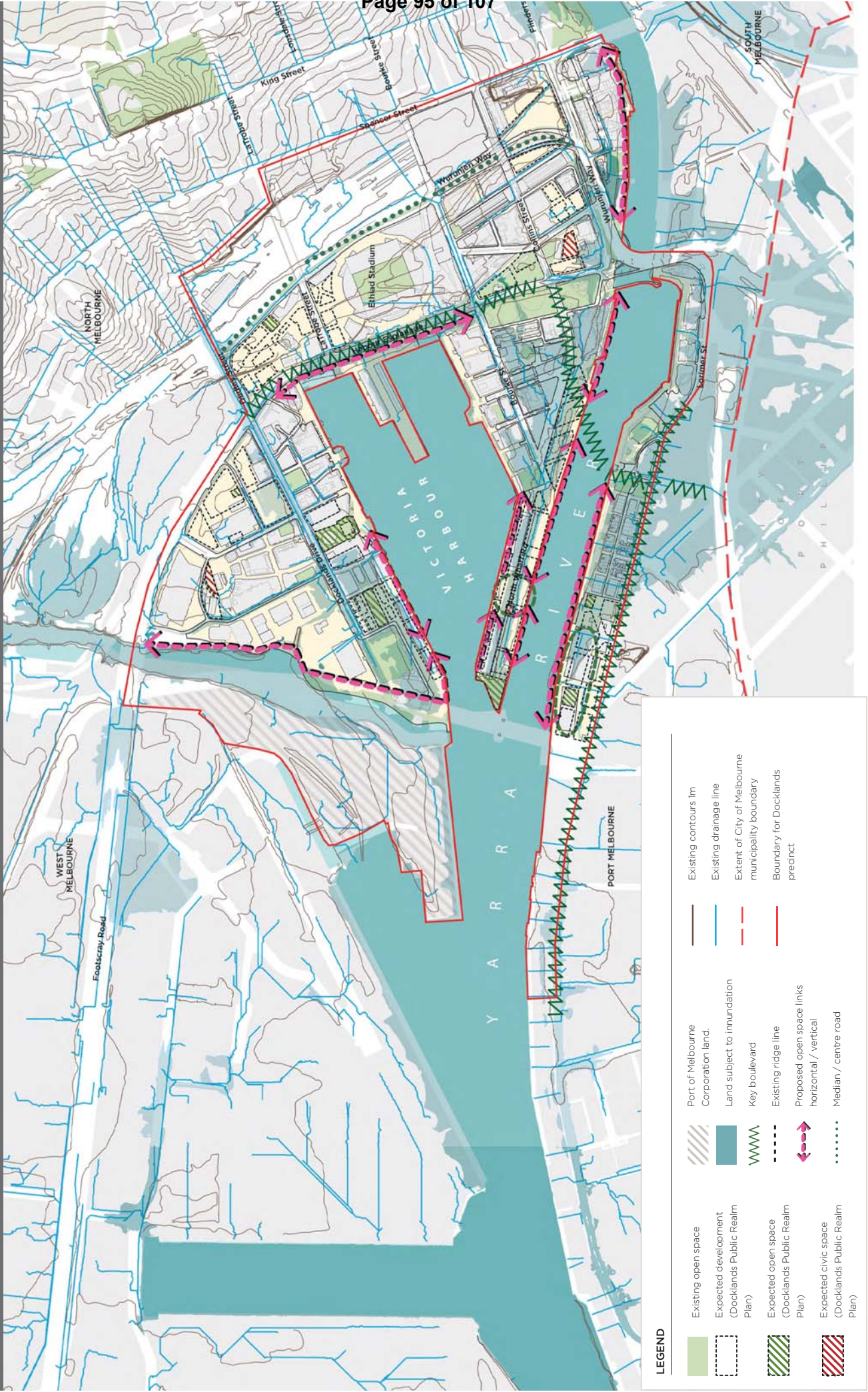
The combination of all of these factors will influence the design for streets, the varied role of planting in these streets and species selection.



**MAP 2: KEY PLANTING CONSTRAINTS**



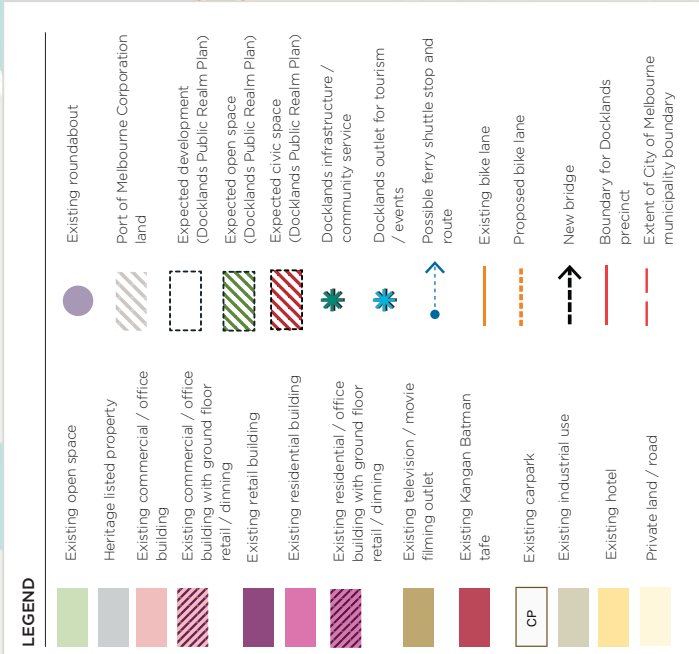
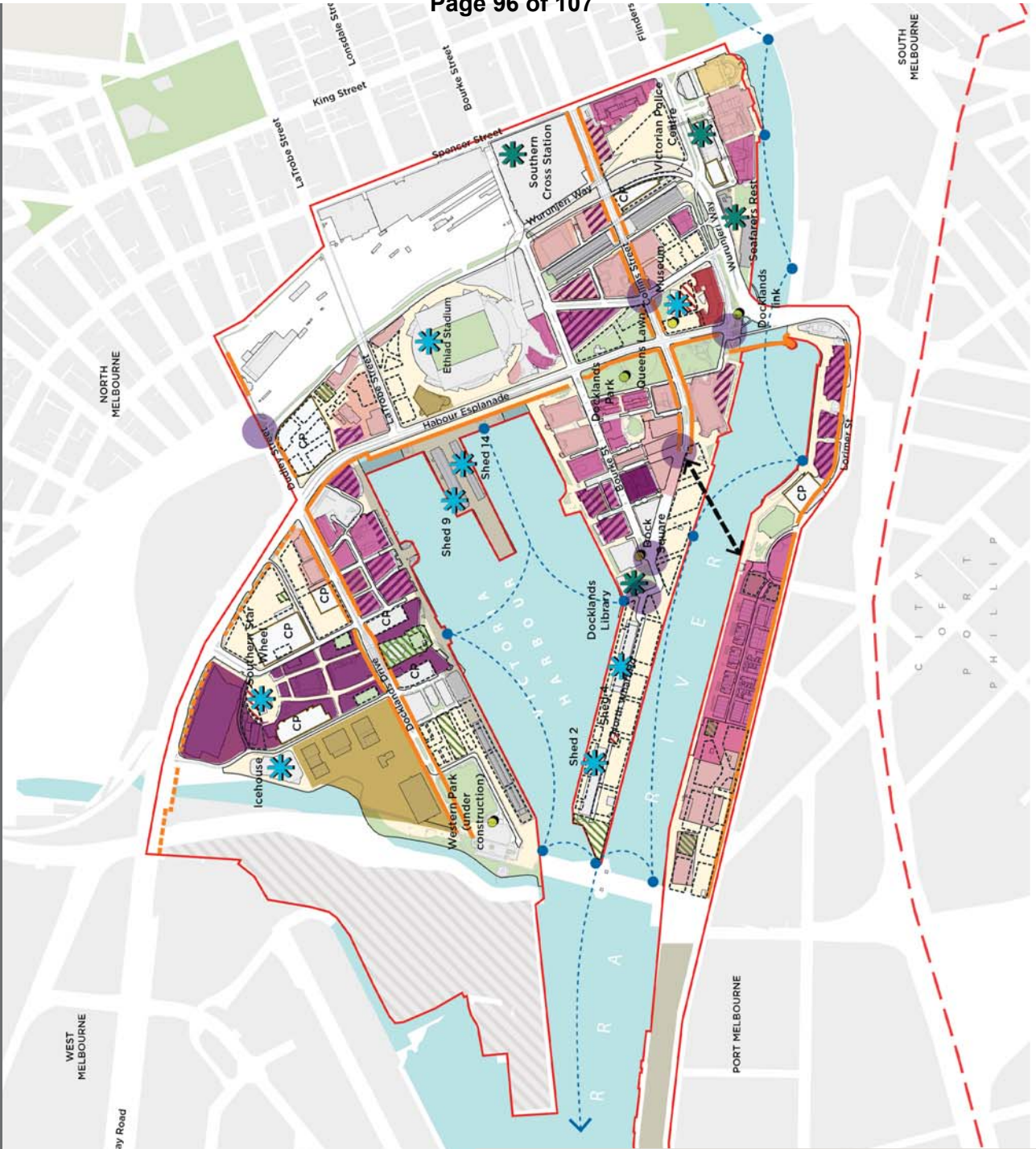
MAP 3: NATURAL AND OPEN SPACE CONTEXT



**LEGEND**

	Existing open space		Port of Melbourne Corporation land		Existing contours 1m
	Expected development (Docklands Public Realm Plan)		Land subject to inundation		Existing drainage line
	Expected open space (Docklands Public Realm Plan)		Key boulevard		Extent of City of Melbourne municipality boundary
	Expected civic space (Docklands Public Realm Plan)		Existing ridge line		Boundary for Docklands precinct
			Proposed open space links horizontal / vertical		
			Median / centre road		

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 Docklands. These include key differences in landuse, urban character, and landform to which planting will respond.

### Harbour Esplanade parklands and waterfront

As the central spine of Docklands this precinct provides the primary destination waterfront, civic spine of the esplanade and series of parklands that extend to the Yarra River.

Docklands Park is characterised by its native vegetation and forms part of the biodiversity corridor that links with the Yarra River. This is an important connector for trams, vehicles, pedestrians and cyclists. The further development of these open spaces needs to consider how these spaces are enhanced to create a strong character for Docklands and the quality of the amenity and microclimate to support public use.

### Moonee Ponds Creek/Waterfront City Precinct

This precinct is characterised by its large destination facilities including the observation wheel, studios and the future Western Park. The new parkland will provide a regional open space for Docklands that connects Docklands Drive with the creek and harbour front. Planting of Docklands Drive and the park will provide drainage capture and biodiversity links to the creek. This low lying area drains to the Moonee Ponds creek and is subject to flooding. Other planting in the precinct should support the ecological quality of the creek.

### New Quay Precinct

This waterfront residential and maritime precinct will be further enhanced by a series of new open spaces to serve the local community. This area can also be enhanced as a waterfront destination for visitors to Docklands and enhancing the local character of the public realm.

### Digital Harbour

This small precinct is a pocket of mixed use development that is quite distinct from other parts of Docklands. The network of streets and small parklands should create an intimate and protected public realm.

### Stadium Precinct

The Stadium precinct has a substantial area of elevated pedestrian spaces which provides key links from the city across the rail corridor and Wurundjeri Way. Opportunities for planting on structure through these connectors should be considered to increase the connectivity of the urban forest and improve the microclimate on these large paved areas.

### Spencer St Rail Precinct

Separating the CBD and Docklands this precinct occupies the rail corridor with a series of at grade and elevated vehicle and pedestrian links extending the Hoddle Grid street layout to Docklands. Planting on structure is a key aspect of continuing the Collins Street avenue through this area. The Wurundjeri Way landscape corridor supports large trees which are an important avenue and green threshold to the entry to Docklands from the city.

### Batmans Hill Precinct

Further development over the railway will create a new urban precinct that connects Collins and Flinders

Street. New parkland and urban spaces will be built on structure and will provide local open space amenity. The interface of this precinct with Wurundjeri Way creates the opportunity for substantial planting along these wider open spaces.

### Seafarers Precinct

This small pocket of waterfront is separated from Docklands by Wurundjeri Way and Charles Grimes Bridge with only the new Jim Stynes pedestrian and cycle bridge providing a connection. The redevelopment of the existing sheds and park provide the opportunity to support biodiversity along the Yarra River and links to the city.

### Victoria Harbour East Precinct

The Victoria Harbour street layout has strong connection to the CBD with Collins and Bourke Streets extending through and converging at the community hub at Dock Square and the Library.

### Victoria Harbour West Precinct

As the remainder of North Wharf is developed in future, this precinct will be finer grained with a more local character and close connection with the water on this narrow peninsula. There are opportunities to create a diverse urban forest with the small streets and local parks containing a mix of species that can be quite different in character.

### Yarra's Edge Precinct

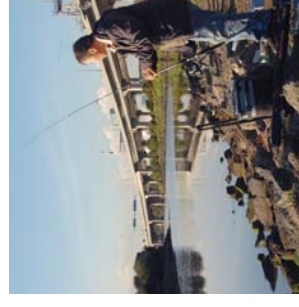
The southern side of the river includes a continuous corridor of parkland along the waterfront and the avenue planting along Lorimer Street. The smaller streets are important in creating a more intimate scale alongside the tower developments.



Harbour Esplanade Parklands Precinct and waterfront precinct: Docklands Park



Victoria Harbour Precinct east: Victoria Promenade



Moonee Ponds Creek / Waterfront City Precinct



Victoria Harbour East precinct: Victoria Promenade



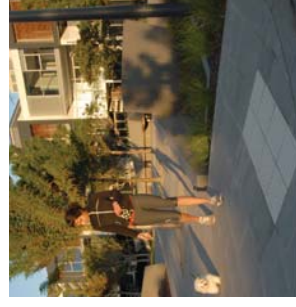
Stadium Precinct: Elevated walkways connection



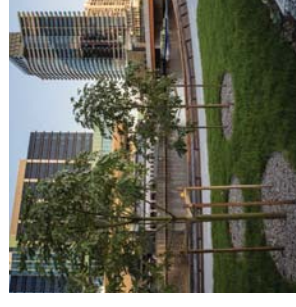
Batmans Hill Precinct: Bunjil sculpture landmark on Wurundjeri Way



Victoria Harbour West Precinct: Docklands Library



Yarra's Edge Precinct






Seafarers Precinct

MAP 5: PLANTING SUB-PREINCINCTS



**LEGEND**

-  Expected development (Docklands Public Realm Plan)
-  Expected open space (Docklands Public Realm Plan)
-  Expected civic space (Docklands Public Realm Plan)

# 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 and biodiversity

### 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 or decking that cannot accommodate adequate soil volume for a tree. Planting configuration should seek to maximise canopy cover in all cases.

### Biodiversity

The Yarra River and Moonee Ponds Creek are important ecology corridors and the Precinct Plan will look to enhance habitat and biodiverse connections along these waterways and the drainage lines that feed into them.

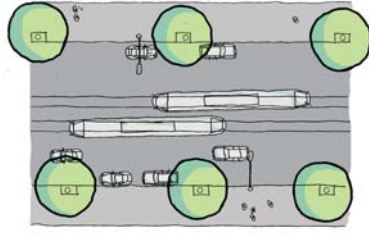
Opportunities to enhance biodiversity would include selecting bird and pollinator attracting species and adding layers of vegetation to provide structural diversity. Avenue and linear open space corridors along Harbour Esplanade and Docklands Boulevard will also play a key role in supporting biodiversity. Other streets may also provide opportunities for understory planting.

Species choices for understory planting should factor in light conditions, competition with existing plantings, and maintenance requirements related to irrigation and access.

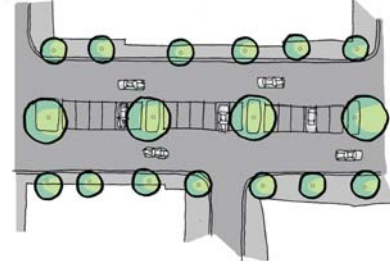
## Map 7: What should stay and what should change?

Corymbias and Angophoras (gums), figs, planes and eucalypts are core genera within Docklands'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. 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.

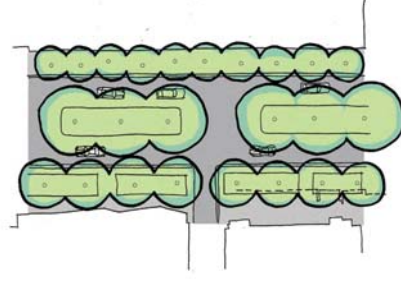
Minimum canopy cover of 20%



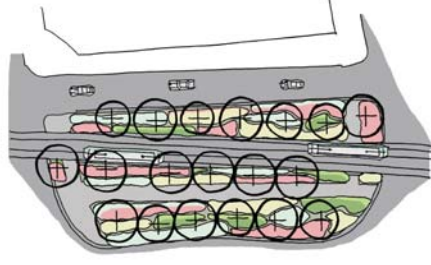
Minimum canopy cover of 20 - 40%



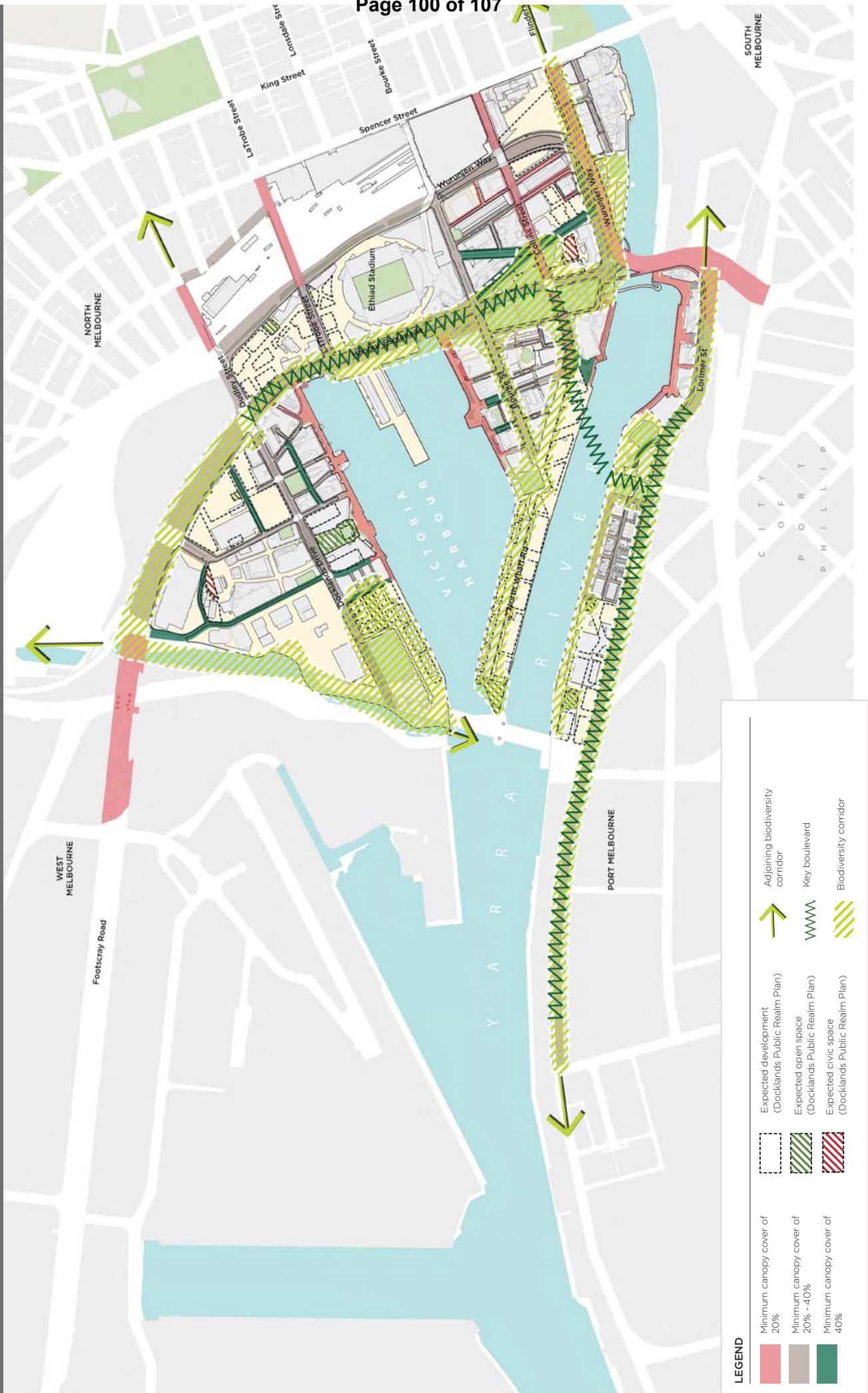
Minimum canopy cover of 40%



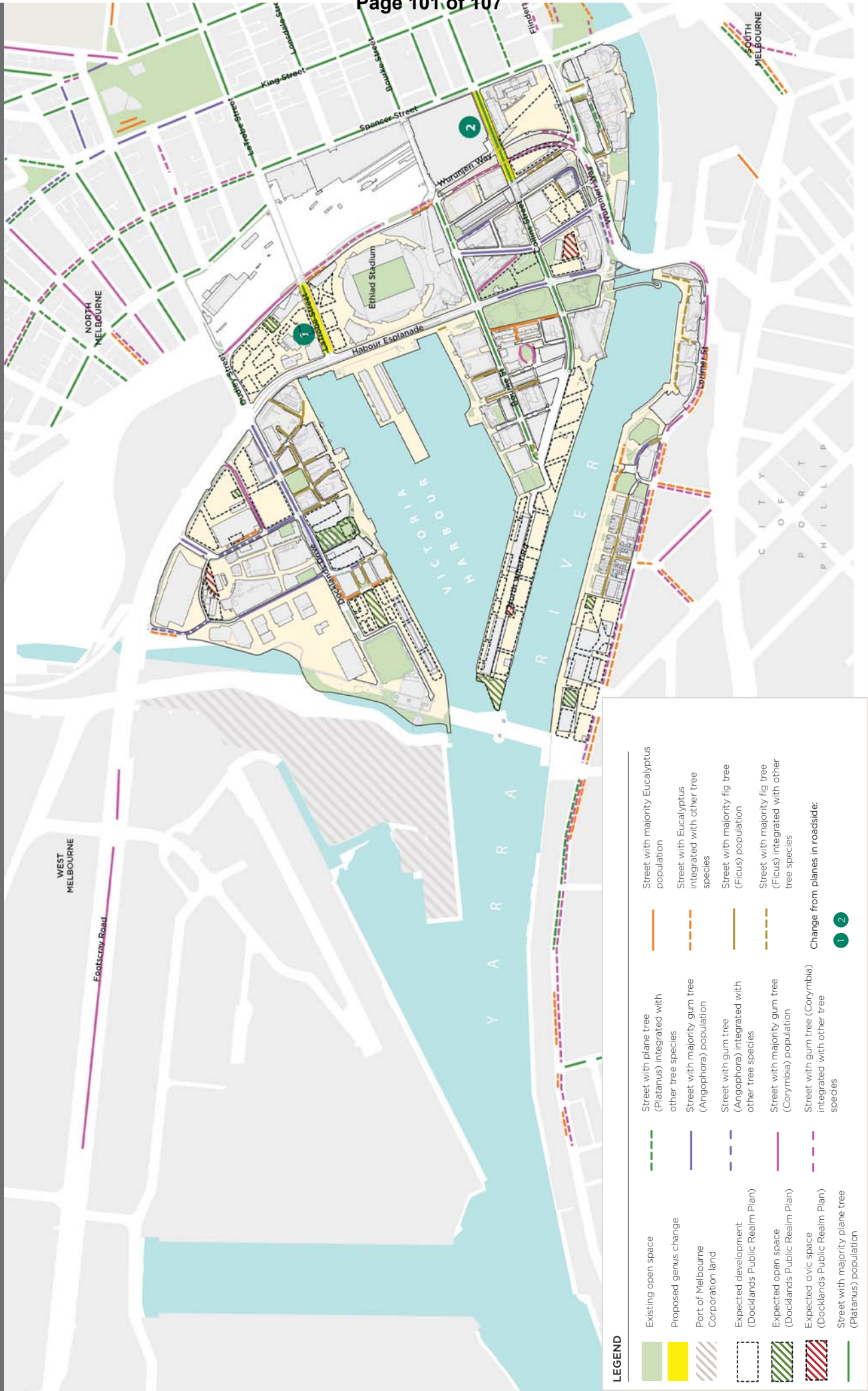
Biodiversity objective maximise canopy



MAP 6: CANOPY COVER AND BIODIVERSITY OUTCOMES



**MAP 7: WHAT SHOULD STAY AND WHAT SHOULD CHANGE?**



# 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 9: 10-year planting plan

This plan provides direction on where new and replacement planting is to occur across Docklands. 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 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 contribution of the streetscape to the ecology of the Yarra River corridor.
- Create streets that provide connections between open spaces.
- Incorporate colour and seasonal change into species selections.

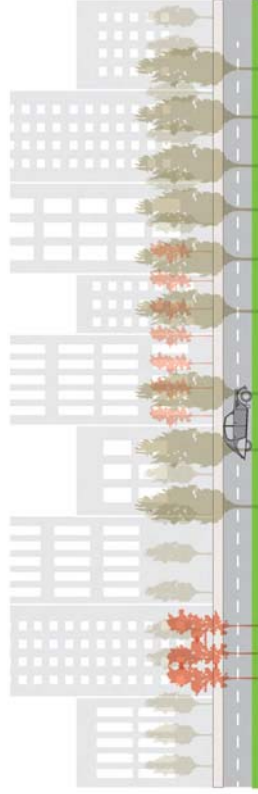
## Map 10: Guide to Species Change

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.

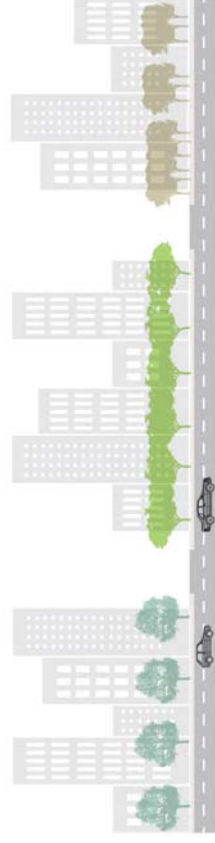
Select or match species to form, colour and seasonal themes for streets to unify character even where species are varied. In streets use a single species for multiple segments then change between sub-precinct boundaries, or consider the use of two alternating species of similar form, scale and colour. When appropriate, use informal mixes of species along perimeters of parks and gardens or where vegetation from private gardens overhangs the streets.



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

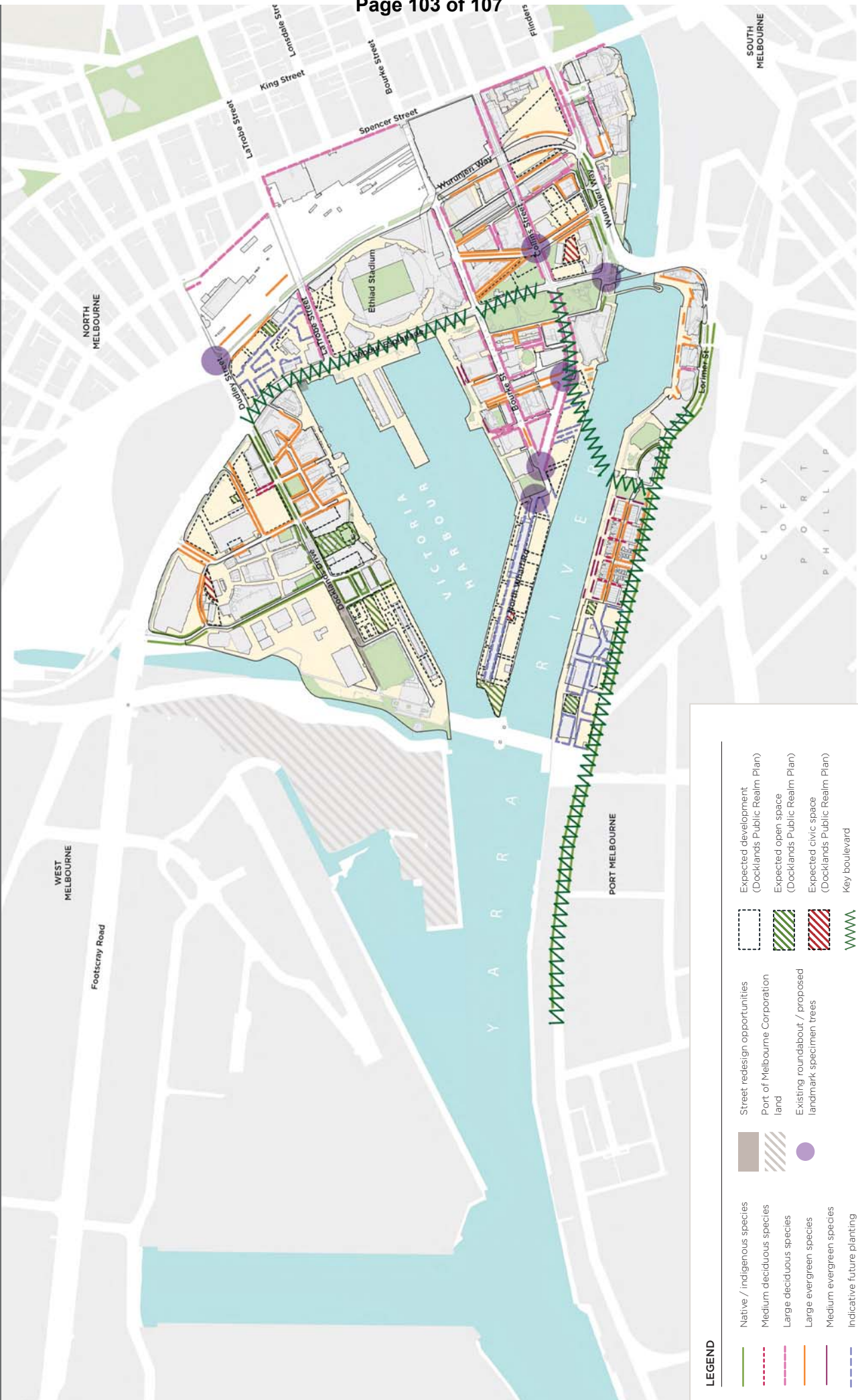


10-year planting strategy: New and replacement planting is to occur across Docklands.

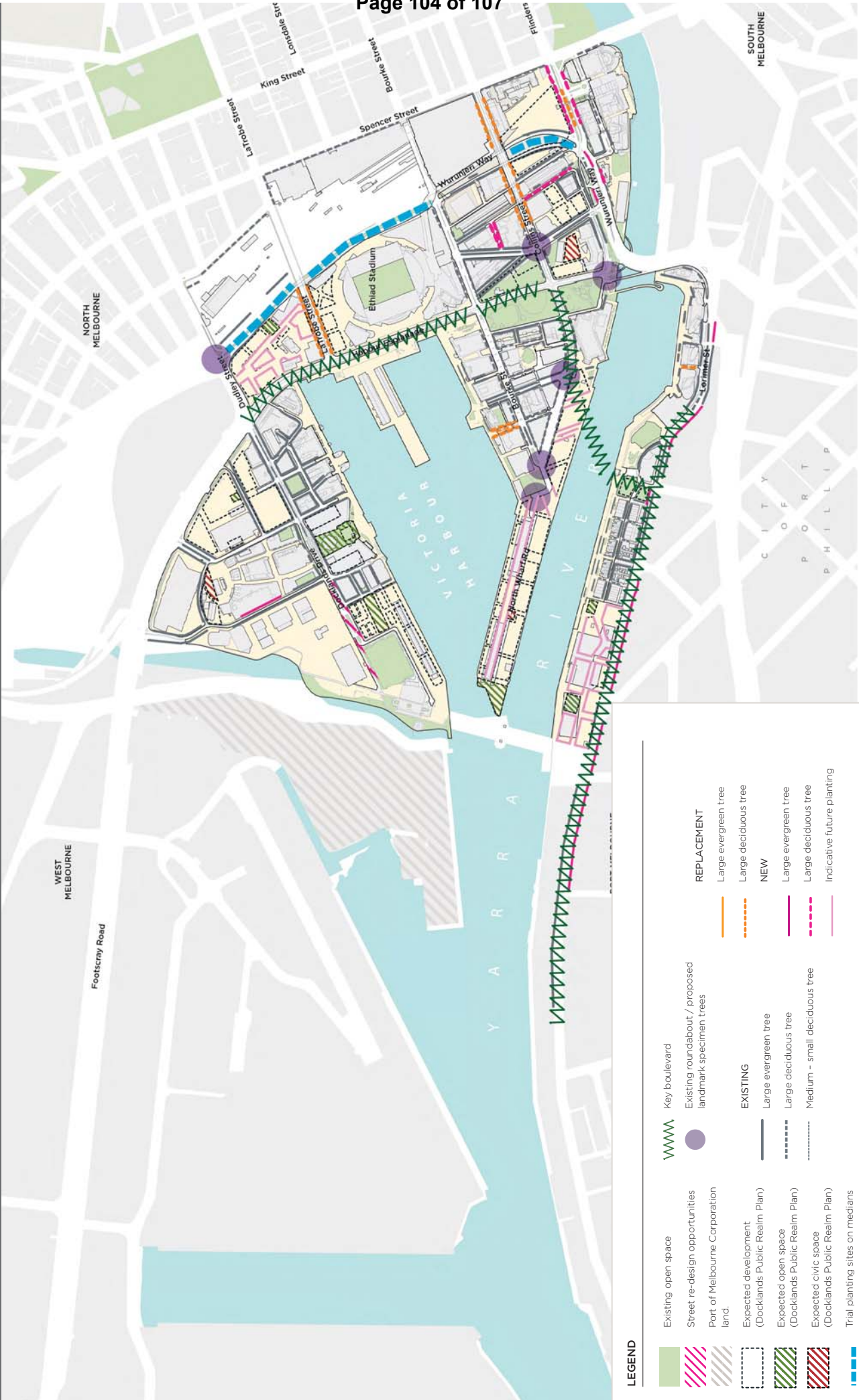


Guide to species change: This map indicates locations along streets where a change in species is logical based on sub-precinct boundaries, topographic factors or objectives defined for streets within this plan.

**MAP 8: LONG TERM PLANTING PLAN**



**MAD 9: 10-YEAR PLANTING PLAN**

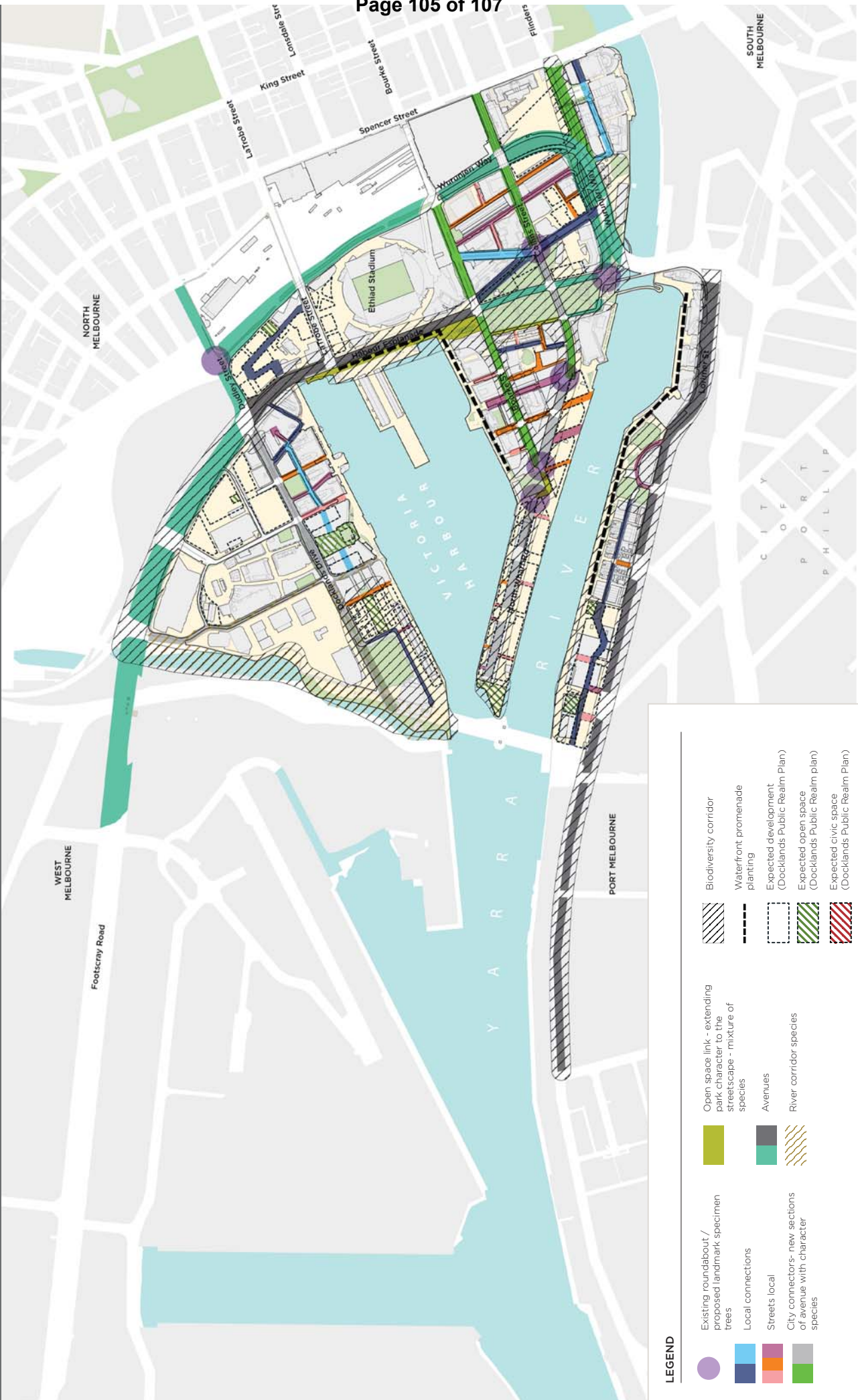


**LEGEND**

	Existing open space		Key boulevard		<b>REPLACEMENT</b>
	Street re-design opportunities		Existing roundabout / proposed landmark specimen trees		Large evergreen tree
	Port of Melbourne Corporation land		<b>EXISTING</b>		Large deciduous tree
	Expected development (Docklands Public Realm Plan)		Large evergreen tree		<b>NEW</b>
	Expected open space (Docklands Public Realm Plan)		Large deciduous tree		Large evergreen tree
	Expected civic space (Docklands Public Realm Plan)		Medium - small deciduous tree		Large deciduous tree
	Trial planting sites on medians				Indicative future planting



MAP 10: GUIDE TO SPECIES CHANGE



**LEGEND**

- Existing roundabout / proposed landmark specimen trees
- Local connections
- Streets local
- City connectors - new sections or avenue with character species
- Open space link - extending park character to the streetscape - mixture of species
- Avenues
- River corridor species
- Biodiversity corridor
- Waterfront promenade planting
- Expected development (Docklands Public Realm Plan)
- Expected open space (Docklands Public Realm plan)
- Expected civic space (Docklands Public Realm Plan)

# 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 Docklands, Guiding Principles and Planting Plan. Elms and planes are key genera within Docklands, 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 Docklands'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 Docklands Trees (Limited Future Use)

*Angophora costata*, Smooth-barked Apple  
*Corymbia citriodora*, Lemon Scented Gum  
*Corymbia maculata*, Spotted Gum  
*Ficus macrocarpa* var. *Hilli*, Hill's Fig  
*Platanus* spp., Plane

## Large Trees for Streets

**Evergreen**  
*Angophora floribunda*, Rough-barked apple  
*Araucaria* spp.  
*Calodendrum capense*, Cape chestnut  
*Cinnamomum camphora*, Camphor Laurel  
*Eucalyptus mannifera*, Brittle gum  
*Ficus* spp., Fig  
*Herpephyllum caffrum*, Kaffir plum  
*Pinus* spp., Pine

## Deciduous

*Catalpa bignoniodes*, Indian bean tree  
*Celtis* spp., Hackberry  
*Fraxinus pennsylvanica*  
*Quercus* spp., Oak  
*Toona ciliata*, Australian red cedar

## Medium to Small Trees for Streets

**Evergreen**  
*Allocasuarina verticillata*, Drooping she oak  
*Banksia integrifolia*, Coastal banksia

*Banksia serrata*, Saw tooth banksia  
*Brachychiton* spp.  
*Buckinghamia celisissima*, Ivory curl tree  
*Casuarina cunninghamiana*, River she oak  
*Cuaenopsis anachardioides*, Tuckeroo  
*Eucalyptus leucopylon* subsp. *megalocarpa*, Red flowering yellow gum  
*Elaeocarpus reticulatus*, Blueberry ash  
*Geijera parvifolia*, Wilga  
*Hakea bucculentia*, Red pokers  
*Hakea francisiana*, Grass Leaf Hakea  
*Laurus nobilis*, Bay Laurel  
*Magnolia grandiflora*, Southern magnolia  
*Olea europaea*, Olive  
*Syzygium floribundum*, Waterhousea  
*Tristaniopsis laurina*, Kanooka

## Deciduous

*Brachychiton* spp.  
*Koelreuteria* spp.  
*Melia azedarach*, Australian white cedar  
*Sapium sebiferum*, Chinese tallow tree  
*Stenocarpus sinuatus*, Firewheel tree  
*Ulmus parvifolia*, Chinese Elm (selections)

## Large Feature Trees

*Agathis robusta*, Queensland Kauri  
*Angophora floribunda*, Rough-barked Apple  
*Araucaria heterophylla*, Norfolk Island Pine  
*Araucaria cunninghamii*, Cook's Pine  
*Eucalyptus tricarpa*, Red Ironbark  
*Ficus macrophylla*, Moreton Bay fig

## 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](mailto:melbourne.vic.gov.au/urbanforest)

### 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 [treeplanning@melbourne.vic.gov.au](mailto:treeplanning@melbourne.vic.gov.au).

### 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](mailto: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 [treeplanning@melbourne.vic.gov.au](mailto:treeplanning@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](http://melbourne.vic.gov.au)

## HOW TO CONTACT US

### Online:

[melbourne.vic.gov.au](http://melbourne.vic.gov.au)

Telephone: 03 9658 9658

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

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)

### In person:

Melbourne Town Hall  
- Administration Building  
120 Swanston Street, Melbourne

7.30am to 5pm, Monday to Friday  
(Public holidays excluded)

### In writing:

City of Melbourne  
GPO Box 3603  
Melbourne VIC 3001  
Australia

Fax: 03 9654 4854

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