

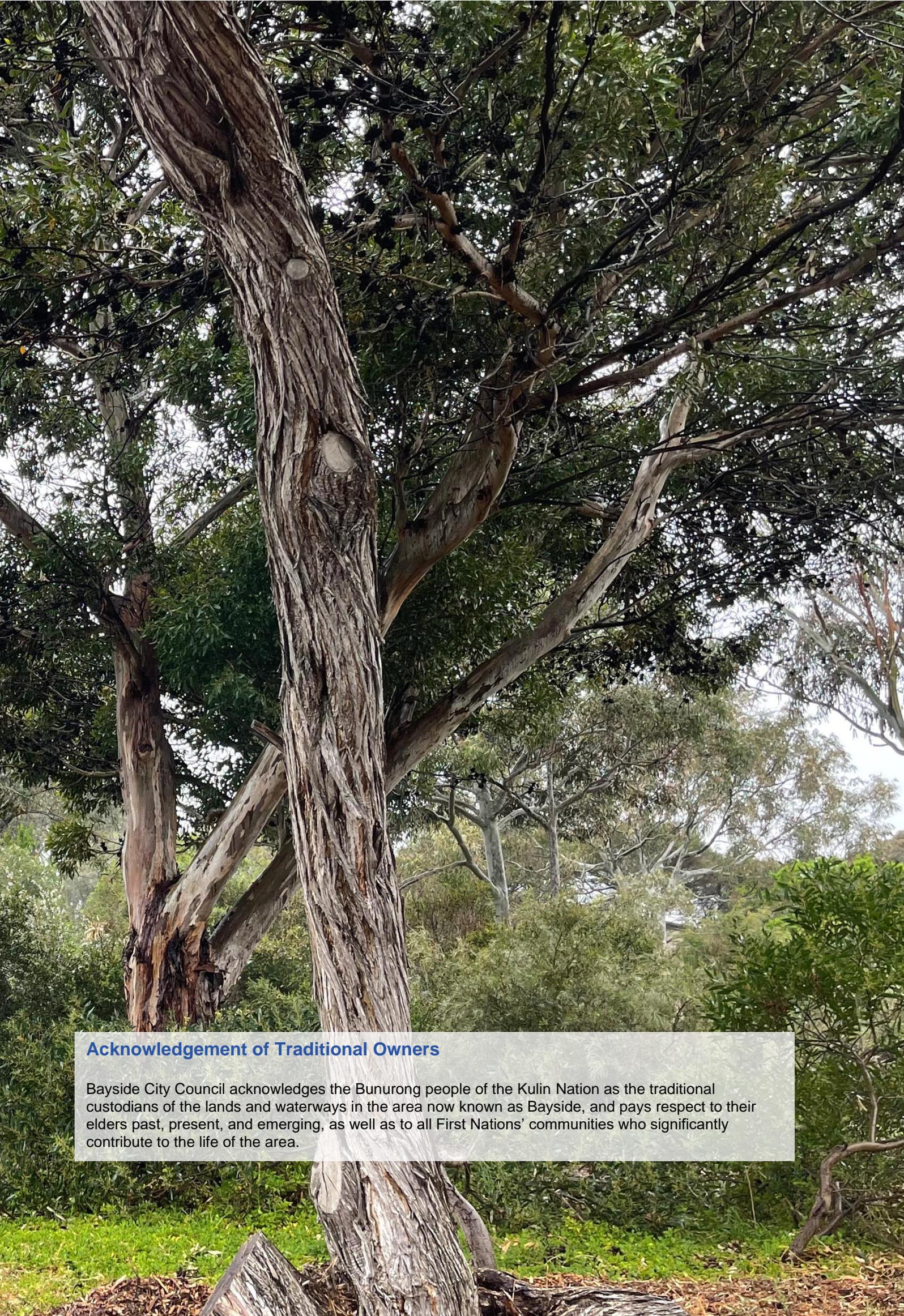


# Beaumaris Urban Forest Precinct Plan 2024



**Cover page:** Beaumaris Bay, Mentone/Beaumaris

**Inside Cover Pages:** Gray Court, Beaumaris



## **Acknowledgement of Traditional Owners**

Bayside City Council acknowledges the Bunurong people of the Kulin Nation as the traditional custodians of the lands and waterways in the area now known as Bayside, and pays respect to their elders past, present, and emerging, as well as to all First Nations' communities who significantly contribute to the life of the area.

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# Introduction to the Precinct Plans

In December 2019, Bayside City Council declared a climate emergency and has since prepared a *Climate Emergency Action Plan 2020 – 2025*. Climate change is real and without respecting our environment or changing the way we behave as a society, there will be even greater impacts than those already experienced. Expanding Bayside’s urban forest is one way that we can help cool the urban environment in which our residents live.

As an action listed in the *Climate Emergency Action Plan*, the development of the *Bayside Urban Forest Strategy* was undertaken and ultimately adopted at its February 2022 Council Meeting. In addition, Bayside City Council has endorsed *Living Melbourne: Our Metropolitan Urban Forest* in 2019, which sets out regional targets for tree and vegetation canopy cover to be reached by 2030, 2040 and 2050. The vision of the *Bayside Urban Forest Strategy* is:

**“Bayside’s urban forest will protect and restore ecological systems with special concern for biological diversity and natural processes which will create a cooler and greener Bayside with enhanced amenity and character where people are connected to nature.”**

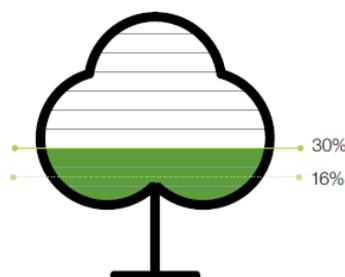
The overarching goal of the *Bayside Urban Forest Strategy* is to increase the urban tree canopy cover from the current 16.01% to 30% by 2040, and to continue this increase into the future. The *Bayside Urban Forest Strategy* identifies a range of actions to be undertaken over the next four years. A key focus is the preparation of Precinct Plans for each suburb in Bayside to guide tree planting and greening at a local level. Precinct Plans are subsidiary documents to the *Bayside Urban Forest Strategy* and form a key component of the strategy’s implementation. Bayside is made up of 9 suburbs and the Urban Forest Precinct Plans will be prepared for each. They will provide tailored direction for increasing canopy cover and urban forest outcomes into the future.

Tree and vegetation (understorey) cover data referenced in these Precinct Plans has been derived from the Victorian Government’s aerial imagery and has been analysed by Council’s GIS (Geographical Information System) to determine an approximate level of tree and vegetation cover per suburb.

## What is an urban forest?

The urban forest encompasses all the trees, shrubs, grasslands, other vegetation and the soil and water that support them – within Bayside, on both public and private land. The urban forest incorporates vegetation in streets, parks, gardens, plazas, campuses, river and creek embankments, wetlands, railway corridors, community gardens, home gardens, green walls, balconies, and roofs.<sup>1</sup> Fauna is an important component too, with complex interrelations between animals and plants helping to maintain the urban forest.

Bayside’s urban forest is made up of native, indigenous and exotic trees, shrubs, grasslands and other vegetation, growing on public and private land, and the soil and groundwater that support them. This includes vegetation in parks, reserves, private gardens, along railways, waterways, main roads, and local streets, and on other green infrastructure such as green walls and roofs. The urban forest provides habitat to a wide range of fauna.



The overarching goal of the Urban Forest Strategy in Bayside is to increase the urban tree canopy cover from the current 16.01% to 30% by 2040, and to continue this increase into the future.

<sup>1</sup> Resilient Melbourne, Living Melbourne Strategy, 2018, available at: [https://resilientmelbourne.com.au/wp-content/uploads/2019/09/LivingMelbourne\\_Strategy\\_online3.pdf](https://resilientmelbourne.com.au/wp-content/uploads/2019/09/LivingMelbourne_Strategy_online3.pdf)

# The Urban Forest Strategy

## Principles:

### 1. Increase

## Strategies:

- 1.1 Consider the individual needs of Bayside's suburbs and ensure that the approach to increasing canopy cover and urban forest outcomes is tailored to the conditions of each area.
- 1.2 Reframe Council's approach to major capital and infrastructure renewal projects as opportunities to increase urban forest outcomes.
- 1.3 Through the Bayside Planning Scheme, require development to provide increases to the number of canopy trees provided.

### 2. Healthier ecosystems

- 2.1 Increase the tree and vegetation canopy cover that is of a diverse range of species across Bayside.
- 2.2 Ensure humans and wildlife can simultaneously and safely access densely vegetated areas, streets and reserves.

### 3. Monitor

- 3.1 Improve, implement and facilitate Council processes and procedures to assist the monitoring of the urban forest

### 4. Maintain

- 4.1 Ensure the tree removal process is transparent and equitable
- 4.2 Reframe our planning and policy framework to give greater priority to existing trees and vegetation when siting new development and ensuring the longevity of any new trees or vegetation by ensuring it is appropriately sited nearby surrounding hard surfaces or infrastructure.
- 4.3 Enhance Council's ability to retain existing trees on private property through increased regulation of tree removal.
- 4.4 Support the maintenance and retention of trees on public land.

### 5. Learn and Celebrate

- 5.1 Increase Council's capacity to provide advice and build community sentiment to tree planting in Bayside.
- 5.2 Continue to build upon Council's green image and utilise this platform to advocate and partner with key stakeholders to provide greener outcomes across Bayside, metropolitan Melbourne and Victoria.
- 5.3 Leverage from the strengths of our network of volunteers, community groups, State Government departments, neighbouring local governments, academics and professionals to support the delivery of community education, information sharing and creating partnerships.

# Key Issues

## Environmental challenges

### Impact of climate change

All trees, including trees on private property, are being affected by climate change. It is important that Council continues to encourage residents to plant climate-resilient trees and vegetation on their property and nature strips. To support this, the provision of readily accessible information and useful tips on how to best plant these types of trees and vegetation will be of great value. Council will also ensure its species palette for streets and parks include the use of more climate-resilient trees and vegetation.

### Tree health, age, Useful Life Expectancy, and species diversity

The *Bayside Urban Forest Strategy* defines key issues across Bayside's urban forest, including climate change, insufficient growth space and natural characteristics (disease, insects, etc.) being significant contributing factors to the health and sustainability of tree coverage across Bayside. This Precinct Plan identifies locations of trees that are in poor health, are reaching senescence and has low useful life expectancy so that appropriate action can be taken in due time.

### Tree survival rate

A high proportion of street and park trees that have been planted have struggled to survive either during or after their initial period of maintenance (first 2 years). Expanding the urban forest and increasing tree canopy coverage will be challenging, especially if high tree attrition continues to occur.

## Developmental challenges

### Trees on private property

Trees on private property make up a significant proportion of Bayside's urban forest. The removal of trees on private property is a significant and challenging issue to address as the management of private trees, to some extent, falls into the hands of individual property owners. Partnering with the private owners and undertaking a precinct-based approach to the protection, retention and enhancement of the urban forest will allow Council to consider the local opportunities for vegetation and tree plantings, process improvements and other locally specific issues.

### Planning permits involving vegetation removal

There are several mechanisms currently in place within the Bayside Planning Scheme that seek to protect vegetation in certain areas of Bayside and require a planning permit to be granted for tree or vegetation removal. These mechanisms include but are not limited to the Vegetation Protection Overlay (VPO), Significant Landscape Overlay (SLO), Heritage Overlay (HO) and Erosion Management Overlay (EMO).

### Surrounding infrastructure

Street trees are located alongside public and private assets that include footpaths, roads, fences, overhead powerlines and underground services. This pressure is similarly felt on private property for medium and high-density developments where there are competing uses and infrastructure to be sited. While there are management and design techniques that can mitigate most of these issues, it is not always easy, particularly with established trees. Established trees have larger roots that can impact footpaths and roads, creating potential hazards that need to be fixed.

## Social challenges

### Older people, children, and people with disabilities

More vulnerable members of the community include older people, young children and people with disabilities and their carers. While trees bring many benefits, they can also create challenges. Maintenance of trees can be challenging for older people or people living with disabilities. Particularly large trees that overhang private property or within the property that can become hazardous through debris that create trip and slip risks. Aging and/or disability can prevent some residents from being able to manage the debris from trees, requiring the use of private gardening services. The greening of activity centres can contribute to a healthier and more comfortable place.

Bayside Council's *Disability Action Plan 2021-2025* states that over 14,000 people living in Bayside have a disability and over 4,000 people need assistance in their day-to-day lives. This assistance is required because of disability, long-term health conditions or old age.

**Safety**

There are a number of elements that contribute to people feeling unsafe, including low visibility and lack of passive surveillance from nearby residents and/or other groups. Within streets, Council plants and maintains trees to ensure there is no foliage to block sight lines. Trees can contribute to this problem if not managed correctly as they have the potential to block visibility from the street if planted too closely together.

# What will the Precinct Plans achieve?

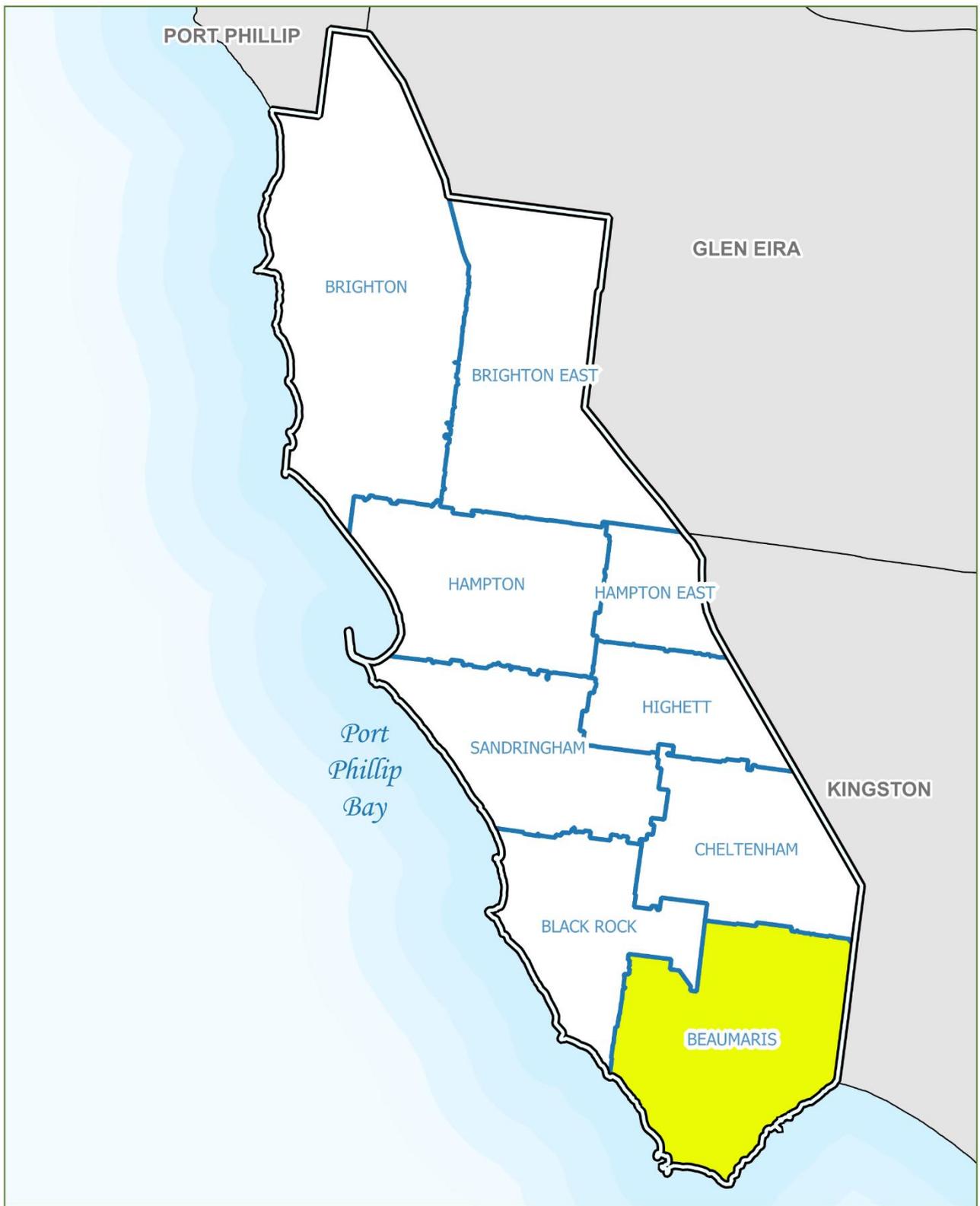
A key action from the Bayside *Urban Forest Strategy* is the preparation of Precinct Plans. Each Precinct Plan will be informed by community consultation and will provide set targets to respond to the individual needs, challenges, and aspirations of the locality.

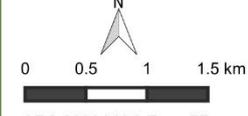
The Precinct Plans will help guide the implementation of the Bayside *Urban Forest Strategy* in Bayside and direct Council's focus to areas with low vegetation, to protect and enhance neighbourhood character and help achieve the objectives of the Bayside *Urban Forest Strategy*.

The prime objective of the Precinct Plan is to prioritise areas of greatest need, including areas with the lowest existing percentage canopy tree cover, as well as areas that are strategically located to mitigate urban heat island effects (including within major activity centres that are experiencing increased density and construction activity), areas of declining canopy or aging trees, highly trafficked pedestrian routes and gaps or vacancies in public planting.

Within this document, specific direction is provided on the selection of appropriate trees for the precinct. The Precinct Plans are performance-based in that they establish the desired outcomes for streets but do not prescribe specific species for each location. Park and significant boulevard trees will be planted using existing master plans and site-specific plans to respond to the individual needs, challenges, and aspirations of the locality. This document focuses on the suburb of Beaumaris.

**Map 1: Beaumaris Location within Bayside**



	<p><b>Legend</b></p> <ul style="list-style-type: none"> <li><span style="border: 1px solid blue; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Suburbs</li> <li><span style="border: 2px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Bayside LGA Boundary</li> </ul>	 <p>0 0.5 1 1.5 km GDA 2020 MGA Zone 55</p>	<p><small>Disclaimer: Copyright 2022 VicMap Data - DELWP This material may be of assistance to you but the state of Victoria and Bayside City Council do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or consequences which may arise from your relying on any information contained in this material. Created by Bayside City Council 02 November 2022</small></p>
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# Suburb Profile – Beaumaris

Information in this Suburb Profile was accessed from Profile.id which utilises 2021 census data from the Australian Bureau of Statistics and population, household and age structure forecasts.

## Population

Beaumaris is a changing suburb, both physically and demographically. Beaumaris is experiencing a slow increase in population, having increased by 155 people from 13,885 in 2016 to 14,040 in 2022 and is forecasted to grow to 14,469 (increasing by 3.06%) by 2041.

## Age structure

By 2041, it is anticipated that 32% of residents will be above the age of 60, which is an increase from the current 29.7% (2021).

It is expected that older populations will have greater difficulty maintaining gardens. Future housing will need to accommodate for an ageing population by providing a diverse housing typology that is adaptable for people with limited abilities.

## Residential developments

Residential development forecasts assume the number of dwellings in Beaumaris will increase by an average of 21 dwellings per annum to 5,795 in 2041. In Beaumaris, the majority (60%) of dwellings are detached dwellings, with 29.5% of the current housing stock then being classified as medium density, and 9.3% high density.

Looking to the future, lone person households is set to increase, from 25.1% in 2021 to 32.9% in 2041 (an additional 6,238 lone person households). This will likely see an increase in medium and high density stock to supply and support housing diversity.

As higher density outcomes increase, the availability of permeable surfaces will decrease. While population growth is moderate, it is a factor contributing to increased housing development that in turn impacts existing tree canopies and vegetation, and the ability to provide future large canopy on private land.

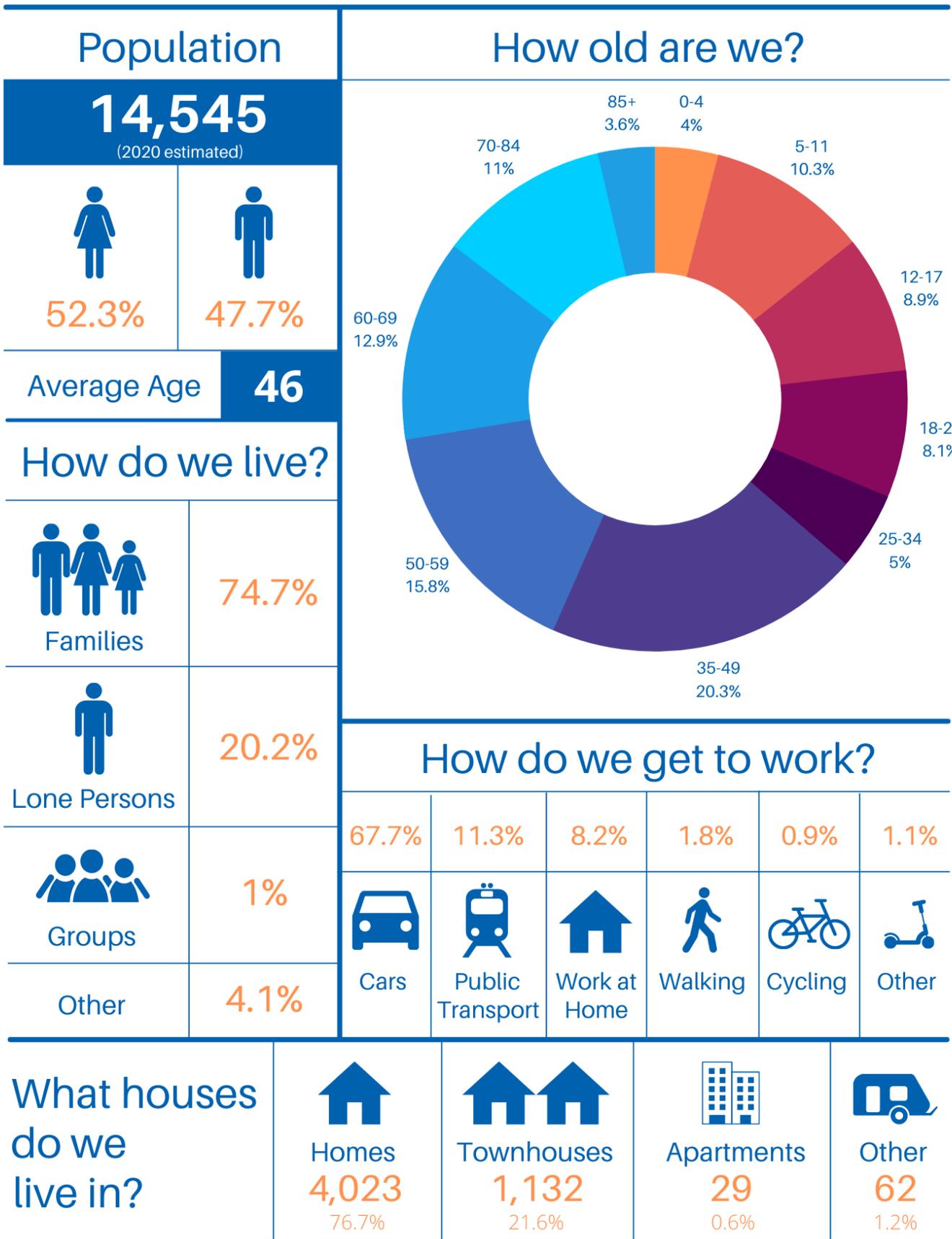
## Climate change

The effects of climate change are anticipated to significantly impact tree canopy and vegetation. Due to climate change, there will be an increase in severe weather events including more intense rainfall over summer, leading to more frequent and severe flooding events. Trees can play an important role in mitigating the impacts of a flooding event. The soil under trees and vegetation absorbs water as opposed to urban impervious surfaces where the water just runs (such as pavement and roofs). The leafy canopy of trees also spreads out the rainfall and slows it down. This gives more time for the soil underneath to absorb the rainfall, resulting in less and slower runoff. As a result, the risk of flooding is reduced. When flooding does still occur, the volume and speed of the flood will be reduced. This will also reduce the need for larger stormwater gutters and pipes.

## Mode of transport

In 2016, 67.7% of Beaumaris residents travelled to work by car compared to 64.1% in Greater Melbourne. Public transport is also limited to buses only, as there is no train station within the suburb, with the closest stations being Mentone (2.5 km), Cheltenham (2.8 km) and Sandringham (6.2 km).

# Beumaris Forecast for 2041



**Note:** Beumaris suburb population data is a 2020 estimation, which was retrieved from the Australian Bureau of Statistics (2020); all other data shown has been retrieved from profile.id (2016), and has been used as appropriate.

### **Beaumaris Case Study (2019)**

The Beaumaris Case Study was prepared by Bayside City Council in 2019 to highlight the unique and valued vegetation and tree character of the suburb. The case study identified key areas of improvement to grow and protect vegetation from new development and the effects of tree and vegetation loss.

Beaumaris has been identified as a suburb in Bayside that is experiencing significant 'tree canopy and vegetation loss, primarily as a result of new residential development'. Although new residential development is prevalent across Melbourne, the effects on vegetation and tree canopy coverage is particularly profound in Beaumaris, where the unique vegetation and tree canopy coverage is being lost in large amounts due to increasing site coverage. The case study also identifies that the effects of climate change, and the urban heat island are profound in environments that feature lower tree canopy coverage, especially in relation to ambient air and ground surface temperatures. Additionally, hard, non-permeable surfaces such as roads, carparks, footpaths, and other public spaces are contributing to the urban heat island effect, where tree canopies would provide valuable shade.

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, 72.80% of Bayside's streets and parks are without natural shade. Council-managed street and park trees are a major contributor to the urban forest across Bayside. There are over 66,000 trees managed by Council, spread throughout the municipality. Each year, Council plants an average of 1,400 trees in streets, parks and reserves across Bayside. In addition to this, in 2022, Council committed to plant 2,000 trees every year. Depending on the number of street upgrades, proposed park planting, identification of vacant tree sites and other opportunities that arise to plant trees, this commitment has ability to increase from year 2023 onwards.

## Aerial of Beaumaris



### Legend

-  Bayside LGA Boundary
-  Suburb

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14 December 2022

## The vision for Beaumaris's urban forest

Beaumaris's urban forest will be healthy, sustainable, properly managed and cared for, benefiting our community with improved environmental wellbeing while embracing indigenous and native vegetation.

## Planning controls applying to Beaumaris

Beaumaris is covered by the Vegetation Protection Overlay Schedule 3 (VPO3), which aims to prevent the loss of indigenous vegetation. VPO3 aims to retain the amenity, aesthetic character, and habitat value of vegetation within the area. Aside from the protection of indigenous vegetation, it also seeks to promote the regeneration and planting of vegetation in Beaumaris and neighbouring Black Rock. Permits are required to remove, destroy or lop any vegetation that is native to Australia in areas that are covered by the VPO3.

One Significant Landscape Overlay, SLO1, applies to Coral Avenue and Point Avenue in Beaumaris. This overlay directly relates to the cover of vegetation, to ensure the bushland character of the area is maintained. Several permit requirements of the overlay address native vegetation, the decision guidelines focus on the impact that proposed works would have on vegetation within the area.

The density of native canopy species, primarily Banksia species, is shown to be high within the SLO1 area, indicating that the overlay is aiding in the retention of revegetation.

### VPO controls: permit removals

The VPO3 specifies a number of indigenous species that are of local significance, which the overlay seeks to protect. Permits are not required for vegetation and trees that are less than 2 metres high, or with a single trunk circumference of less than 0.5 metre at a height of 1 metre above ground level. Additionally, a permit is not required for pruning a tree that overhangs within 2 metres of an existing dwelling. In 2020, there were 112 requests for tree removal within the VPO3, 69 of which were approved.

### Benefits of strengthening the VPO

VPO3 currently only applies to native Australian vegetation that is over 2 metres high or have a single trunk circumference of over 0.5 metres. As stated in the Actions of the Urban Forest Strategy, Council aims to amend Beaumaris's VPO3 protections to include non-native vegetation and to reduce the vegetation size requirements to trigger a permit. Council is seeking to strengthen the Vegetation Protection Overlays to strengthen our planning decision-making when it comes to trees and siting new development. Strengthening the VPO will support our objective to maintain existing trees and enhance Beaumaris's leafy character as well as provide a range of other benefits such as relief from the urban heat island effect, filter air pollutants and support mental health.

### Community feedback for VPO

Council's community feedback survey provided an insight into the community's views on VPO controls. We put forward the proposition to strengthen the VPO in Beaumaris and Black Rock to protect more vegetation including non-native existing canopy trees, which 76.1% of respondents supported. The survey also captured some VPO related suggestions that have been summarised below:

- VPO protections should be implemented across the whole of Bayside, particularly in Cheltenham, Highett and Hampton East which have the lowest tree canopy coverage in Bayside.
- Improve communication and education around VPO protections for residents and potential buyers in VPO-affected areas.
- Review and strengthen the wording of VPO decision guidelines to prioritise tree retention over replanting.
- Undertake habitat studies to support the VPO habitat decision guidelines.
- There needs to be stricter enforcement of the VPO controls.
- The process of removing a VPO protected tree is time consuming and expensive. This discourages residents from planting native trees in the first place due to the issues it could cause in the future.

### **Residential zone**

The majority of Beaumaris's residential land is zoned as Neighbourhood Residential Zone (NRZ) that is applied to areas where there will be minimal residential growth. The NRZ has a maximum building height of two-storey. Much of the residential growth in Beaumaris takes the form of dual occupancy, the redevelopment of detached dwellings or small multi-dwelling developments.

The architectural style of the houses in Beaumaris are predominantly a mix of mid-century modern and 1970s and 80s styles. There is also the presence of contemporary infill style development throughout the suburb and postwar dwellings closer to the coast. These houses are mostly detached and either single or double storey.

### **Heritage and Built Form Overlays**

There are several Heritage Overlays (HO) and Design & Development Overlays (DDO) upon land within the suburb that shape the way new development is delivered. Heritage Overlays in particular provide for the protection of heritage significant buildings and places.

### **Neighbourhood Amenity Local Law 2021**

Local Laws are laws utilised by Council to respond to issues and community needs within a local context. Within Bayside's Local Laws are guidelines around trees on private land. The law determines that any tree on private land is protected if the "*single or combined tree trunk circumference is 155 centimetres or more at one metre above ground level.*" If a tree is protected it means that a permit must be acquired from council in order to remove or prune it. The same permit requirements apply to any tree on Council's Significant Tree Register.

### **Landscape Guidelines**

A review of Bayside's Landscape Guidelines was adopted in December 2023. The changes have been made in response to the adopted Urban Forest Strategy action which outlines that Council must provide further guidance on species selection, sizes, and trees suitable for private property.

The revised landscape guidelines focus on improving the quality of tree plantings through soil type and volume, site characteristics, and correct species selection. This way, it can be ensured that canopy tree plantings that are selected are the largest and most ideal species for its location. This will provide the trees with a better chance of growing to maturity. By focusing on canopy spread, species selection can be refined for better canopy coverage and consideration of a tree's location.

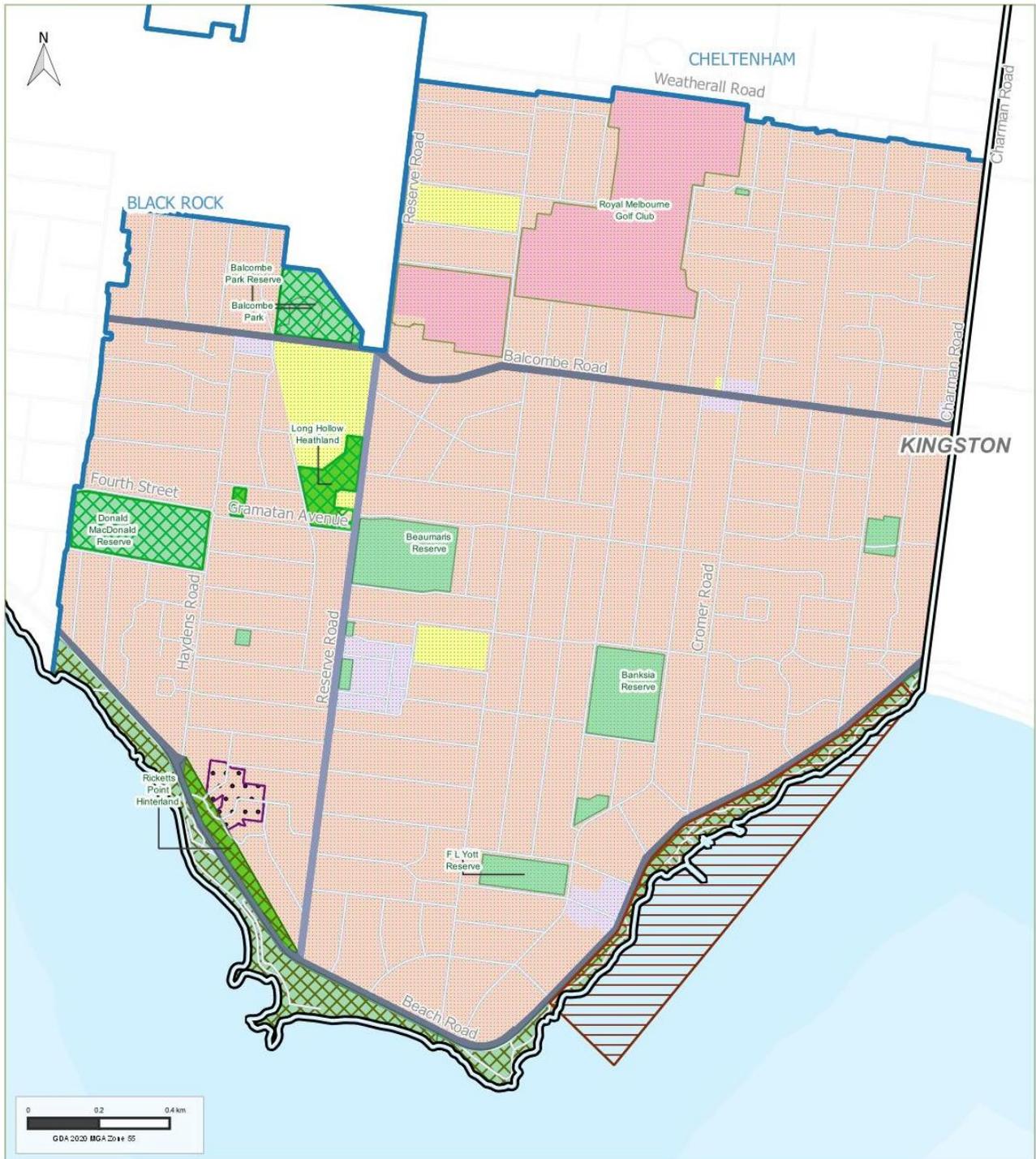
The changes to Bayside's Landscape Guidelines require new development to provide increases to the number of canopy trees and high-quality landscape outcomes. Furthermore, the Species Palette listed in the Appendix 3 to this Precinct Plan has also been utilised as the list of species to encourage selection from when preparing a Landscape Plan.

### **Local Law Review**

A key action of the Urban Forest Strategy includes reviewing the Management of Tree Protection on Private Property Policy. An update to the Local Laws Guidelines will protect more trees and strengthen alignment between planning and local law permit applications for tree removal.

The updated Local Law Guidelines will protect more trees by removing some permit assessment considerations, such as consideration for the number of other protected trees on the site, or neighbours support for removal. Trees will also now be assessed for its habitat value to native wildlife. For tree removal permit applications, special circumstances including medical conditions, disability, access safety or financial hardship will be referred to Council's Community Care unit. The Community Care unit will establish what support may be available to vulnerable resident and whether there is any reasonably practicable way to manage issues directly related to the tree other than removal.

**Map 2. Planning Controls in Beaumaris**



**Legend**

**Planning Zones**

- C1Z - Commercial 1 Zone
- GRZ - General Residential Zone
- NRZ - Neighbourhood Residential Zone

- PCRZ - Public Conservation and Resource Zone
- PPRZ - Public Park and Recreation Zone
- PUZ - Public Use Zone
- TRZ2 - Transport Zone 2- Principal Road Network
- TRZ3 - Transport Zone 3- Significant Municipal Road

**Planning Overlays**

- Significant Landscape Overlay
- Vegetation Protection Overlay 1
- Vegetation Protection Overlay 2
- Vegetation Protection Overlay 3

- Environmental Significance Overlay 1
- Bay side LGA Boundary
- Suburb
- Roads

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30 December 2022

# Beaumaris Neighbourhood Character

Beaumaris is a unique suburb that continues to entice new residents and visitors alike, who are attracted to the natural setting and distinguished vegetation, experimental postwar architecture and coastal lifestyle. To ensure that new development respects, supports and enhances the cherished character of suburbs such as Beaumaris, Neighbourhood Character Precincts exist to ensure that new development reinforces a sense of place by respecting the characteristics of the local environment.

In Beaumaris, there are two areas of similar character elements, with one encapsulating the inland area and the other the coastal area. In these two areas, dwellings are predominantly from the 1950s to 1970s with contemporary infill development. Both areas feature front setbacks of 6 to 8m and side setbacks of 1 to 2m on one side and 3 to 4 (including garages and driveways) on the other. These types of setbacks are less predominant for new residential development.

Beaumaris typically features established bushy gardens with a mix of indigenous and native species of shrubs and canopy trees. The street tree population is also made up of predominantly indigenous and native species, planted with a mix of irregular and regular spacing and sizes.

## Examples of neighbourhood character across Beaumaris:



**Map 3. Beaumaris Neighbourhood Character Precincts**



**Legend**

- Bayside LGA Boundary
- Neighbourhood Character Precinct
- Suburb
- Local Road
- Council Land
- Golf Club

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22 December 2022

# The Urban Forest of Beaumaris

In Beaumaris, there is approximately 19.86% of tree canopy cover and 18.1% of understorey cover (2018). The urban forest of Beaumaris is large and expansive, encompassing a distinct character of native and indigenous trees and understorey planting, which contribute to a highly biodiverse environment. Together with established gardens, distinctive parks, reserves, and an extensive foreshore environment, Beaumaris has a unique urban forest character.

## History

Beaumaris has undergone significant change in its urban forest, changing substantially since first post-contact settlement, by way of property development, the introduction of non-indigenous vegetation and changes to the landscape. Prior to first contact, the lands that make up what Beaumaris is today, were inhabited by the Bunurong people of the Kulin Nation. The landscape was made up of grassy woodlands, healthy scrub, coastal dune grasslands and sedgy swamp woodlands.

Post-contact settlement began in the 1850s, but it was often contained to small areas with most land being lost to bushfires in 1944. Beaumaris was to be developed into an industrial area by Dunlop Perdriau, planned in the 1930s, but was shelved during WWII, and instead was subdivided to make way for residential development. The residential environment that now makes up Beaumaris mostly began in the postwar period, with many homes, gardens and planting patterns experimenting with new techniques, materials and plant species.

As development increased in the post-war period, distinctive native and indigenous species continued to contribute to the character of the area.

Alongside the substantial residential development of the period, conservation reserves were also established at the Gramatan Avenue Heathland Sanctuary and the Long Hollow Heathland, developing these sites into protected conservation zones.

## Contemporary issues impacting Beaumaris' urban forest

There are a number of contemporary issues impacting the urban forest of Beaumaris, challenging not only humans but also the natural environment. Issues associated with climate change, such as the urban heat island effect and erratic weather events, are impacting environmental and ecological conditions, and the health and viability of tree and ground cover vegetation.

Increasing residential development, and the removal of trees and understorey vegetation is also a contemporary issue facing Beaumaris. The removal of established gardens, large trees and understorey plantings is contributing to a loss of the distinct vegetation character and impacting the biodiversity of Beaumaris.

For new developments on private and public land, Council considers all possible design solutions and ensures the application has met all relevant criteria. However, even with these measures in place, the removal of tree and understorey vegetation is an issue facing the entirety of Bayside and is generally consequential to the increases in development and the limitations on permeable surfaces appropriate for planting. Other issues impacting the urban forest include:

- Trees nearing the end of their useful lifespan can also create safety issues particularly for more vulnerable residents. As a tree becomes older it loses its vitality as is more prone to falling or losing limbs. Council monitors the health of its trees to ensure any hazardous trees are removed.
- Vandalism of public and private trees is another issue contributing to tree canopy loss across Bayside. Illegal removal, lopping or poisoning of trees occurs throughout Bayside by members of the public for personal gain. Another common example is the vandalism of trees to limit fruit, berry or leaf drop on footpaths and private property. A hotspot of this activity is along Beach Road where canopy trees are vandalised to gain better views of Port Phillip Bay. Unpermitted removal, destruction, pruning and interference with trees and vegetation is illegal in Bayside. To deter vandals, Council has adopted a strong stance on vandalism and has installed signs and advertised on social media platforms an offering of rewards for information when an act of vandalism has occurred.



**Image 1.** The Gramatan Avenue Heathland Sanctuary, an example of a Habitat Conservation Reserve in Beaumaris



**Image 2 & 3.** The Long Hollow Heathland, another example of a Habitat Conservation Reserve in Beaumaris

## Tree canopy cover across Beaumaris and various land uses

In Beaumaris, there is approximately 19.86% tree canopy cover and 18.1% vegetation cover (2018). While this Precinct Plan looks to increase tree and vegetation cover on public land, it is recognised that a large portion of trees are within the residential zone and within nature strips.

Private residential areas cover 63% of land in Beaumaris, streets are 19% and public use and reserves cover about 19% of the total area of Beaumaris. Private areas and the streets provide the greatest opportunity to increase greening in the area.

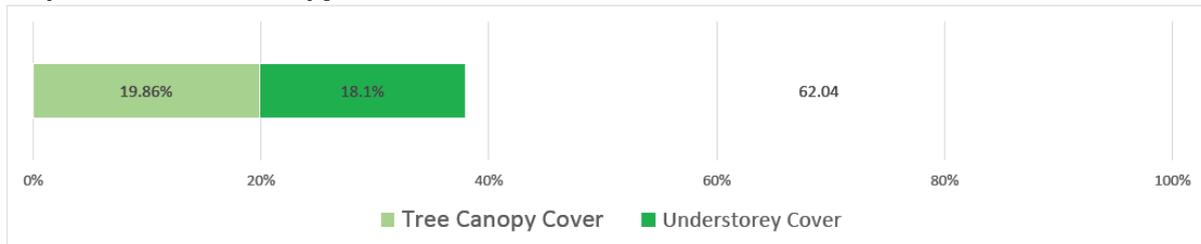
The Beaumaris Concourse falls under Commercial 1 Zone (C1Z) and has limited setbacks, the buildings are generally built to the boundary and, due to footpath activation, the opportunity to plant more trees is limited. In such areas, innovative ideas like green roofs and walls are the most appropriate to increase greening.

At the beginning of 2021, there were 8,584 trees managed and maintained by Council throughout Beaumaris, with over 6,900 street trees, 1,580 park trees and 29 other location-specific trees. Monitoring the age, health and useful life expectancy of these trees is important to ensuring that Council understands the local conditions, maintains tree and understorey plant populations, and effectively plans for future planting programs and strategies across Beaumaris.

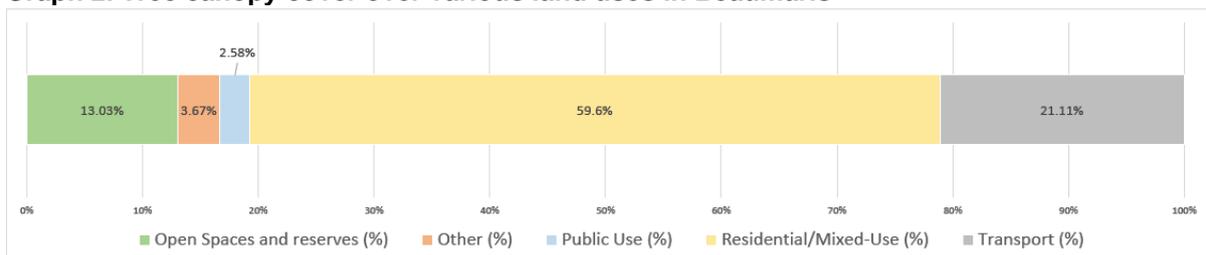
Outside of this Precinct Plan, Council is strengthening local laws and planning controls on private property whilst also encouraging the increase of vegetation and high-quality landscaping outcomes.

In Beaumaris, there is approximately 20% tree canopy cover and 18% understorey cover. The suburb of Beaumaris will be a major contributor towards achieving Council's goal of 30% canopy cover by 2040.

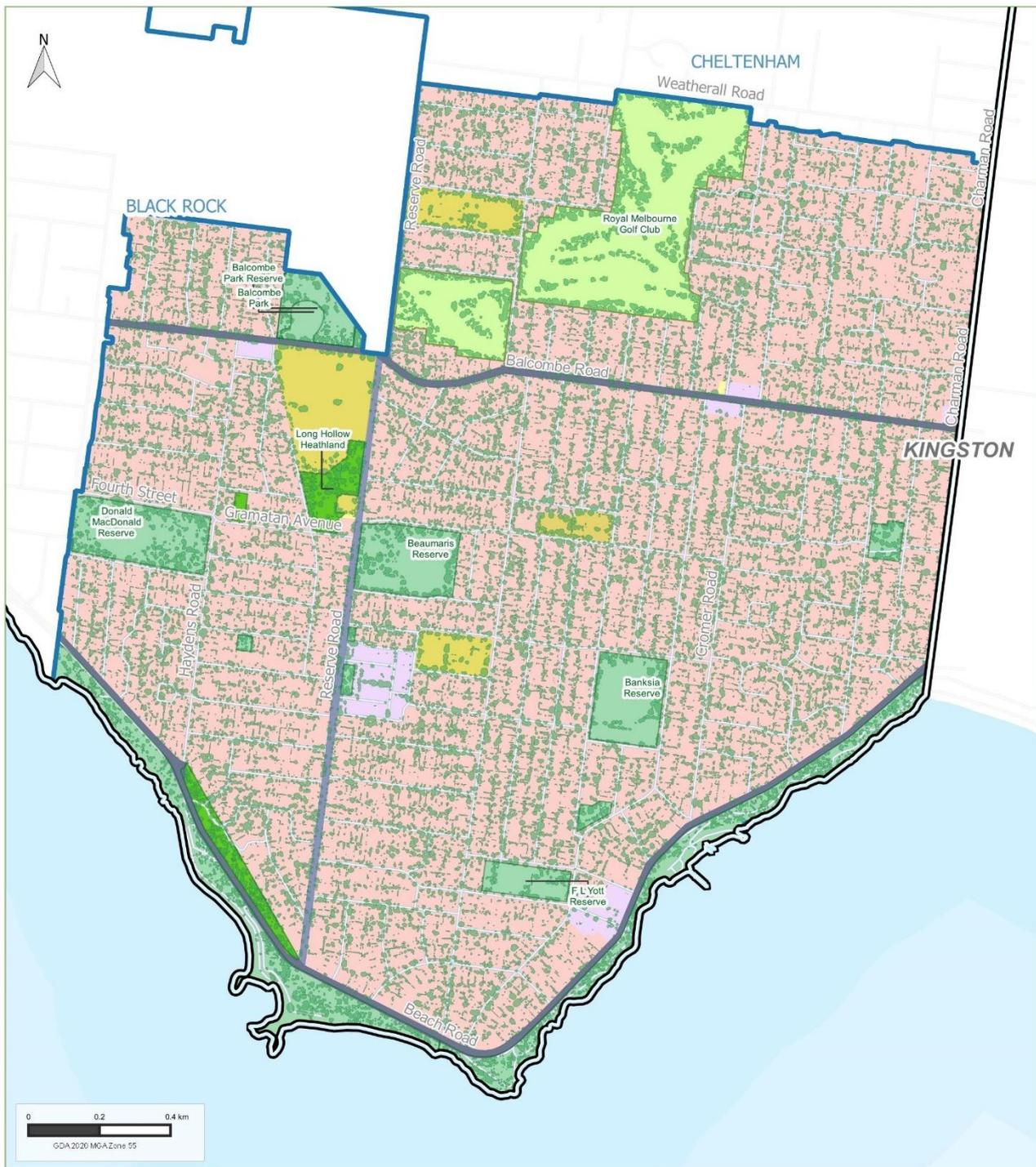
**Graph 1. Total tree canopy cover in Beaumaris**



**Graph 2. Tree canopy cover over various land uses in Beaumaris**



**Map 4. Tree Canopy Over Beaumaris**



**Legend**

- Bayside LGA Boundary
- Suburb
- Tree Canopy - October 2019
- Education (Government or Independent)
- Roads
- Golf Club - Private
- Planning Zones**
  - C1Z - Commercial 1 Zone
  - GRZ - General Residential Zone
  - NRZ - Neighbourhood Residential Zone
  - PCRZ - Public Conservation and Resource Zone
- PPRZ - Public Park and Recreation Zone
- PUZ - Public Use Zone
- TRZ2 - Transport Zone 2- Principal Road Network
- TRZ3 - Transport Zone 3- Significant Municipal Road

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# Council-managed Tree Population

## Useful life expectancy (ULE)

Estimating the useful life expectancy of the Council-managed tree population is regularly undertaken and can inform future management options for trees that have limited useful life left. The assessment of a tree's useful life expectancy provides an indication of the tree's health and appropriateness. It also involves an estimate of how long a tree is likely to remain in the landscape based on species, stage of life (cycle), health, amenity, environmental services contribution, conflicts with adjacent infrastructure and risk to the community.<sup>2</sup> It is not a measure of the biological life of the tree within the natural range of the species, but more a measure of the health status and the tree's positive contribution to the urban landscape.<sup>2</sup>

There are approximately 7% of council-managed trees that will not survive in Beaumaris after the next 10 years. By 2040, a total of 72% council-managed trees will have reached the end of their useful life expectancy and will need to be replaced. It is vital that the replacement trees are diverse in species and planted intermittently to enable for varying ages and maturity.

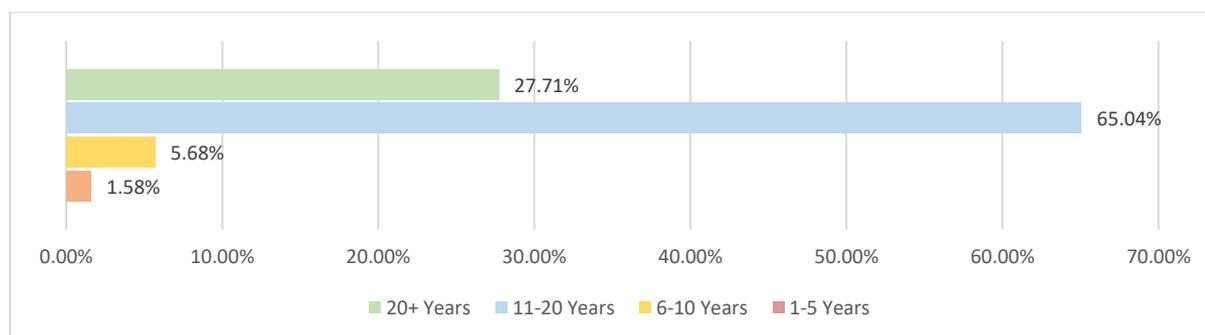
Beaumaris foreshore and its parks and reserves have a high concentration of trees that will need to be replaced in the next 10 years.

In Beaumaris, approximately 7% of council-managed trees are anticipated to reach the end of their Useful Life Expectancy over the next 10 years. Map 5 shows the location of trees with low ULE and the locations where the concentration of these trees is high.

To address this challenge, Council will undertake an extensive and diverse tree planting program that is geographically spread and evenly paced in process to allow for a diversity of age and species. A diversity of tree age will allow for a more resilient and healthy urban forest.

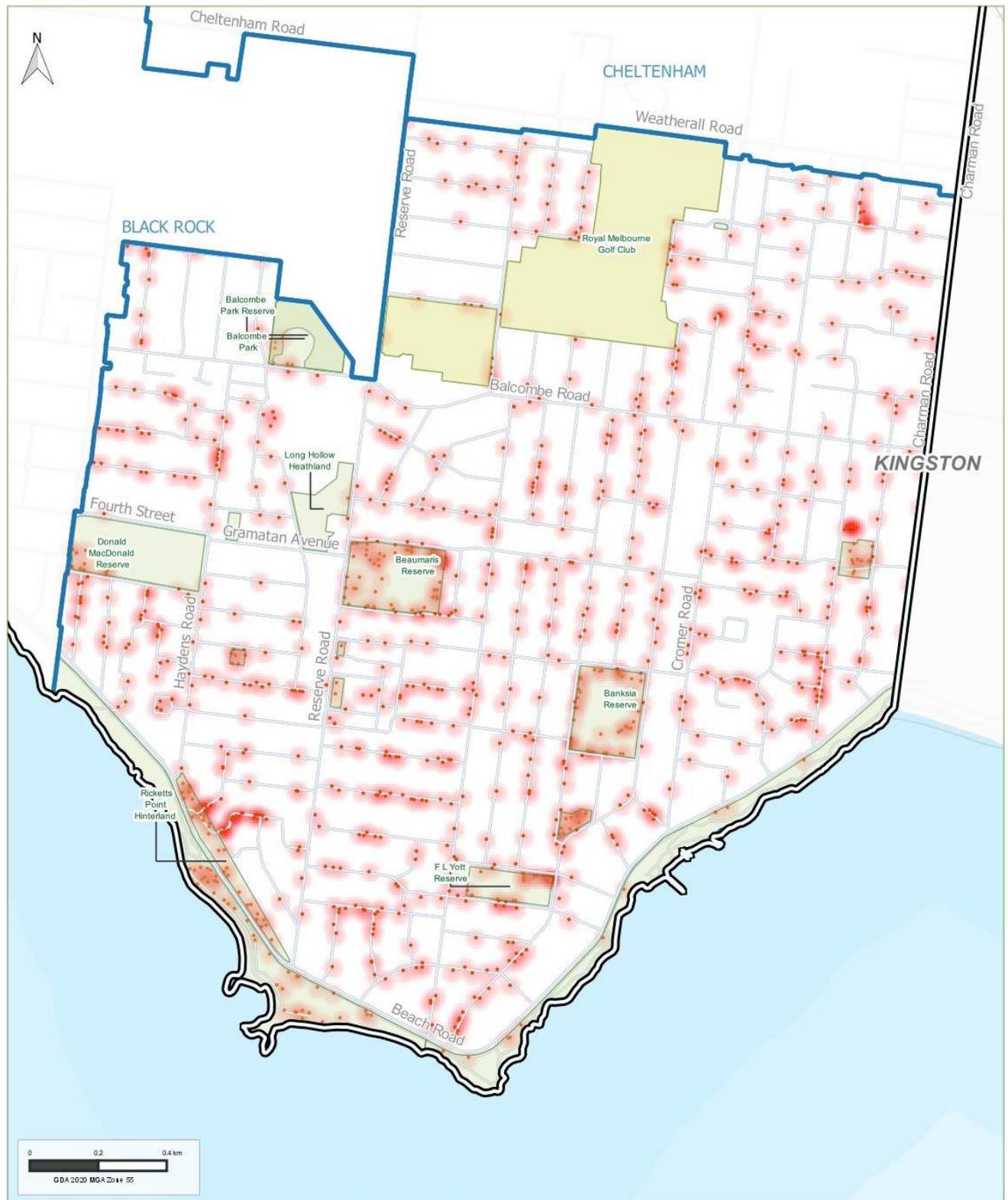
Where it has been found that trees reaching the end of their useful life still provide benefit and habitat, they should be retained as habitat trees as per the Tree Risk Assessment Tool (TRAQ).

**Graph 3. Useful life expectancy of council-owned trees in Beaumaris**



<sup>2</sup> Department of Health and Human Services, 'Arboricultural Assessment Holland Court, Flemington– 3.7 Useful Life Expectancy(ULE)', 2017, Available at [https://www.planning.vic.gov.au/\\_data/assets/pdf\\_file/0011/105500/SHRP-SH1-15.a.-Tree-Logic-Rpt\\_Holland-Court,-Flemington.pdf](https://www.planning.vic.gov.au/_data/assets/pdf_file/0011/105500/SHRP-SH1-15.a.-Tree-Logic-Rpt_Holland-Court,-Flemington.pdf)

Map 5. Location of Trees with Low ULE in Beaumaris



**Legend**

- Low ULE Tree
- Bayside LGA Boundary
- Council Land
- Suburb
- Golf Club
- Roads

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## Tree health and age

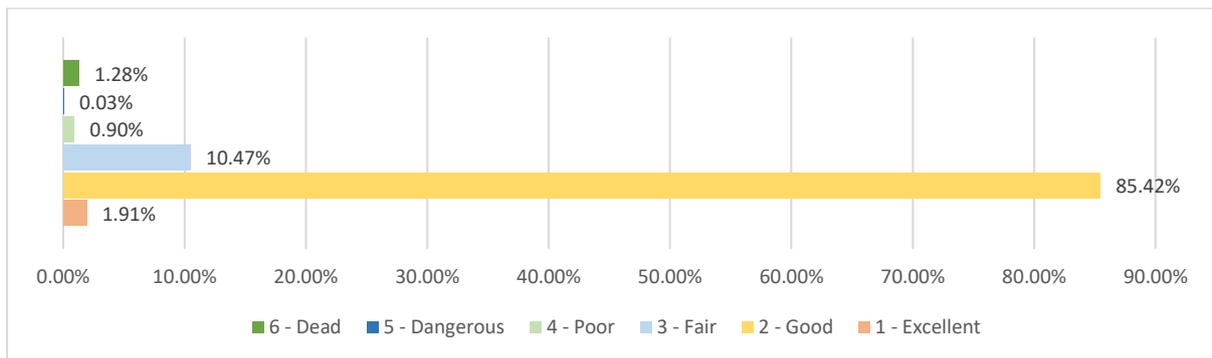
The climate and soil conditions in Beaumaris can be challenging, which affects a tree's health and ability to grow and mature. Dark grey type of sand is more likely to be found in Beaumaris. Drainage may sometimes be impeded by a clay subsoil or perched water table. Urban soils are generally highly disturbed, often highly compacted and the soil profile at any particular site may differ significantly from an adjacent site. Trees planted in streets close to Port Phillip Bay must be tolerant, to some extent, of salt spray and salinity.

In 2022, 85% of the council-owned street and park trees in Beaumaris were classified as being in 'good health', while 2% were classified as 'excellent'. Trees that are classified as poor, dangerous or dead make up about 3% of street trees and trees in parks concentrated on the foreshore. Data on tree age and maturity demonstrates a reasonable level of diversity in the age of Beaumaris's trees. As seen in Graphs 4 and 5 below, showing tree health and age respectively, the highest proportions are semi-mature and new trees, making up 31% and 37% respectively.

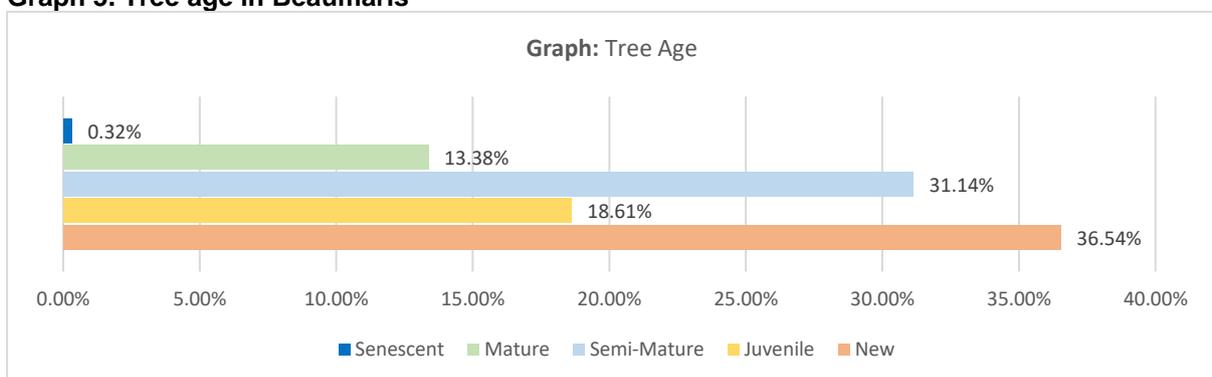
Map 6 indicates where tree health is poor, dangerous and dead. Street trees that are dead or dying trees with natural hollows on the foreshore and in parks can provide habitat for fauna. The map shows the concentration of dead trees on the foreshore that are providing habitat. Through the continued use of the Tree Risk Assessment Tool, Council will retain those trees and vegetation that provide a service to the ecosystem.

In 2022, 85% of the Council owned street and park trees in Beaumaris were classified as being in 'good health'. Trees that are classified as poor, dangerous or dead make up for 3%. Through the continued use of the Tree Risk Assessment Tool, Council will retain the trees and vegetation that provide a service to the ecosystem.

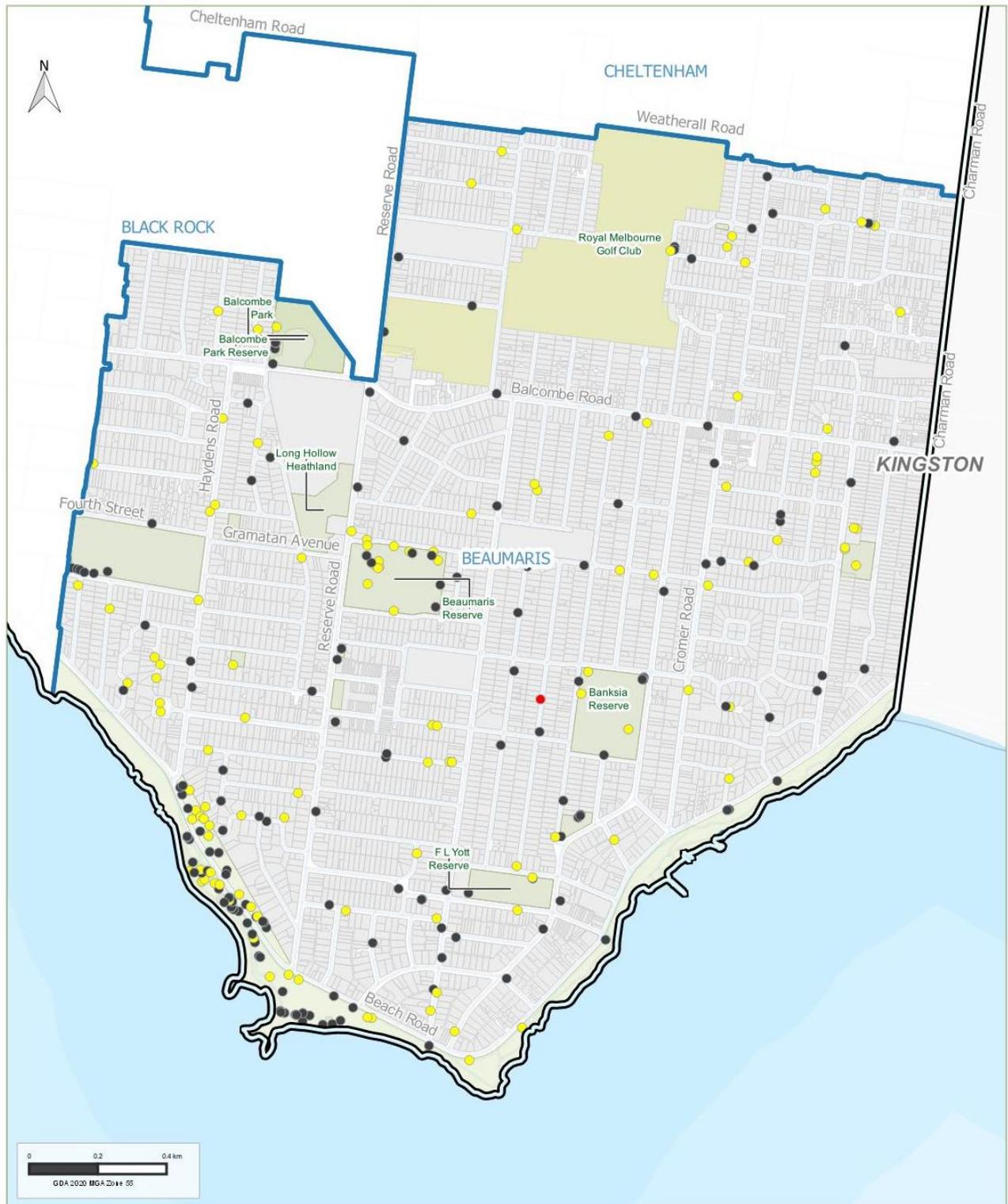
**Graph 4. Tree health in Beaumaris**



**Graph 5. Tree age in Beaumaris**



**Map 6. Tree Health in Beaumaris**



**Legend**

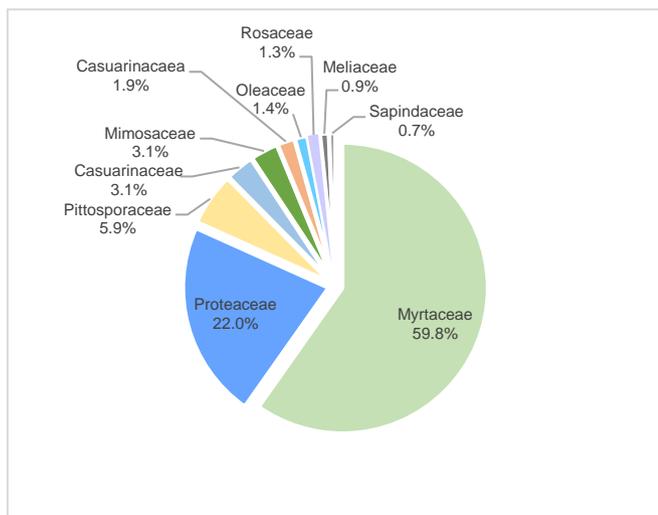
- |             |                       |
|-------------|-----------------------|
| Tree health | Bay side LGA Boundary |
| Poor        | Suburb                |
| Dangerous   | Property Boundary     |
| Dead        | Council Land          |
|             | Golf Club             |

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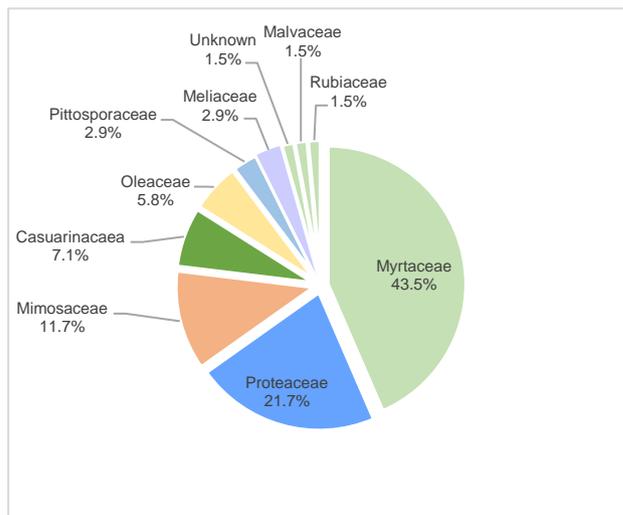
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## Species diversity

A resilient urban forest has a diverse range of species from different families. As seen in graphs 6 and 7, Beaumaris's street and park trees are largely dominated by *Myrtaceae* making up 60% of all street trees and 47% of all park trees. The *Proteaceae* family follows making up 22% of all street trees and 23% of all park trees, with other families making up about 18% of street trees and 30% of park trees. There is a small percentage of the council- managed trees in Beaumaris that are unknown species.



**Graph 6. Diversity of street tree species in Beaumaris**



**Graph 7. Diversity of park tree species in Beaumaris**

According to the Council's arborist, the unknown species referred to in Graph 7 consist mostly of indigenous trees along the coastline. These species include trees from the *Casuarinaceae* and *Pittosporaceae* families.

The reliance on a small number of species, and a lack of spatial diversity in species distribution leaves the urban forest vulnerable to threats from pests and disease.

Diversification of the family composition of the urban forest was a key challenge that was previously identified in the *Bayside Street and Park Tree Guide* and reiterated within the *Bayside Urban Forest Strategy*.

The following families currently form part of the overall tree population in Beaumaris's streets and parks at a significantly lower percentage than the *Myrtaceae* family. The inclusion and increase of these families should be targeted through the actions and implementation of this Precinct Plan, ensuring that different types of trees align with the neighbourhood character of the surrounding locality:

- *Oleaceae*
- *Pinaceae*
- *Pittosporaceae*
- *Rosaceae*
- *Platanaceae*
- *Casuarinaceae*
- *Mimosaceae*

Through the Park Improvement and Habitat Linkage Plan, Council will undertake tree and vegetation planting to support specific habitat locations, encourage the rebuilding of ecological foundations and improve species diversity in Bayside.



**Image 4:** Street trees in front of the private residence providing afternoon shade in Beaumaris

In order to improve species diversity, Council is undertaking investigations through its *Park Improvement and Habitat Linkage Plan* to understand which species (trees and vegetation) would best support specific locations in Bayside and encourage the rebuilding of the ecological foundations in Bayside.

Currently, Beaumaris's street and park tree population is largely dominated by the *Myrtaceae* family (eucalyptus etc.), making up 63% of all street trees and 46% of all park trees.

## Understorey planting in Beaumaris

This section investigates the potential habitat and biodiversity corridors in Beaumaris across public and private land, to understand where further opportunities are to increase habitat connectivity and improve biodiversity.

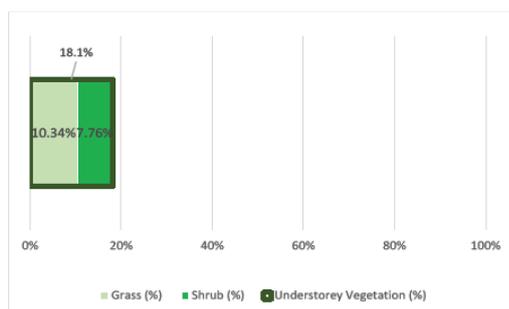
Understorey vegetation includes small trees, shrubs, herbs, grasses, mosses and lichens that occupy the vegetation layers below the canopy of taller trees.<sup>3</sup> Bayside's *Urban Forest Strategy* has three major goals to ensure the increase and improvement of the urban forest and the functions it serves. Two of these goals recognise the importance of understorey planting.

The Urban Forest Strategy includes a strategic objective to support and enhance our local biodiversity and protect locally endangered and native species. This will be achieved by improving habitat connectivity and the protection and planting of Ecological Vegetation Classes (EVCs) through the implementation of the *Park Improvement and Habitat Linkage Plan 2022*. This plan involves identifying suitable locations to prioritise understorey planting.

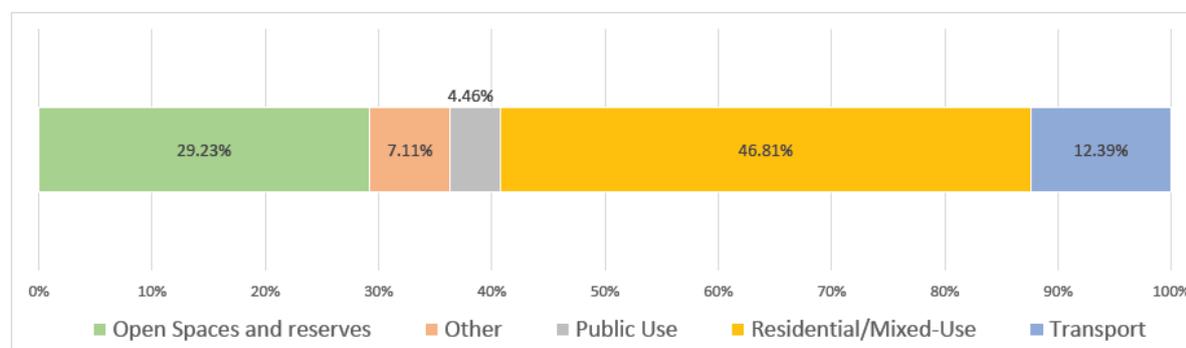
Map 7 shows percentage coverage of understorey planting in Beaumaris. The public areas have only 4.5% understorey planting coverage whereas the streets of Beaumaris have between 9% to 11%. The residential areas have only 14% coverage on average.

Council's priority will be to add more understorey planting on the streets and mixed use zones where it is currently lacking as well as to encourage residents to have biodiverse gardens with indigenous and native plants.

**Graph 8. Percentage distribution of understorey vegetation as grass and shrubs**

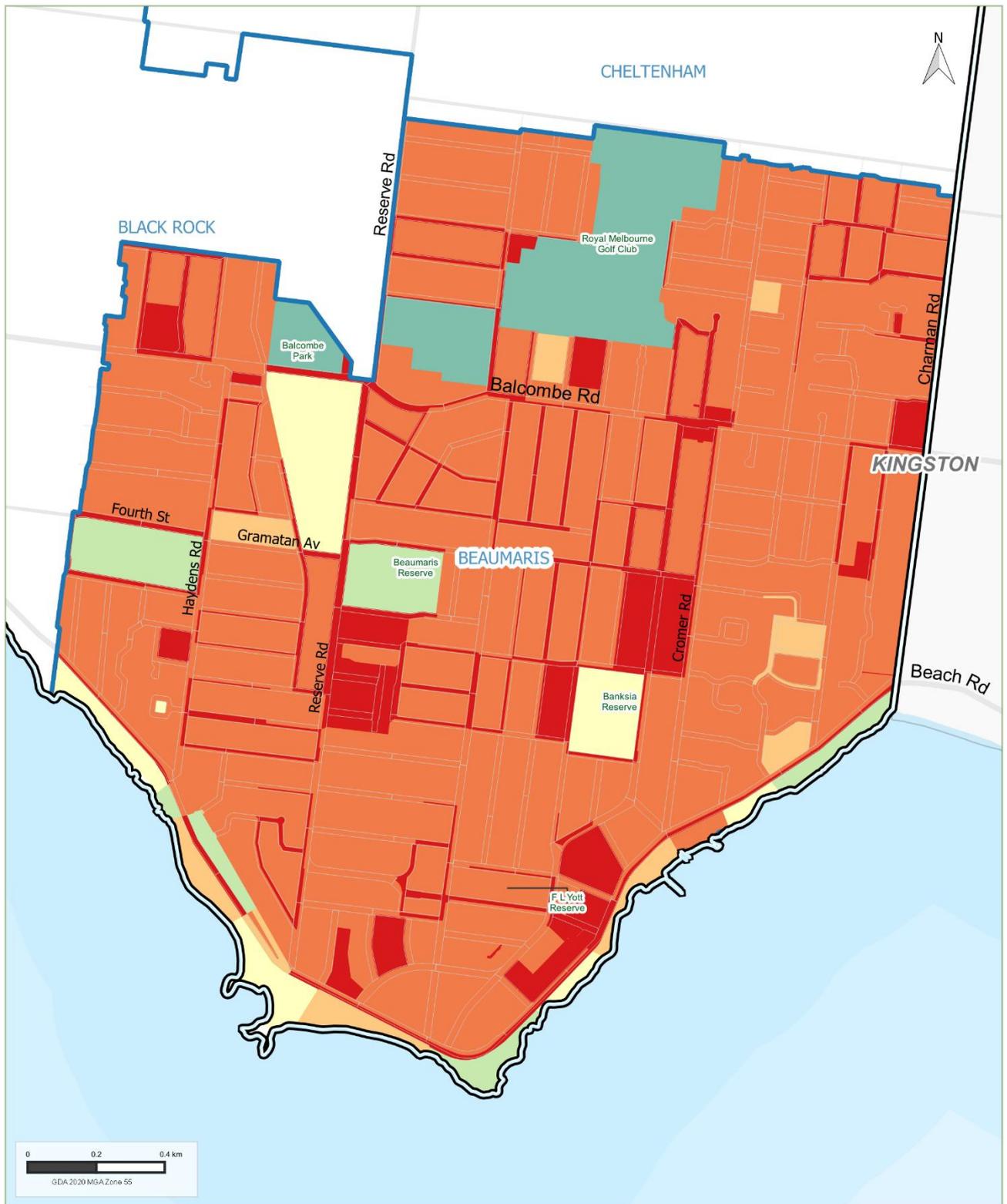


**Graph 9. Percentage Distribution of total understorey vegetation in different land uses**



<sup>3</sup> Land for Wildlife Queensland, 'The Value of Understorey Vegetation' Note V6, available at: <https://www.lfwseg.org.au/wp-content/uploads/2016/11/The-Value-of-Understorey-Vegetation.pdf>

**Map 7. Understorey Planting in Beaumaris**



**Legend**

Understorey Planting Percentage

- 0 to 10%
- 10% to 20%

20% to 30%

30% to 40%

40% to 50%

50% to 60%

Bayside LGA Boundary

Suburb

Council Land

Golf Club

Roads

- Arterial
- Sub-Arterial
- Collector
- Local Road

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# Urban Heat Island

## Urban heat island effect in Beaumaris

Urban heat island effect is the phenomenon of dense urban areas having significantly warmer air and land surface temperatures than surrounding areas.<sup>4</sup> It is primarily a result of impervious hard surfaces that generate heat and low vegetation cover that fails to provide adequate shade and natural cooling. Urban heat data was captured in 2018 and provided in Map 8. The urban heat data shows how many degrees in Celsius the average temperature within the urban parts of the suburb is above or below the non-urban baseline. The data was captured in 2018 and the spatial areas are mesh block levels.

Map 8, the Urban Heat Map, illustrates that the north-eastern areas of Beaumaris will reach threshold temperatures for heat related illness in vulnerable populations more often and for longer than surrounding areas of the suburb.

The urban heat island is primarily a result of impervious hard surfaces that generate heat and low vegetation cover that fails to provide adequate shade and natural cooling.

Anticipated population growth means that more people will be at risk during extreme weather events. The urban forest will provide an array of environmental benefits that will contribute to creating resilient and sustainable places for people to live and work safely from such extreme weather events. Some of the significant benefits that our tree canopy and understorey planting 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 area.

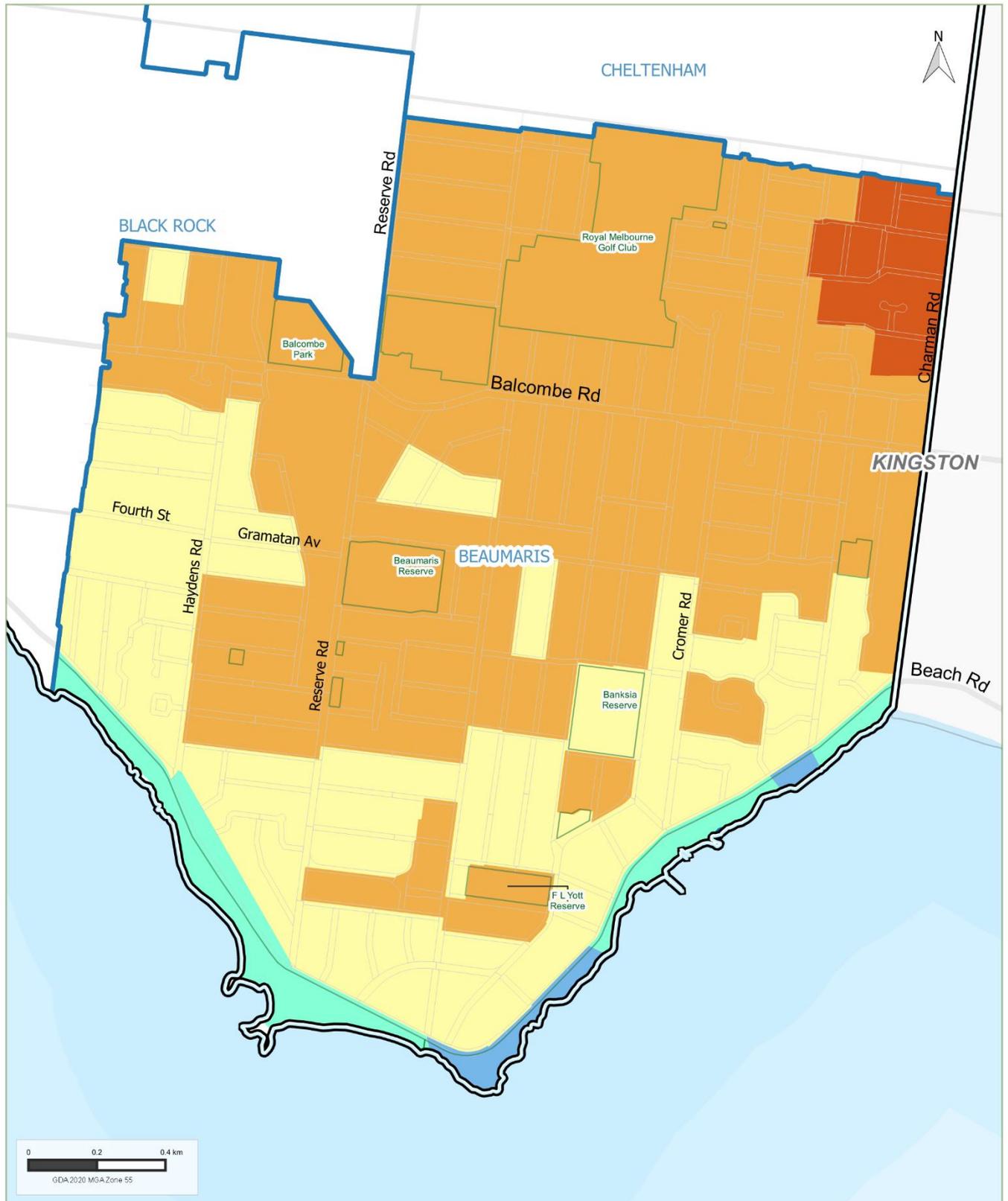
Council will prioritise planting on Council land in the northern areas of Beaumaris through a tree planting program.

Due to larger areas that have impervious hard surfaces, that generate heat, and low percentage of understorey planting, the north-eastern area of Beaumaris will reach threshold temperatures for heat related illness in vulnerable populations more often and for longer than surrounding areas of the suburb.

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<sup>4</sup> Resilient Melbourne and The Nature Conservancy, 'Living Melbourne – Our metropolitan Urban Forest', 2019, Available at [https://livingmelbourne.org.au/wp-content/uploads/2022/10/Strategy\\_online.pdf](https://livingmelbourne.org.au/wp-content/uploads/2022/10/Strategy_online.pdf)

**Map 8. Urban Heat in Beaumaris**



**Legend**

- |                 |               |              |                      |
|-----------------|---------------|--------------|----------------------|
| Urban Heat (°C) | 6.5 - 8.5     | Golf Club    | Collector            |
| 0 - 2.5         | 8.5 and above | Roads        | Local Road           |
| 2.5 - 4.5       | Council Land  | Arterial     | Bayside LGA Boundary |
| 4.5 - 6.5       |               | Sub-Arterial | Suburb               |

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# Biodiversity Assessment

Council undertook a desktop biodiversity assessment to inform the *Urban Forest Strategy*. The assessment area included the entire municipality but this section will focus on Beaumaris and discuss the results from the consultant's report.

The purpose of the desktop biodiversity assessment was to assess the existing ecological values present within the Council area and identify key areas where biodiversity could be improved.

## Strategic Biodiversity Value Score

Council undertook a desktop biodiversity assessment to inform the *Urban Forest Strategy*. The assessment area included the entire municipality, but this section will focus on Beaumaris and discuss the results from the consultant's report.

The Strategic Biodiversity Value (SBV) is a ranking system developed by DTP that ranks the biodiversity contribution that a location has to Victoria's overall biodiversity. The SBV is presented as a score ranging between 0 and 1 and is mapped across all areas of Victoria.<sup>5</sup>

A review of the SBV scores mapped within the Council region was undertaken, with the results shown on Map 9. While the majority of Beaumaris did not present a high SBV score, there were a few key areas where the score is higher, between 0.8 – 1, indicating that these areas have a higher conservation value. Specifically, these areas included:

- Ricketts Point
- Beaumaris Beach Foreshore Reserve
- vegetation on Foreshore area opposite Sparks Street

The remainder of the foreshore reserve generally has an SBV score between 0.2 and 0.4, where native vegetation persists between the road and water's edge.

All of these 56 areas exist on public land, and are expected to remain in a similar condition, preserving their ecological values.

The focus should be on ensuring the SBV scores modelled within these areas do not decrease, by promoting native vegetation restoration and plantings in these areas when required.

## Ecological Vegetation Classes (EVCs)

As a part of this study a review of Ecological Vegetation Classes (EVCs) model was undertaken. A total of 10 EVCs were modelled within the Bayside area. The modelled distribution of the 2005 DELWP mapping extent highlights that much of the study area has been cleared, and no longer represents the EVCs. This is largely due to the extensive residential development that has occurred, and the associated road, rail and commercial development.

In the context of the Council area, all EVCs can be viewed as endangered regardless of their bioregional conservation status, as all have undergone a dramatic reduction in cover since post-contact settlement of the area.

The EVCs modelled to occur within Beaumaris are predominately grassy woodland, damp sands herb-rich woodland and heathy woodland, with the foreshore areas containing a mix of coast Banksia woodland and coastal headland scrub.

The desktop biodiversity assessment recommends that the focus should be on ensuring the future canopy cover of Beaumaris is maintained or increased beyond the current levels; given the existing density of native tree canopy species within the area. It also recommends that an assessment of the life expectancy of trees within this area should be undertaken, with native trees planted in areas where the existing trees are nearing the end of their life expectancy. It also recommends that the original vegetation of the area should be restored.

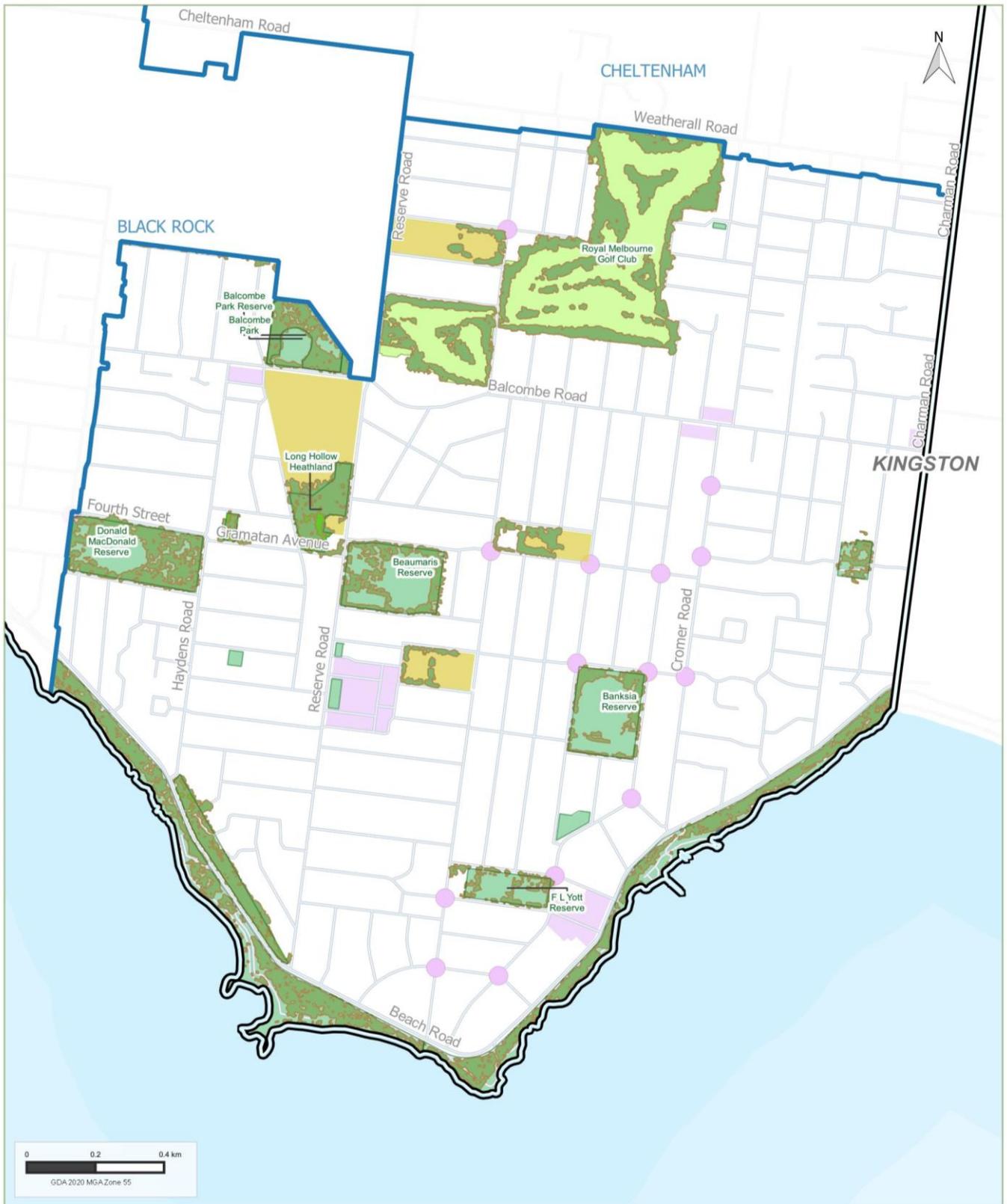
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<sup>5</sup> Desktop Biodiversity Assessment for the Urban Forest Strategy, Bayside City Council (2022)

Map 9. Biodiversity Value Score



**Map 10. Ecological Vegetation Classes**



**Legend**

- |                      |                                       |  |  |
|----------------------|---------------------------------------|--|--|
| Bayside LGA Boundary | Core Habitat Patches                  | <b>Planning Zones</b>                        | PPRZ - Public Park and Recreation Zone |
| Suburb               | Council Land                          | C1Z - Commercial 1 Zone                      |  |
| Golf Club - Private  | Education (Government or Independent) | PCRZ - Public Conservation and Resource Zone |  |
| Roads                |                                       |  |  |
| Roundabouts          |                                       |  |  |

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# Park Improvement and Habitat Linkage Plan

A key outcome sought from *Park Improvement and Habitat Linkage Plan 2022* is to identify where vegetation planting can be implemented or improved. This will help to link areas of open space and provide habitat corridors and to prioritise areas for immediate planting on Council's land.

The objective of the plan is to assist in increasing the diversity of indigenous and native plantings in Council-owned open space outside the conservation reserve system and strengthen the connections between natural areas.

## Conservation reserves in Beaumaris

- Beaumaris Foreshore – north
- Ricketts Point Landslide and Foreshore
- Balcombe Park
- Donald MacDonald Reserve
- Gramatan Avenue Heathland Sanctuary
- Long Hollow Heathland.

Two major actions identified in the *Park Improvement and Habitat Linkage Plan* that correspond to the Beaumaris Precinct Plan are:

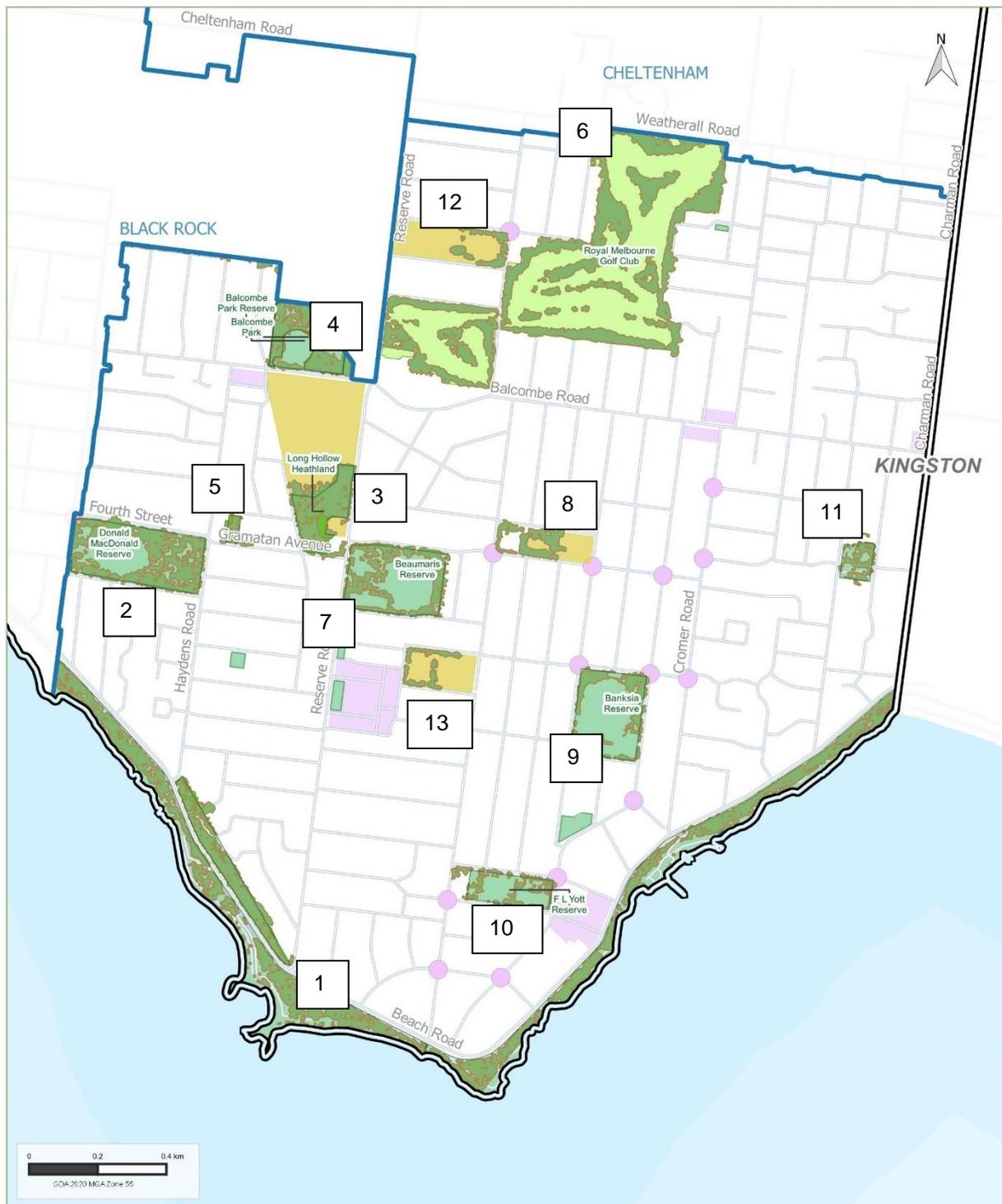
**Streetscapes** – Wherever possible, increase the extent of indigenous understorey vegetation in verges, nature strips, roundabouts, traffic islands and edges of carparks or other less frequented or unused areas.

**Parklands** – Expand on areas of existing native vegetation (both patches and individual trees) with dense understorey plantings, or identify locations for additional native plantings, to create structurally diverse '*habitat planting zones*'.

## Core habitat patches

1. Foreshore
2. Donald Macdonald Reserve
3. Long Hollow Heathland
4. Balcombe Park Reserve
5. Heathland Sanctuary
6. Golf Course
7. Beaumaris Reserve
8. Open space next to Stella Maris Church
9. Banksia Reserve
10. Beaumaris Bowls Club
11. Illaroo Reserve
12. Beaumaris Oval attached to Beaumaris North Primary School
13. Open space next to Beaumaris Primary School

### Map 11. Core Habitat Patches



Legend	
Bayside LGA Boundary	Core Habitat Patches
Suburb	Council Land
Golf Club - Private	Education (Government or Independent)
Roads	C1Z - Commercial 1 Zone
Roundabouts	PCRZ - Public Conservation and Resource Zone
	PPRZ - Public Park and Recreation Zone

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### **Priority Habitat Improvement Areas**

Priority habitat locations are primarily associated with parks or reserves that currently support High-quality habitat values (such as bushland or foreshore reserves) or have the potential to provide core habitat with further investment through on-ground plantings and complimentary habitat structures.<sup>6</sup>

Priority Habitat Improvement Areas identified in Beaumaris are:

- Balcombe Park Reserve/Balcombe Park
- Long Hollow Heathland
- Beaumaris Reserve
- Donald McDonald Reserve
- Gramatan Avenue Heathland Sanctuary
- Banksia Reserve
- Ricketts Point foreshore
- Beaumaris foreshore
- Victoria Golf Club

### **Priority Linkage Improvement Areas**

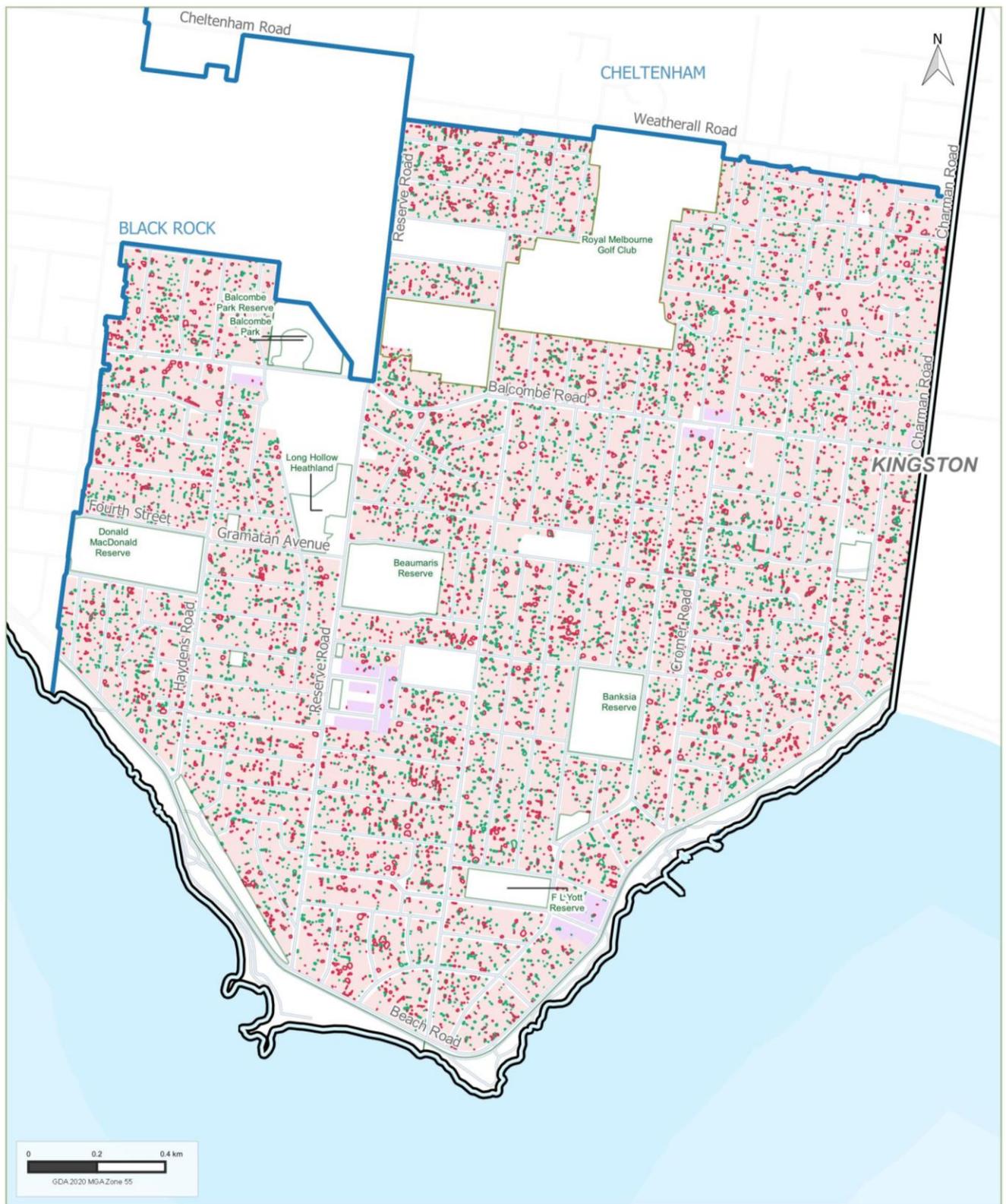
Linkage Improvement Areas are primarily associated with public road reserves with the objective being to increase the functional diversity of vegetation within these areas to improve connectivity for broader range of species.<sup>6</sup> Locations of priority linkages identified across the municipality have been restricted to public land, except for limited instances within privately owned golf courses.

- Donald MacDonald Reserve to Foreshore via Fifth Street and / or Surf Avenue
- Beaumaris Reserve to Beaumaris Foreshore via Victor Street/Dalgetty Road / Cloris Ave / Griffiths Steet / Gibbs Street / Oak Street / Cromb Avenue / Tramway Parade / Ray Street / Bodley Steet / Scott Street /Charlotte Road
- Banksia Reserve to Foreshore via Oak Street / Griffiths Street / Tramway Parade / Ray Street / Cromb Avenue / Banksia Avenue
- Long Hollow Heathland to Heathland Sanctuary via Gramatan Avenue / Sunset Avenue / Gareth Avenue
- Balcombe Park Reserve to Long Hollow Heathland via Gareth Avenue /Grandview Avenue/ Balcombe Road
- Beaumaris Reserve to Balcombe Park Reserve via Reserve Road
- Black Rock (South) Foreshore to Ricketts Point
- Beaumaris foreshore to Ricketts Point foreshore via Beach Road
- W F Vale Reserve to Banksia Reserve via Oak Street / Tramway Parade/Banksia Avenue
- Victoria Golf Club.

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<sup>6</sup> Park Improvement and Habitat Linkage Plan, Bayside City Council (2022)

**Map 12. Habitat Linkages and Improvement in Beaumaris**



Legend		
Bayside LGA Boundary	Tree Canopy Change - February 2015 to October 2019	UFS Reporting Areas
Suburb	Gain	Private-Residential
Council Land	Loss	Private-Commercial-Residential Mixed
Roads		

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# Trees on Private Land

While we encourage and support the increase of tree canopy cover on private land, it is recognised that the uptake of tree planting on private land can only be enforced through better planning mechanisms, education, advocacy and commitment together as a community.

Urban Forest Strategy’s objectives are to prioritise and strengthen the support for retaining existing trees on public and private land and to strengthen Council’s ability to retain and monitor trees on both public and private land.

## Regulations involving trees on private land

Under the Neighbourhood Amenity Local Law 2021, a permit is required for the removal of a tree that is on the Significant Tree Register or a canopy tree that has a single or combined trunk greater than 155 centimetres measured at 1 meter above ground level.

There are several mechanisms currently in place within the Bayside Planning Scheme that require a planning permit to be granted for tree removal. These mechanisms include but are not limited to the Vegetation Protection Overlay (VPO), Significant Landscape Overlay (SLO), Heritage Overlay (HO) and Erosion Management Overlay (EMO). Beaumaris is covered by VPO3 and in 2020 there were 112 requests for tree removal within the VPO3, 69 of which were approved.

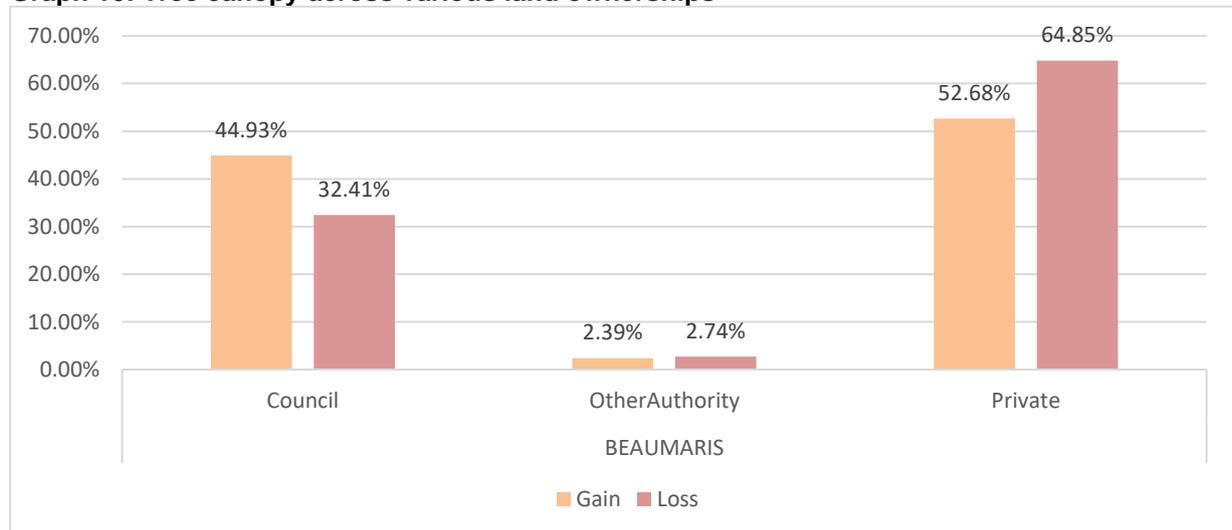
It is difficult to approximate the number of trees removed from private land each year under a planning permit as this is not separately recorded (and one application can be for multiple tree removals), let alone the extent of tree removal that is legal or illegal.

## Tree loss and gain in Beaumaris on private land

Map 12 shows tree canopy lost and gained in Beaumaris from 2015 to 2019. The source aerial photography datasets were obtained from the State Government’s Coordinated Imagery Program (CIP). The datasets from 2015 and 2019 were further compared by council’s GIS team to identify changed areas of vegetation.

While private land contributed to 53% of tree canopy gains in Beaumaris, it also contributed to 65% of tree canopy losses. Conversely, council-owned land contributed 44% to tree canopy gain versus 33% of tree canopy loss.

**Graph 10: Tree canopy across various land ownerships**



## **Encouragement of trees on private land**

As mentioned in the Urban Forest Strategy, community engagement will be essential in growing the urban forest on private land and Council will continue to be proactive in communicating the benefits of trees and vegetation on private land.

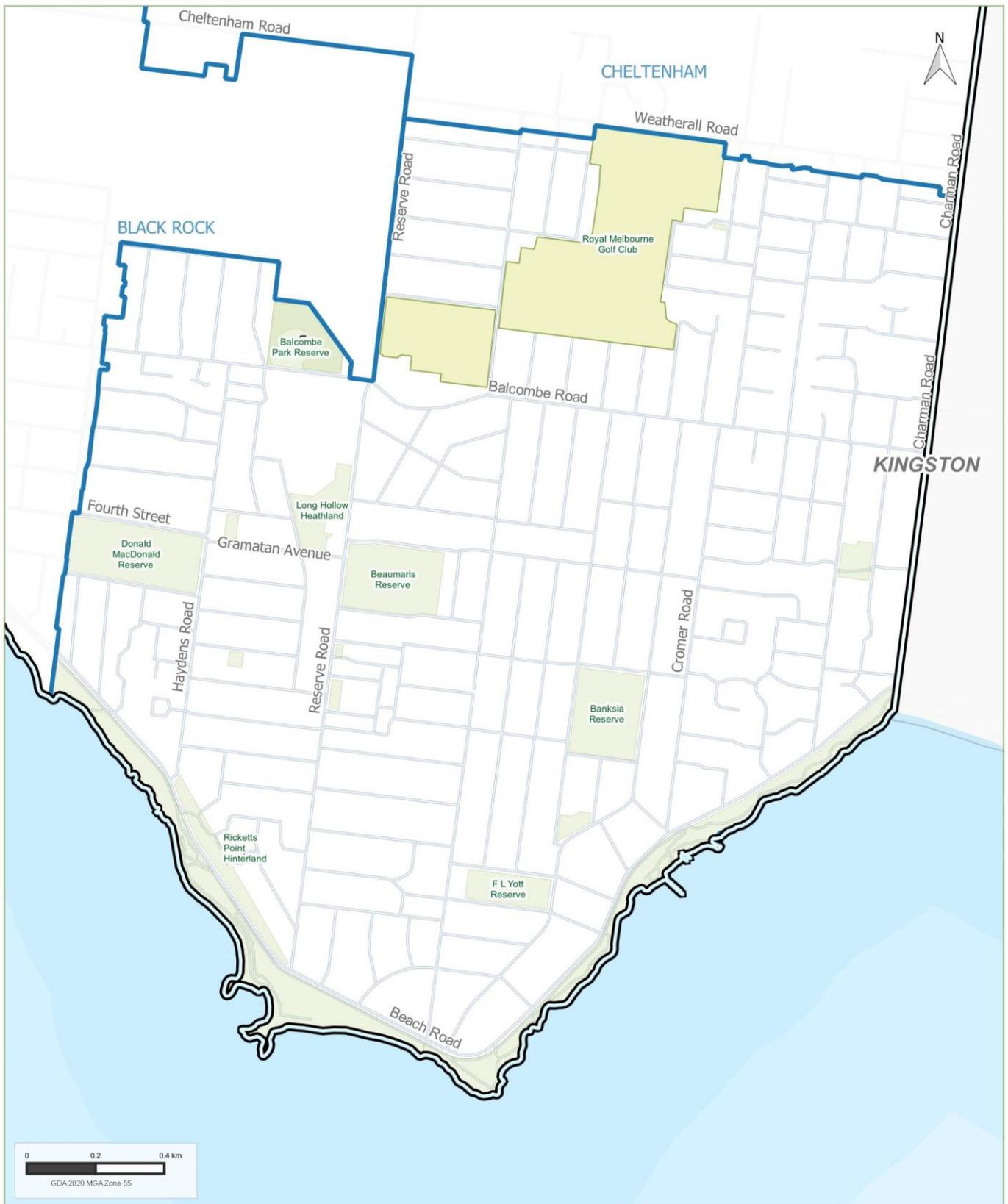
Council will also investigate opportunities to provide free tree and vegetation giveaways to residents. This will provide Council with a pathway to influence the tree and vegetation cover that exists on private land and help residents maintain the health of their trees and gardens. Bayside already has a strong network of 'Friends of' groups and community volunteers who carry out tree and vegetation plantings and would be great allies in this work.

Council will encourage landowner participation in greening, particularly for areas identified as having less canopy cover. This is being undertaken through communications and engagement actions that has a focus on education, awareness on the benefits of vegetation, and participation in increased tree planting through various education programs.

There has been a greater interest from the younger population of Bayside to participate in increasing vegetation cover. Council will continue to run educational programs within schools and work alongside the community to reach the Urban Forest Strategy target of 30% canopy cover.

As a part of the Urban Forest Strategy implementation plan, Council is exploring the opportunities to include further policies within the Bayside Planning Scheme. This will aim to increase and maintain tree canopy and vegetation on private land.

**Map 13. Vegetation loss and gain on private land**



**Legend**

- Bayside LGA Boundary
- Golf Club
- Roads
- Suburb Boundary
- Council Land

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# Beaumaris in images

The following images show examples of low, medium and high tree canopy coverage in Beaumaris.



**Image 5:** Beach Road, an example of a street with low tree canopy.



**Image 6:** Bodley Street, an example of a street with medium tree canopy coverage.



**Image 7:** Weatherall Road, an example of a street with high tree canopy coverage.

## Key Constraints – Infrastructure

Finding locations for street and park tree planting can be challenging as it is important to ensure trees do not compromise the existing above and below infrastructure, as well as the existing uses and accessibility of the space.



**Small tree under powerlines**



**Tree trimmed under powerlines**

Certain pieces of infrastructure introduce constraints that impact the ability to plant trees. Street and park tree selection for trees growing under powerlines needs to consider a particular species' tolerance for pruning. For example, a tree that has a natural branching habit and a good wound response to mechanical damage would be considered an appropriate tree species for growing underpower lines.

In streets that have small or narrow nature strips, a smaller tree species will be considered for the powerline side of the street. In those circumstances, the trees on both sides of the street should have similar foliage and form to provide a consistent vegetation character for the street.

As a phase 1 action of this plan, Council will facilitate the negotiations between the residents and relevant authorities to support the undergrounding of powerlines (and other services) if there is sufficient interest in a street.

Council will also advocate to VicRoads and other authorities for undergrounding the power lines and plant vegetation on the Principal Transport Network.

Other infrastructure that must be considered when undertaking tree and vegetation planting includes:

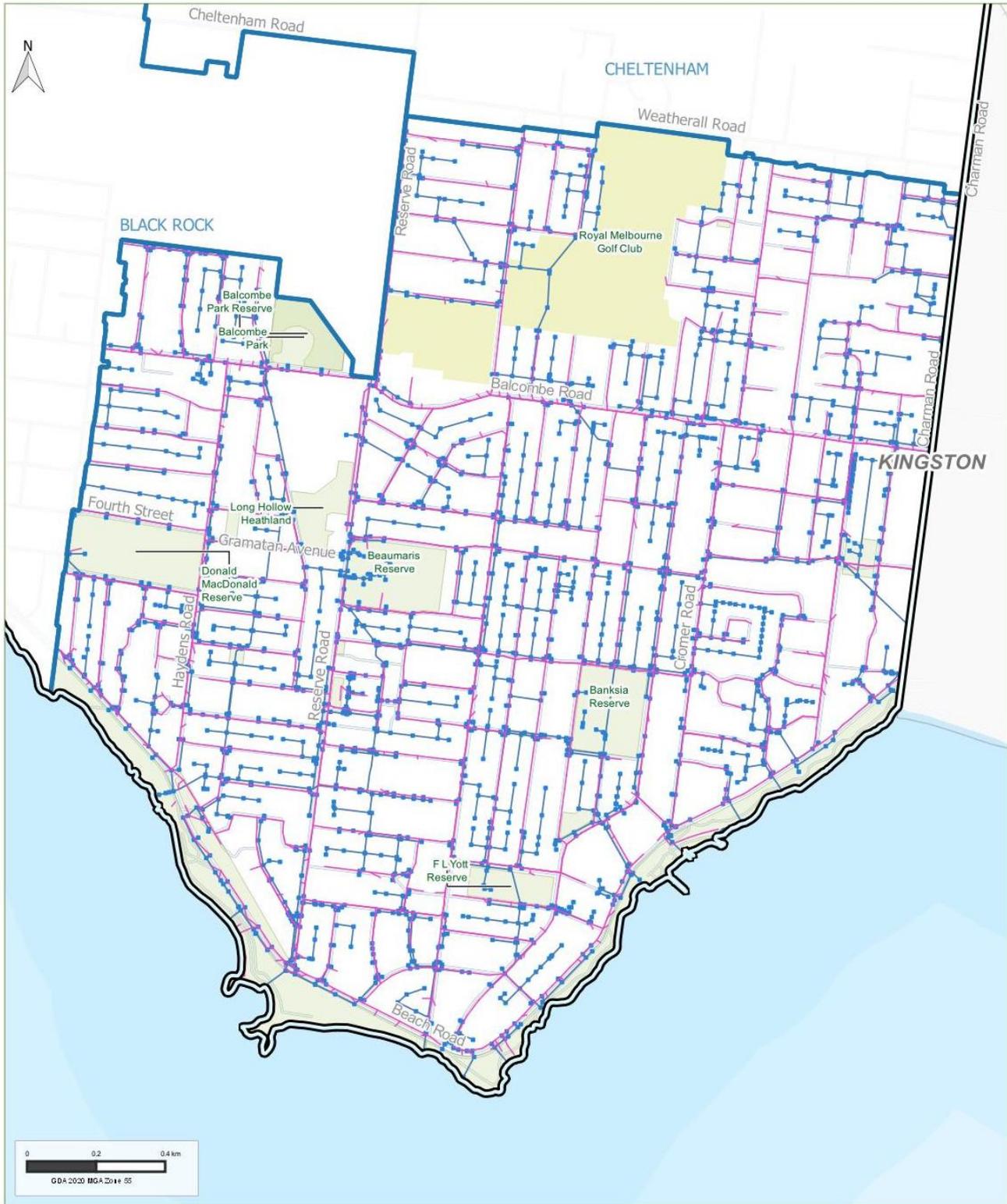
- Footpaths
- Kerb and channel
- Roadways
- Playgrounds
- Pathways
- Private infrastructure
- Public infrastructure.

When selecting tree species for planting, Council officers should consider which species will be the least destructive to underground infrastructure. Council will work with utility providers, where required, to ensure that infrastructure can be successfully maintained. This will ensure that Council can increase vegetation cover whilst protecting existing infrastructure and reducing demand for maintenance.

It is also important to note that infrastructure can also be constrained due to weather events. The Climate Emergency Action Plan 2020 requires that new infrastructure be designed to higher environmental standards and be located with consideration to future flood and storm surge risk. Existing infrastructure must be retrofitted to reduce environmental impact and to improve resilience. It is critical to consider how each piece of new infrastructure can contribute to a more resilient built environment.

Adapting to climate change requires taking action to lessen its adverse consequences and to increase capacity to withstand the stresses and shocks associated with natural hazards and extreme weather events. Investing in climate change adaption helps to embed economic, social, and environmental resilience to protect the most vulnerable to the consequences of climate change.

Map 14. Infrastructure servicing across Beaumaris



**Legend**

- Bayside LGA Boundary
- Golf Club
- Council Land
- Overhead Powerlines
- Drainage Pipe
- Drainage Pit
- Roads

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# Key Opportunities

**Greening Beaumaris**  
Increasing tree canopy cover to reach 30% and vegetation cover to reach 30% across Beaumaris by 2040.

**Biodiverse suburb**  
Create a diverse and healthy urban forest that reinforces greater outcomes for biodiversity.

**Improve monitoring and maintain**  
Improve the ability to monitor and track along with maintaining our existing canopy cover and avoid further decline.

**Encourage residents and private owners**  
Learn together, educate each other, encourage and celebrate greater care and protection.

Map 16. Key Opportunities in Beaumaris

In terms of tree planting, the Street and Park Tree Management Policy states that:

'Council aims to have 100% of suitable sites within Bayside planted with a tree to contribute to the municipality's leafy character. Most property frontages in Bayside can accommodate at least one tree within the nature strip.'

**Council owned open spaces**

Beaumaris has approximately 40 hectares of open space that includes parks, reserves and foreshore areas. Nature strips also comprise a significant proportion of land that accommodates trees and vegetation.

An opportunity exists to increase the number of canopy trees planted in council-owned open spaces, with the most prominent example being along the foreshore. This is, however, at odds with the values our community places in being able to view the bay from various vistas, including residential properties close to the foreshore, and it recognises that there is a tension that exists that will need to be further clarified.

Beaumaris has lots of public open spaces with sports grounds. While taking into consideration their master plans, there are a lot of opportunities to plant around these grounds to increase tree canopy cover and understorey planting.

**Council-owned projects**

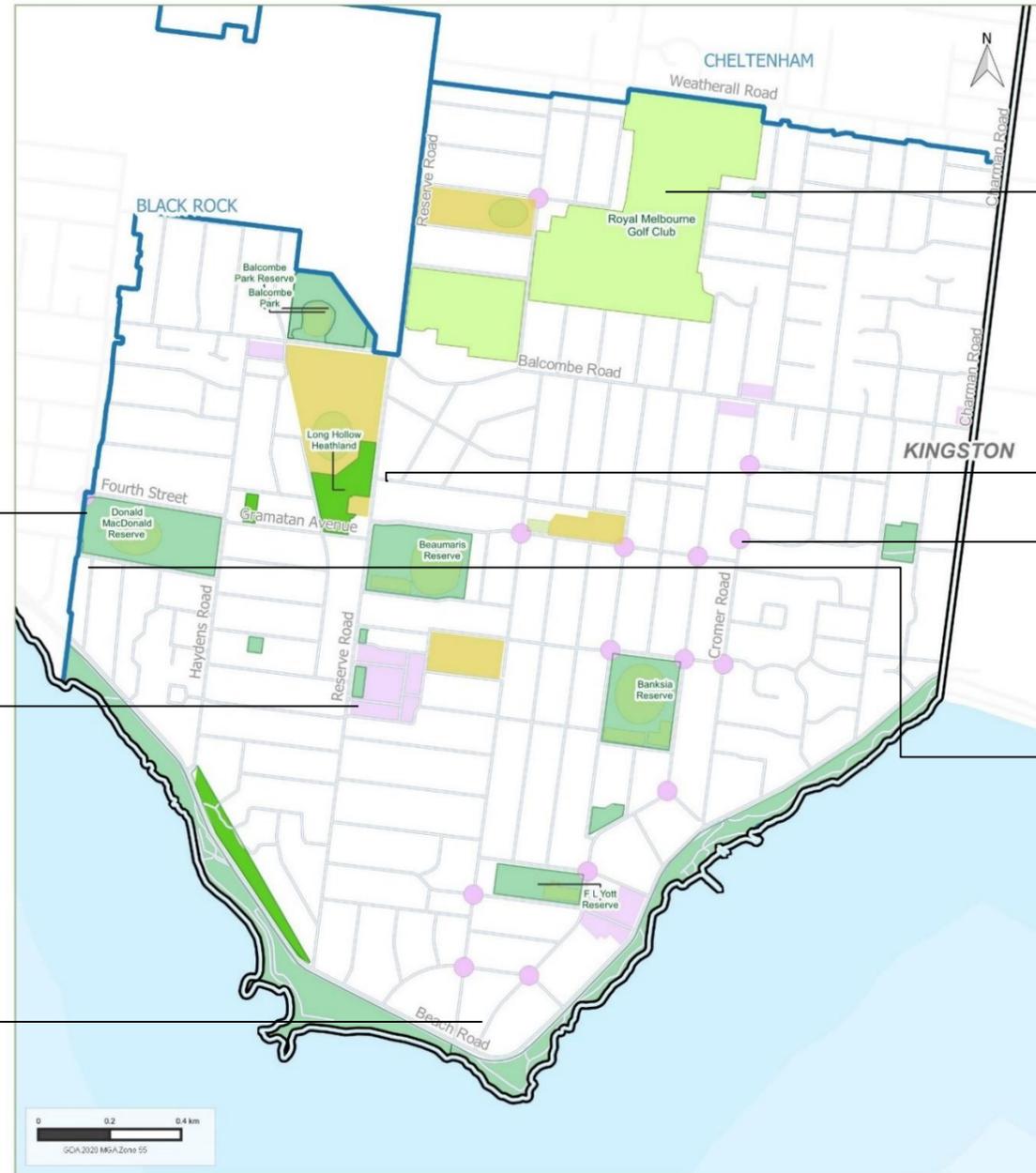
There is a significant opportunity to increase vegetation cover in Beaumaris through council-owned projects like the renewal or development of community buildings and sports clubs. Each Council project has site-specific issues and opportunities that need to be considered as a part of the project scope. Examples of this include having a buffer around Council buildings and sporting ovals to ensure new plantings do not hinder future projects. When planting near sporting ovals maintenance of future trees must be considered to ensure sporting events can still run. These projects provide great opportunities to increase and diversify tree and understorey cover.

**Beaumaris concourse**

Beaumaris Concourse has a leafy green character with established trees on the concourse green. This character can be improved by adding more canopy trees along the North, South and East Concourse, and in the adjacent Agnes Street and Reserve Road Reserve, by replacing the trees in poor health and by adding green roofs and walls.

**Understorey Planting**

High-quality landscaping that combines the use of indigenous and native vegetation and high-quality design. By incorporating the use of indigenous and native understorey plantings alongside *Coast Banksia* and other canopy trees, this form of landscaping demonstrates that indigenous, native, and existing vegetation can be utilised into high-quality and distinctive designs.



While planting trees in commercial areas like the Beaumaris Concourse, there can also be conflict between the demand for car parking, shop awnings, street lighting and road signage, innovative techniques to add more vegetation in the area is encouraged.

**Private golf course**  
Council will encourage land owner participation in greening, particularly for the private golf courses.

This will be undertaken through a coordinated urban forest communications and engagement strategy that has a focus on education, awareness of the benefits of trees.

**Education land uses:**  
Council will work with other State Government departments and also with private owners to increase vegetation cover on educational land.

**Understorey planting**  
Where possible, planting and maintaining understorey vegetation is encouraged to assist fauna to forage over a longer period of time.

**Roundabouts:**  
Roundabouts will be considered as opportunities to plant canopy trees and understorey planting when appropriate. New plantings must not affect sight lines, safety or accessibility for larger vehicles. To ensure future planting is appropriate a Road Safety Audit will be completed before and after installation.

- Priority Linkage Improvement Areas**
- Donald MacDonald Reserve to Foreshore via Fifth Street and / or Surf Avenue
  - Beaumaris Reserve to Beaumaris Foreshore via Victor Street/Dalgetty Road / Cloris Ave / Griffiths Street / Gibbs Street / Oak Street / Cromb Avenue / Tramway Parade / Ray Street / Bodley Street / Scott Street /Charlotte Road
  - Banksia Reserve to Foreshore via Oak Street / Griffiths Street / Tramway Parade / Ray Street / Cromb Avenue / Banksia Avenue
  - Long Hollow Heathland to Heathland Sanctuary via Gramatan Avenue / Sunset Avenue / Gareth Avenue
  - Balcombe Park Reserve to Long Hollow Heathland via Gareth Avenue /Grandview Avenue/ Balcombe Road
  - Beaumaris Reserve to Balcombe Park Reserve via Reserve Road
  - Black Rock (South) Foreshore to Ricketts Point
  - Beaumaris foreshore to Ricketts Point foreshore via Beach Road
  - W F Vale Reserve to Banksia Reserve via Oak Street / Tramway Parade/Banksia Avenue
  - Victoria Golf Club.

**Legend**

Bayside LGA Boundary	Golf Club - Private	Roundabouts	<b>Planning Zones</b>
Suburb	Education Land	Sports Grounds	C1Z - Commercial 1 Zone
			PCRZ - Public Conservation and Resource Zone
			PPRZ - Public Park and Recreation Zone

Scale: 0, 0.2, 0.4 km  
GCA 2023 MSA Zone 55

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## Prioritising Trees and Vegetation

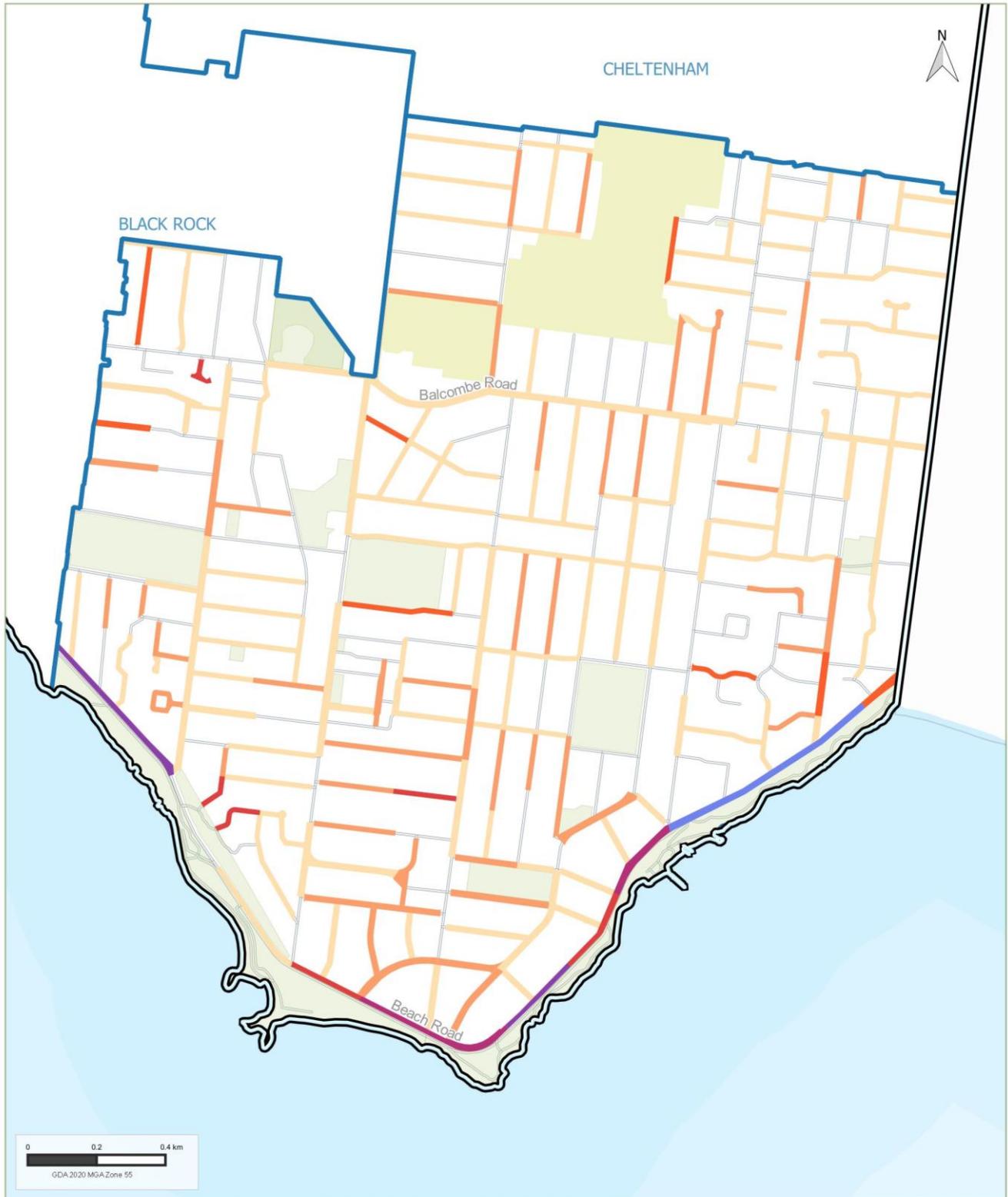
Planting will focus on habitat linkages and core habitat patches identified in the Park Improvement and Habitat Linkage plan (Action 1 of the Implementation Plan). Focus will also be given to streets that have low canopy cover.

Encouraging planting on private property will prove to be more challenging. The species palette listed in this Precinct Plan is also provided within the revised Bayside Landscaping Guidelines and selection from this list will be encouraged as part of the Planning and Local Law tree removal application and approval process for Landscape Plans. Council will also work with private property owners to seek enhanced landscaping outcomes on nature strips.

As a response to the *Urban Forest Strategy*, Council is committed to increasing tree planting every year. Maps 17 to 20 identify priority locations to be targeted in Council's annual tree planting program.

The Annual Tree Planting Program provides a great opportunity to increase species diversity, habitat and local character. A general rule of thumb that should be applied is the 10:20:30 rule, where the urban tree population includes no more than 10% of any one species, 20% of any one genus, or 30% of any family.

**Map 15. Number of Tree Replacements required in next 10 years in Beaumaris**



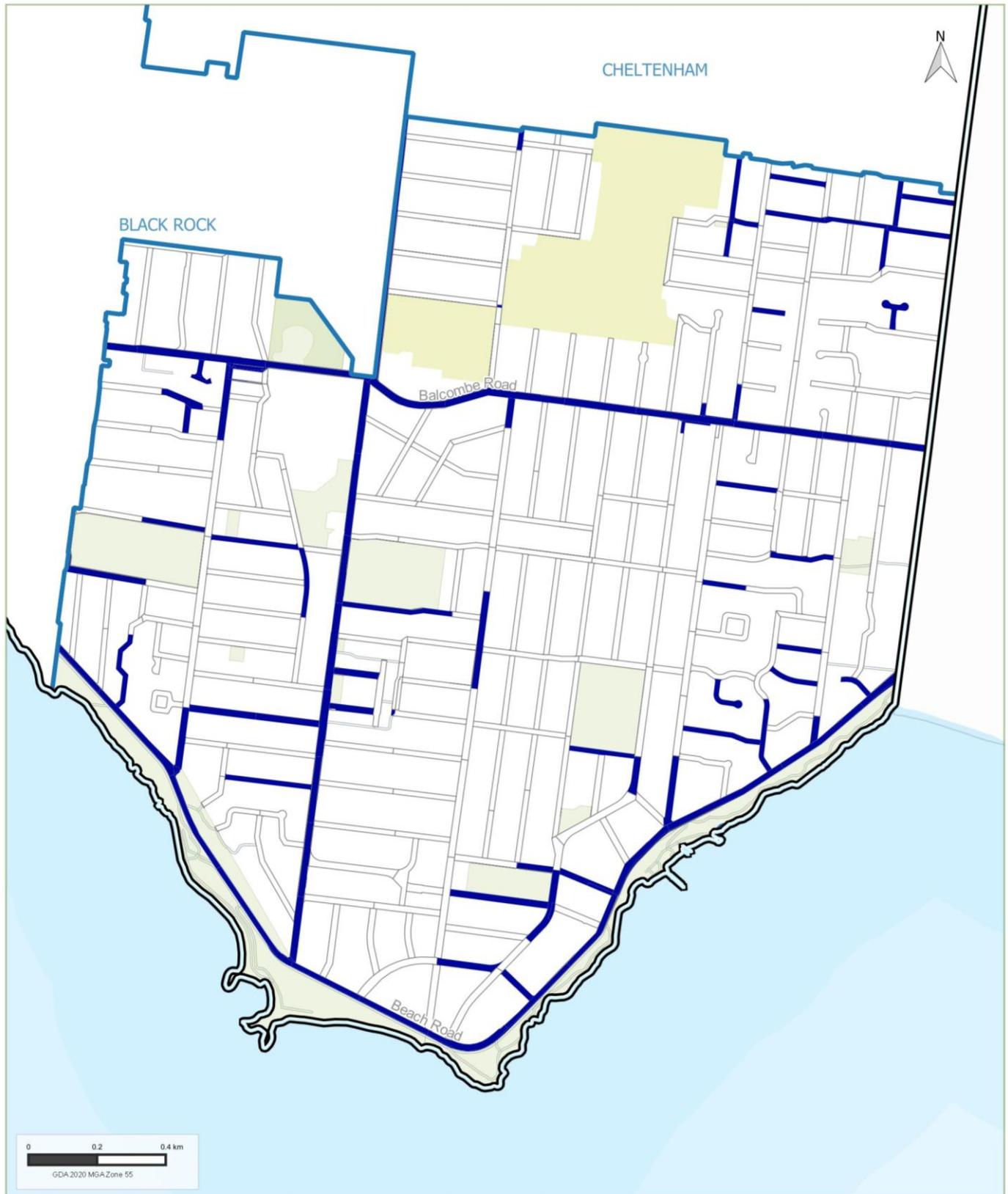
**Legend**

- |                      |                                 |               |
|----------------------|---------------------------------|---------------|
| Bayside LGA Boundary | <b>Street Tree Replacements</b> | 6 - 8 Trees   |
| Suburb               | 1 - 2 Trees                     | 8 - 10 Trees  |
| Council Land         | 2 - 4 Trees                     | 10 - 12 Trees |
| Golf Club            | 4 - 6 Trees                     | 12 - 14 Trees |

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**Map 16. Streets with less than 20% Tree Canopy Cover in Beaumaris**



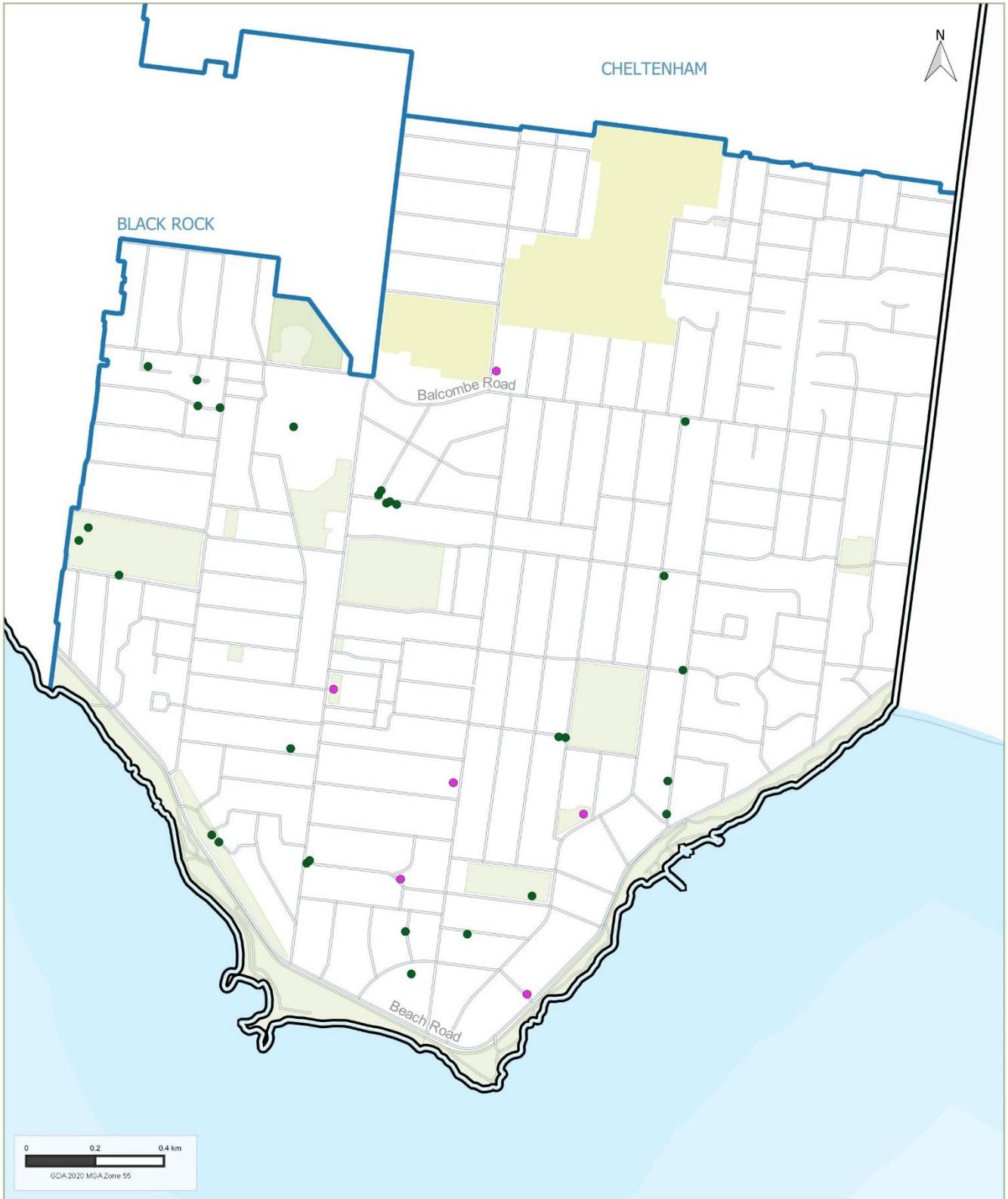
**Legend**

-  Bayside LGA Boundary
-  Suburb
-  Council Land
-  Golf Club
- Street Tree Canopy % (October 2019)**
-  Tree Canopy Cover less than 20%
-  Tree Canopy Cover greater than 20%

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**Map 17. Opportunities Identified by Community for Planting in Beaumaris**



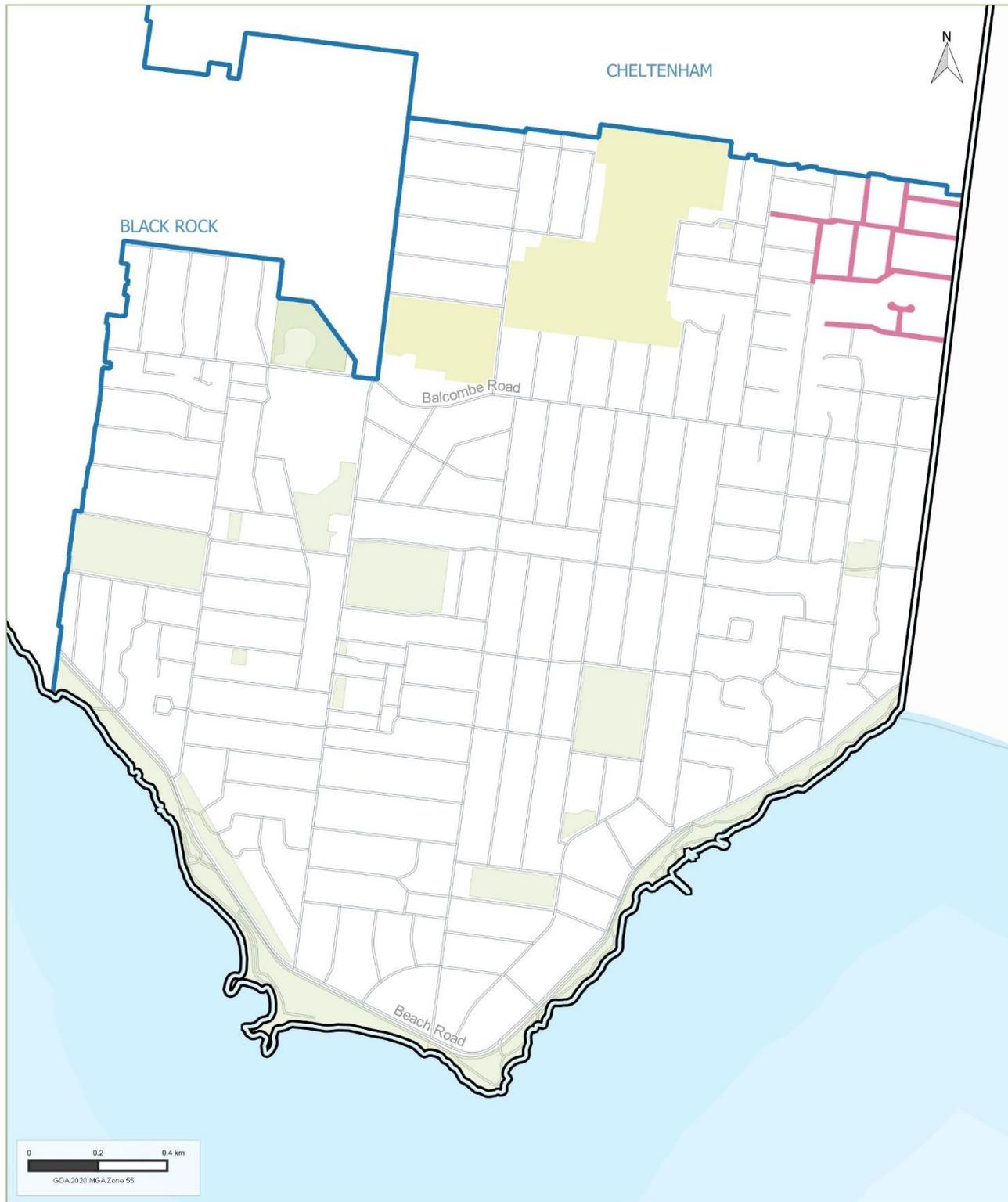
**Legend**

- |  |  |  |
|--|--|--|
|  Bayside LGA Boundary |  Council Land | Opportunities Identified by<br>Community for Planting  |
|  Suburb               |  Golf Club    |  |
|  |  |  Understorey Planting |
|  |  |  Tree Planting        |

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## Map 20. Streets with High Urban Heat Island Effect in Beaumaris



### Legend

-  Bayside LGA Boundary
-  Council Land
-  Streets with High Urban Heat Island Effect
-  Suburb
-  Golf Club

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# Implementation Plan

The following set of actions specifically identifies outcomes for trees and vegetation planting. They provide the framework for change within Beaumaris with outcomes informed by all of the other factors outlined in previous sections of this Precinct Plan.

Phase	Objective	Action	Responsibility	Timeframe	Resources required	Measure
<b>Create a diverse and healthy urban forest that reinforces greater outcomes for biodiversity.</b>						
Action 1 Phase 1	Prioritise and increase planting on identified habitat and biodiversity corridors across public land to enhance habitat linkages.	<p>Investigate opportunities to provide increased understorey planting in areas identified as part of Council's <i>Park Improvement and Habitat Linkage Plan</i> (Map 11 - 12), including:</p> <p><b>Priority Habitat Improvement Areas:</b></p> <ol style="list-style-type: none"> <li>Balcombe Park Reserve/Balcombe Park</li> <li>Long Hollow Heathland</li> <li>Beaumaris Reserve</li> <li>Donald McDonald Reserve</li> <li>Gramatan Avenue Heathland Sanctuary</li> <li>Banksia Reserve</li> <li>Ricketts Point foreshore</li> <li>Beaumaris foreshore</li> <li>Victoria Golf Club</li> </ol> <p><b>Priority Linkage Improvement Areas:</b></p> <ol style="list-style-type: none"> <li>Donald MacDonald Reserve to Foreshore via Fifth Street and / or Surf Avenue</li> <li>Beaumaris Reserve to Beaumaris Foreshore via Victor Street/Dalgetty Road / Cloris Ave / Griffiths Steet / Gibbs Street / Oak Street / Cromb Avenue / Tramway Parade / Ray Street / Bodley Steet / Scott Street /Charlotte Road</li> <li>Banksia Reserve to Foreshore via Oak Street / Griffiths Street / Tramway Parade / Ray Street / Cromb Avenue / Banksia Avenue</li> <li>Long Hollow Heathland to Heathland Sanctuary via Gramatan Avenue / Sunset Avenue / Gareth Avenue</li> <li>Balcombe Park Reserve to Long Hollow Heathland via Gareth Avenue /Grandview Avenue/ Balcombe Road</li> <li>Beaumaris Reserve to Balcombe Park Reserve via Reserve Road</li> <li>Black Rock (South) Foreshore to Ricketts Point</li> <li>Beaumaris foreshore to Ricketts Point foreshore via Beach Road</li> <li>W F Vale Reserve to Banksia Reserve via Oak Street / Tramway Parade/Banksia Avenue</li> <li>Victoria Golf Club.</li> </ol> <p><b>Core habitat patches:</b></p> <ol style="list-style-type: none"> <li>Foreshore</li> <li>Donald Macdonald Reserve</li> <li>Long Hollow Heathland</li> <li>Balcombe Park Reserve</li> <li>Heathland Sanctuary</li> <li>Golf Course</li> <li>Beaumaris Reserve</li> <li>Open space next to Stella Maris Church</li> <li>Banksia Reserve</li> <li>Beaumaris Bowls Club</li> <li>Illaroo Reserve</li> <li>Beaumaris Oval attached to Beaumaris North Primary School</li> <li>Open space next to Beaumaris Primary School</li> </ol>	Open Space	Year 1 & 2	Budget allocated for 2022/23 and 2023/24 financial years.	<i>Park Improvement Habitat Linkage Plan</i> and the Urban Forest Strategy Annual Reporting Program.
Action 2 Phase 1	Enhance biodiversity outcomes on private land.	<p>Encourage private landowners to plant vegetation on private property and nature strips and provide support and tools to assist.</p> <p>To ensure new plants enhance habitat and biodiversity, Council officers should recommend appropriate plants listed in Appendix 3 Species Palette of this document</p>	Urban Strategy, Communication and Engagement	Ongoing	Budget will be required.	<p>Utilise engagement evaluation matrix to measure success.</p> <p>Number of community members involved in activities.</p> <p>Demand from residents for vegetation outside their house.</p>
Action 3 Phase 1 & 2	Create new open space, pocket parks, micro-forests in the suburb	Investigate opportunities to create new public open space, pocket parks, micro forests, and habitat corridors, ensuring that the design of these spaces are contributing to Bayside's urban forest outcomes and the existing Ecological Vegetation Community.	Open Space	Ongoing	This can be considered as part of the Open Space Strategy review and can be	Council to prepare list of potential open space sites as part of the adoption of the Open Space Strategy review.

Phase	Objective	Action	Responsibility	Timeframe	Resources required	Measure
	seeking new biodiversity or habitat corridors.				considered with the resourcing of that project.	
Action 4 Phase 1	Ensure humans and wildlife can simultaneously and safely access densely vegetated areas, streets and reserves	Support the undergrounding of powerlines where it is at the request of the community and at their full cost. Facilitate the negotiations between the residents and relevant authorities to support the undergrounding of powerlines (and other services) if there is sufficient interest in a street.	Asset Protection	Ongoing	No budget required	Number of streets where undergrounding of powerlines has been implemented
<b>Enhance landscape outcomes and increase tree and vegetation cover to reach 30% across Beaumaris by prioritising areas in greatest need</b>						
Action 5 Phase 1	Increase tree and understorey cover at areas with greatest need to enhance landscape outcomes, provide for heating and cooling benefits and combat climate change.	Investigate opportunities to increase canopy tree and understorey planting at the following streets which have been identified as having low canopy cover (less than 20%): <ul style="list-style-type: none"> <li>Beach Road</li> <li>Lileura Avenue</li> <li>Chateau Grove</li> </ul> In addition, investigate opportunities to increase tree and understorey cover at the following streets which have been identified as hot spots due to potential impacts from Urban Heat Island effects. <ul style="list-style-type: none"> <li>McNamara Street</li> <li>Keith Street</li> <li>Gordon Street</li> </ul>	Open Space	Year 1 to 5	Budget and resources will be required to increase the number of trees and understorey plants to be planted.	In line with the review of the Precinct Plans, a comparison should be undertaken for all streets that currently have less than 20% canopy cover.
Action 6 Phase 1	Planting canopy trees and understorey vegetation on roundabouts that currently do not have vegetation to enhance landscape outcomes.	Investigate opportunities to provide canopy cover and/or understorey planting at the following roundabouts (as per Map 16): <ul style="list-style-type: none"> <li>Tramway Parade / Ray Street</li> <li>Tramway Parade / Bodley Street</li> <li>Oak Street / Griffiths Street</li> </ul> New plantings must not affect sight lines, safety or accessibility for larger vehicles.	Open Space, Urban Strategy, Integrated Transport.  Integrated transport team to guide and undertake road safety assessment before and after planting.	Year 1 to 5	Budget and resources will be required to increase the number of trees and understorey plants to be planted.	Number of plants planted.  In line with the review of the Precinct Plans, a comparison should be undertaken for all roundabouts that currently do not have vegetation.
Action 7 Phase 2	Increase utilisation of green walls and green roofs in Activity Centre area.	Investigate opportunities to introduce mechanisms to increase green roofs and walls within Activity Centres.	Development Services, Strategic Planning	Year 5 to 10	Resources will be required to initiate a Planning Scheme Amendment.	Number of green walls implemented.  Urban Forest Strategy Annual Reporting Program.
Action 8 Phase 1 and 2	Reframe Council's approach to major council-owned projects, capital infrastructure renewal projects as opportunity to increase urban forestry outcomes.	Explore opportunities within road reconstruction projects to provide new tree plots as boulevard planting or in between car parking bays to enhance tree and vegetation cover upon local streets.	Project Services, City Assets	Ongoing	Budget will be considered as part of the project scope.	Number of plants planted.  Urban Forest Strategy Annual Reporting Program.
Action 9 Phase 1	Increase tree canopy cover by prioritising plantation in vacant tree sites.	As part of the Annual Tree Planting Program, prioritise planting at vacant sites.	Open Space, Urban Strategy	Ongoing	Budget and resources will be required to increase the number of trees and understorey plants to be planted.	Number of plants planted  Urban Forest Strategy Annual Reporting Program.
Action 10 Phase 1	Ensure our urban forest is healthy and resilient.	As part of the Annual Tree Planting Program, Council should continue to choose species that are resilient and adaptive to the effects of climate change and increasing urban development.  Property owners are also encouraged to select species that are resilient and adaptive through the planning and local law application processes.	Open Space, Development Services and Urban Strategy	Ongoing	Budget allocation as part of the Annual Tree Planting Program.	Species planted.  Urban Forest Strategy Annual Reporting Program.
<b>Learn together, educate each other, encourage and celebrate greater care and protection of the Bayside Urban Forest</b>						
Action 11 Phase 1	Increase planting on State owned roads that have less than 20% tree canopy cover.	Advocate to VicRoads and other authorities for increased planting on Balcombe Road, Beach Road, and Bluff Road.	Open Space, Urban Strategy, Communications and Engagement	Ongoing	Budget will be required for any additional planting or maintenance should Council take on those functions for land	A commitment made to plant trees on the streets maintained by VicRoads.

Phase	Objective	Action	Responsibility	Timeframe	Resources required	Measure
					in State ownership.	
Action 12 Phase 1	Increase awareness amongst the community around the importance of vegetation through various programs and communication material.	Continue to run student and community educational programs to increase awareness around vegetation planting and protection.	Urban Strategy, Communication & Engagement	Ongoing	Budget may be required to create and implement educational programs.	Number of educational programs undertaken every year.
Action 13 Phase 1 and 2	Ensure humans and wildlife can simultaneously and safely access densely vegetated areas, streets and reserves.	Advocate to VicRoads and other authorities for the undergrounding of powerlines.	Urban Strategy	Ongoing	No budget required.	Funding received and/or partnerships created.
<b>Maintain our existing canopy cover across Beaumaris and avoid any further decline where possible</b>						
Action 14 Phase 2	Ensure our urban forest is healthy and resilient.	Continue to assess trees that have limited useful life expectancy or are dead for potential retention as habitat trees using TRAQ (Tree Risk Assessment Tool).	Open Space	Year 5 to 10	Budget and resources will be required to assess trees for habitat and to plant understorey to support habitat trees.	Number of replacement plants planted, and number of trees retained for habitat.  Urban Forest Strategy Annual Reporting Program.
Action 15 Phase 1 and 2	Increase Council's ability to protect trees from vandalism.	Explore additional opportunities to minimise vandalism, particularly along the foreshore.  Consider the preparation of a communications and engagement strategy targeted to private property owners and the wider community.	Local Laws, Open Space, Communications and Engagement	Year 1 to 5	Budget and resources will be required to explore opportunities.	Utilise engagement evaluation matrix to measure success.
Action 16 Phase 2	Provide safer and cleaner streets for our residents and visitors	As vegetation cover increases with time, ensure future maintenance contracts appropriately fund the clean-up of tree leaves and debris on roads, public land and in activity centres.	City Asset, Open Space	Ongoing	Additional budget will be required for maintenance contract.	The number of requests for additional service.
Action 17 Phase 1	Strengthen requirements and advocacy to maintain and increase vegetation on private land.	Prepare Planning Scheme Amendments to strengthen the protection of vegetation on private land.	Development Services, Urban Strategy	Year 1 to 5	Planning Scheme Amendment process to be funded via operation budget.  Budget may be required to prepare detailed background information.	Preparation of Planning Scheme Amendments

# Appendix 1: Guiding Principles and Considerations

Council is responsible for the management of road reserves, parks, public spaces and foreshore reserves and has an active tree planting and maintenance program, which is guided by the Park and Street Tree Management Policy. As such, Council has a greater degree of control and influence over the tree population on Council managed land. In the 2018/19 financial year, 452 new trees were planted on Council land in Beaumaris, whilst 202 were removed for various reasons, in accordance with Council policy.

Planting in streets and parks 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 *Street and Park Tree Selection Guide 2016* and should be referred to when designing or planting any streetscape.

Beaumaris has a distinctive character dominated by natives, local indigenous species. Future plantings should focus on increasing the presence of indigenous species.

Beaumaris is in the VPO3 planning overlay area and are to be planted with a minimum of 80% indigenous trees. Native trees may be planted as infill for mature rows of consistent plantings.

## Planting types and locations in streets

### 1. 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 totaling the same canopy extent. Prioritise the use of large canopy trees in wider nature strips or tree islands, where there will be low impact to adjacent infrastructure.

We recognise that there are restrictions where medium or small size trees would be more appropriate due to competing infrastructure. Understorey planting, or multiple tree plantings in these locations is also encouraged.

### 2. Constrained Planting Spaces

- a.) *Cutouts*. Planting in cut-outs in the road or footpaths provides a useful alternative where there may be insufficient space on the nature strip. Suitability for planting in the road or footpath will depend on road/ footpath width and other factors such as traffic volume and impact to on-street
- b.) *Planting in Road Reserve*. Designing in-road tree pits where there are opportunity to plant trees in between on-street parking spaces, traffic islands and buffer areas like street corners.
- c.) *Narrow streets*. Narrow streets, including narrow footpaths and no nature strips, are best landscaped via tree planting within the parking lanes to either side, although this is partly limited by the need to maintain car parking spaces.

### 3. Roundabouts:

Roundabouts will be considered as opportunities to plant canopy trees and understorey planting when appropriate. New plantings must not affect sight lines, safety or accessibility for larger vehicles. To ensure future planting is appropriate a Road Safety Audit will be completed before and after installation.

### 4. Boulevards:

For the boulevards, consider inter-planting with large canopy trees and shrubs to enhance the existing canopy cover. Council will be working with State Government and VicRoads to prepare a long-term boulevard strategy. Where possible the philosophy of establishing boulevards should extend to local streets.

### 5. Streets and Power lines:

- a.) *Residential streets*. Low voltage overhead wires are present on one side of most residential streets. Where medians exist for large canopy tree planting, medium trees on the side overhead constraints should be selected, Council will continue to investigate engineering and horticultural solutions to manage larger trees under powerlines.

b.) *Streets with small nature strip and power lines:* In streets that have small or very small nature strips a smaller growing tree will be considered for the power line side of the street. In those circumstances, the trees on both sides of the street should have similar foliage and form to provide a consistent theme for the street.

a.) *Tree Pruning:* In streets where footpath trees provide the only canopy, medium to large trees that can be effectively pruned around power lines should be selected.

Street and park tree selection for trees growing under power lines will consider the species' tolerance for pruning. For example, a tree that has a natural branching habit and a good wound response to mechanical damage would be considered an appropriate tree for growing under power lines.

b.) *Underground Power lines:* Although overhead power lines are typically more economical, they are susceptible to damage from wind-borne tree branches, debris and high wind conditions from extreme weather.

The Council resolution of the October 2021 ordinary meeting states that Council commences the development of a policy relating to facilitating the undergrounding of power lines which will consider the prioritisation of undergrounding power lines in association with a) Council projects, b) Public open space c) General Street network.

## **6. Planting patterns and species choice**

Beaumaris's urban forest character is strongly connected to Gum Trees, and there will continue to be a higher population of Gum Trees in Beaumaris. In terms of opportunities to increase diversity in streets, kerb out stands, roundabouts and road ends 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. These areas should also be considered as opportunities to create landmark feature landscapes and to support understorey planting.

## **7. Important Façades:**

In streets with important public buildings or building that have heritage importance, deciduous trees should be given preference so that building façades are exposed over winter.

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. To balance these two conflicting pressures, it is important to identify ways to minimise the extent of homogeneous avenue planting while maintaining a strong design outcome.

## **8. Selection Criteria for Street Trees**

The following factors can be considered for selection of suitable street tree species:

- Relationship with local landscape character Garden Character, Surrounding Streetscape
  - Vegetation Protection Overlays, Heritage Values
  - Maintain existing landscape character by selection of low fruiting cultivators where possible
  - Replacing difficult to replace existing species with species demonstrating similar characteristics e.g. growth habit, foliage colour and size.
- Ability to tolerate and thrive in a site's environmental conditions: Species that have or can adapt to local conditions like climate, soil, coastal and salt tolerances, pests and diseases
- Possible future damage to infrastructure as assessed against identified current issues with footpaths, kerb and channel, roadways, private infrastructure and power lines.

### **9. Permeable surfaces**

Impermeable surfaces such as pavements, roofing, and building coverage increase the risk of flooding in urban areas. Comparatively, permeable surfaces are made of porous materials that allow stormwater to flow through, which reduces the volume of stormwater run-off that enters the drainage system. This helps improve water quality as it reduces the number of pollutants that enter waterways and habitats.

For new private residential developments, at least 20% of the site should have surfaces that can absorb water such as lawns, garden beds or permeable paving. Council has developed the *Integrated Water Management Plan 2019-2039*, called 'Water for Bayside', to provide clear direction to deliver high priority Integrated Water Management and Water Sensitive Urban Design (WSUD) activities. A key technique to improve water management is to increase permeability and incorporate WSUD into new developments and council project.



1



2a



2b



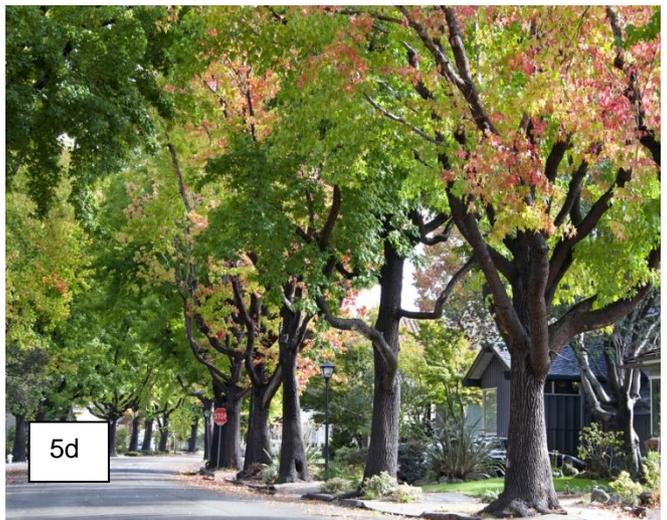
2c



3



4



## Appendix 2: Case Studies

### **Tramway Parade:**

The following case study showcases high-quality landscaping that combines the use of indigenous and native vegetation and high-quality design. By incorporating the use of indigenous and native understorey plantings alongside *Coast Banksia* and other canopy trees, this form of landscaping demonstrates that indigenous, native, and existing vegetation can be utilised into high-quality and distinctive designs.



### **Cliff Grove**

The landscaping at Cliff Grove combines established trees with new and targeted ground-cover vegetation planting to produce a garden that is indigenous in character, but restrained and orderly. The garden design highlights the potential for unique planting opportunities and maintaining indigenous and native character of the area.



### **Fairleigh Grove**

Like the examples at Tramway Parade and Cliff Grove, the landscaping and vegetation at Fairleigh Grove highlights the unique and distinct characteristics of established native vegetation with smart landscaping and ground-cover planting. When developed and well-established, the landscaping will form a unique but strong biodiversity link to the landscape and character of Beaumaris.



## **Village Zero – Sandringham**

'Village Zero' is a community-driven initiative with the goal of regenerating the Sandringham Village Major Activity Centre through sustainable solutions.

The action group has identified seven areas of focus, these are:

1. Renewable Energy
2. Waste
3. Green Spaces
4. Transport
5. Water
6. Art
7. Culture

The relevant action to the Precinct Plans is Green Spaces.

This focus area aims to:

- Connect green and open spaces to surrounding pollinator corridors, to promote biodiversity and support local ecosystems. This could include planting native flowers and shrubs, and creating habitats for bees, butterflies, and birds. This includes investigating the viability of green infrastructure, such as creating green roofs, and vertical gardens for apartment buildings;
- Increase access to green and open spaces, maximising flexibility of spaces for multiple uses and users, in accordance with Bayside Council's "Open Spaces" policies. Prioritise accessibility for people living with disabilities, youth and the elderly in the design and development of green and open spaces. This could include incorporating features such as raised garden beds, wheelchair-accessible pathways, and age-appropriate playground equipment. Improved accessibility will interface with other infrastructure initiatives such as crossing improvements at Abbott Street, across Station Street, and Beach Road;
- Coordinate with the community to increase the uptake of Bayside Council's tree-planting commitment for nature strips;
- Increase community enjoyment of streets, open and green spaces through community building events and activities;
- Align with and enabling other partners in supporting and nurturing green spaces;
- Engage the community in the planning, design, and maintenance of green and open spaces. This could include activities such as community clean-ups, volunteer gardening days, and educational workshops;
- Create and connect community gardens and orchards, which allow for community members to grow their own produce and educate the community on sustainable food production and consumption.

Council will continue to assist the 'Village Zero' project and will support any future initiatives that focus on increasing vegetation cover in activity centres.

# Appendix 3: Species Palette

## Species Palette

The following species provided are of guidance only, and do not exclude other trees that are consistent with the character of Beaumaris, the Guiding Principles, and the Planting Plan. In the suburb of Beaumaris, the EVCs found are Coastal Headland Scrub/Coast Banksia Woodland Mosaic (919), Damp Sands Herb-rich Woodland / Grassy Woodland (719) and Sand Heathland /Heathy Woodland (892).<sup>5</sup> By prioritising the listed species, the emphasis will be given on restoring native vegetation, to replicate the original vegetation of the area.

Coastal trees, grasses and other species are key genera across Beaumaris, forming an important part of the character of the suburb's urban forest. Species from many other genera will also be planted to increase the diversity of tree species, with the aim to reduce the vulnerability of Beaumaris's urban forest. A high diversity of plant species improves the chance of local ecosystems to survive destructive events or processes such as weed and pest animal invasion and climate change. Planting of specific species will depend on the geographic and environmental conditions, as well as the surrounding neighbourhood character.

When selecting tree and vegetation species for planting on Council-managed streets, parks and reserves, Council will consider existing infrastructure to minimise potential impact. This will ensure that Council can increase vegetation cover whilst protecting existing infrastructure and reducing demand for maintenance.

Bayside City Council utilises the Street and Park Tree Management Policy and the Street and Park Tree Selection Guide when planting in streets, parks, and reserves or as part of capital infrastructure projects.

A high diversity of plant species improves the chance of local ecosystems to survive destructive events or processes such as weed and pest animal invasion and climate change. Planting of specific species will depend on the geographic and environmental conditions, as well as the surrounding neighborhood character.

The following list of Indigenous, native and exotic plants is provided as guidance only. The list is split into 8 categories:

- Large canopy trees
- Medium canopy trees
- Small canopy trees
- Medium to large shrubs
- Small shrubs
- Grasses & tussocks
- Groundcovers & wildflowers
- Climbers

Each list is accompanied by a key which categorises each plant based on its characteristics (Height and spread at maturity, Uses/traits, habitat, tolerances, sunlight, flowering period, flowering colours and EVC number if applicable).

## Indigenous Plants

Council promotes the use of indigenous plants as they occur naturally within Bayside and have adapted to the conditions within the local environment (soil and climate) whilst also providing habitat and food for local birds, insects, and other native animals. There are a number of indigenous trees listed within the Street and Park Tree Selection Guide which are planted as part of Council's Annual Tree Planting Program. Indigenous plants are the original flora, or plants that occur naturally, in a given location.

Indigenous plants have adapted to the soils, topography and climate of the local area because they have evolved to the conditions within the local environment. Indigenous species also help to maintain the ecological balance of the local ecosystem, as plants and animals depend upon one another for their survival.

## Native and Exotic Plants

Native species are plant species that did not historically originate within the bayside region but were extant in other regions within the Australian continent. Exotic species are those plants that have been introduced and are not native to Australia and therefore did not historically occur within Bayside.

Bayside's urban forest is a mix of native, indigenous, and exotic species. While priority is placed on increasing the use of indigenous species, the historic planting of exotic, native and indigenous species is a core element of the character in certain areas of Bayside.

The use of native and exotic plants in this list is encouraged in areas where it is considered to have a positive impact on the surrounding environment and neighbourhood. This is of relevance where the existing plant(s) enhances the neighbourhood character. In these areas replanting like for like is encouraged.

Council utilises exotic plant species as part of its Annual Tree planting program. To ensure long term resilience and increase survival rates, native and exotic species adapted to Bayside's future climate will be considered for planting. Council utilises the Street and Park Tree Selection Guide to inform the annual tree planting program.

# Species Palette 1 – Large Trees

INDIGENOUS TO PROVIDENCE (Grown at nursery/within Bayside)		Uses/Traits key		Habitat Key		Tolerances										Flowering Months		Flower colours		E/D		Habitat		Uses/Traits	
INDIGENOUS (Grown Outside Bayside)		R - Robust and Hardy		H - Heath/Woodland		complete range										Jul-Oct.		Pale yellow/White		E		ADW		LM, S, R, Bird attracting, Hedging, Screening, Toxic or allergenic	
NATIVE TREES (From Australia)		LM - Low Maintenance		M - Moist/Closed forest		acid to neutral										Mar-Jun.		White		E		HA		LM, S, R, Windbreak, Erosion control, Robust, Structural, Attractive Bark, Bird-attracting, Aromatic	
EXOTIC (From outside Australia)		S - Shade		C - Coast - dune scrub & woodland		acid Low = suffers serious damage to death if exposed										Mar/Sep-Dec.		White		E		HA		LM, S, R, Fragrant flowers, Aromatic leaves, Bird-attracting	
Additional Species		F - Feature		D - Prefers dry, well drained soils & tolerates dryness once established.		Alkaline to neutral										Mar-Jun.		White		E		HW		LM, S, R, Attractive bark, Bird attracting, Aromatic leaves	
Shade = FSh		Sh - Prefers or tolerates full shade		W - Prefers or tolerates moist soils, wetness, periodic inundation		E=Evergreen										Jan/Oct-Dec		White		E		HD		LM, S, R, Bird attracting, Aromatic leaves	
*PLEASE NOTE THE BELOW INFORMATION IS A GUIDE ONLY		A - Adaptable, growing well in most soil types		W - Prefers or tolerates moist soils, wetness, periodic inundation		D=Deciduous										Mar-Jun.		White		E		HCD		LM, S, R, Attractive bark, Bird attracting, Aromatic leaves	
Use of any of the below species is preferred but not limited to these species		A - Adaptable, growing well in most soil types		W - Prefers or tolerates moist soils, wetness, periodic inundation		D=Deciduous										Mar-Jun.		White		E		HCD		LM, S, R, Attractive bark, Bird attracting, Aromatic leaves	
Species capable of reaching 9m+ and canopy spreads greater than 8m+		EVC= Ecological Vegetation Class		Tolerances		D=Deciduous										Mar-Jun.		White		E		HCD		LM, S, R, Attractive bark, Bird attracting, Aromatic leaves	
BOTANICAL NAME	COMMON NAME	Mat. HEIGHT	Mat. CANOPY	Growth Rate	EVC	Sunlight	Wind	Salinity	Sea Spray	Drought	Waterlogging	Compaction	PH	Flowering Months	Flower colours	E/D	Habitat	Uses/Traits							
<i>Acacia melanoxylon</i>	Blackwood	12	8	Moderate	719, 3	SS-FS	Fair	Moderate	Moderate	Fair	High	Moderate	Acid	Jul-Oct.	Pale yellow/White	E	ADW	LM, S, R, Bird attracting, Hedging, Screening, Toxic or allergenic							
<i>Acacia camaldulensis</i>	River Red Gum	20	15	Moderate	n/a	FS	High	High	Moderate	High	High	Fair	Complete Range	Dec.	White	E	HA	LM, S, R, Windbreak, Erosion control, Robust, Structural, Attractive Bark, Bird-attracting, Aromatic							
<i>Eucalyptus melliodora</i>	Yellow Box	16	12	Moderate	n/a	FS	High	Moderate	Moderate	High	Low	Low	Complete Range	Mar/Sep-Dec.	White	E	HA	LM, S, R, Fragrant flowers, Aromatic leaves, Bird-attracting							
<i>Eucalyptus ovata</i>	Swamp Gum	10	8	Moderate	707	FS	Moderate	Low	Moderate	Moderate	High	High	Acid	Mar-Jun.	White	E	HW	LM, S, R, Attractive bark, Bird attracting, Aromatic leaves							
<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint	15	10	Moderate	892	FS	Moderate	Low	Moderate	High	Moderate	Moderate	Complete Range	Jan/Oct-Dec	White	E	HD	LM, S, R, Bird attracting, Aromatic leaves							
<i>Eucalyptus viminalis</i> subsp. <i>pyraliana</i>	Manna Gum	15	12	Fast	919, 719, 892, 3	FS	Moderate	Low	Moderate	Moderate	Moderate	Fair	Acid to Neutral	Mar-May	White	E	HCD	LM, S, R, Attractive bark, Bird attracting, Aromatic leaves							
<i>Eucalyptus cephalocarpa</i>	Silver-leaved Stringybark	13	11	Moderate-slow	n/a	FS	Fair	Moderate	Moderate	High	Fair	Fair	Acid to Neutral	May-Jul.	Creamy-White/yellow	E	MW	R, LM, bird-attracting, aromatic leaves, shading, screening, cut flower, bush garden							
<i>Eucalyptus leucosydon</i> subsp. <i>Connata</i>	Yellow Gum	12	10	Moderate-slow	n/a	FS	Moderate	Moderate	Moderate	High	Moderate	High	Complete Range	May-Sep.	Creamy-White/yellow	E	MW	R, LM, attractive bark, bird attracting, aromatic leaves							
<i>Agonis flexuosa</i>	Weeping Willow Myrtle	12	12	Moderate-slow	n/a	PS-FS	Moderate	Fair	Fair	High	Low	Fair	Acid to Neutral	Sep-Dec.	White	E	CA	Aromatic leaves, colourful foliage, screening, shading, bush garden							
<i>Anoplophora costata</i>	Smooth-barked Apple	15	12	Moderate	n/a	FS	Fair	Moderate	High	High	Low	Fair	Acid to Neutral	Dec.	Bright Cream/White	E	CHD	LM, S, R, Attractive Bark							
<i>Anoplophora floribunda</i>	Rough Barked Apple	15	12	Moderate	n/a	FS	Fair	Moderate	Fair	Fair	Low	Moderate	Complete Range	Sep-Dec.	Bright Cream/White	E	HMW	LM, S, R							
<i>Corymbia citriodora</i> (native)	Lemon Scented	20	12	Fast	n/a	FS	Moderate	Low	Moderate	Fair	Moderate	Moderate	Acid to Neutral	Jul-Nov.	White	E	CHD	R, LM, Aromatic leaves, attractive bark, architectural form, street tree							
<i>Corymbia eximia</i>	Yellow Bloodwood	15	8	Moderate	n/a	FS	Fair	Moderate	Fair	High	Moderate	Moderate	Acid	Nov-Dec.	Bright White/Cream	E	HA	LM, S, R, Bird attracting							
<i>Corymbia ficifolia</i>	Red-flowering Gum	15	12	Slow-Moderate	n/a	FS	Fair	Moderate	Fair	High	Low	Low	Complete Range	Mar	Bright Red/Orange	E	DW	LM, S, R, Bird attracting, Screening							
<i>Corymbia maculata</i>	Spotted Gum	18	8	Fast	n/a	FS	Moderate	Moderate	Fair	Fair	High	High	Complete Range	Apr-Jun.	White	E	DA	LM, S, R, Attractive Bark, Bird attracting, Street tree							
<i>Eucalyptus baxteri</i>	Brown Stringybark	20	10	Moderate-Fast	n/a	FS	Moderate	Moderate	Moderate	Low	Moderate	Moderate	Acid to Neutral		White										
<i>Eucalyptus cinerea</i>	Mealy Stringybark	12	10	Moderate-slow	n/a	FS	Fair	Fair	Moderate	High	Fair	Fair	Acid to Neutral	May-Jul.	White	E	HD	R, LM, bird-attracting, aromatic leaves, shading, screening, cut flower, bush garden							
<i>Eucalyptus cornuta</i>	Yate	10	10	Moderate	n/a	FS	Fair	Fair	Fair	Fair	Fair	Unknown	Acid to Neutral	Sep-Nov.	Yellow	E	CD	R, LM, attractive bark, bird-attracting, aromatic leaves, screening, shading, bush garden							
<i>Eucalyptus largiflores</i>	Black Box	14	12	Slow	n/a	FS	High	High	Fair	High	Moderate	Unknown	Complete Range	All	White	E	MW	Screening, shelter							
<i>Eucalyptus mannifera</i>	Red Spotted Gum	12	10	Moderate-fast	n/a	FS	Moderate	Moderate	Moderate	High	Moderate	Moderate	Complete Range	Apr-Jun.	White	E	HD	R, LM, attractive bark, bird-attracting, aromatic leaves, shading, accent tree, bush garden							
<i>Eucalyptus microcarpa</i>	Grey Box	15	10	Moderate	n/a	FS	High	Moderate	Moderate	High	Fair	Fair	Complete Range	Feb-Jul.	White	E	HD	LM, S, R, Bird attracting, Aromatic leaves							
<i>Eucalyptus nicholii</i>	Narrow-leaved Black Pepper	14	12	Moderate	n/a	FS	Moderate	Moderate	Moderate	Fair	Fair	Fair	Acid	Apr, May-Sep.	Creamy-White/White	E	HD	attractive bark, foliage interest, bird-attracting, shading, bush garden, aromatic leaves							
<i>Eucalyptus polyanthemos</i> subsp. <i>vestita</i>	Red Box	10	8	Moderate	n/a	FS	High	Low	Moderate	High	Moderate	Moderate	Complete Range	Sep-Nov.	White	E	AW	S, R, Interesting Silver Foliage, Attractive bark, Bird attracting, Aromatic leaves							
<i>Eucalyptus rubida</i>	Candlebark Gum	9	9	Fast	n/a	FS	High	Low	Low	Fair	Moderate	Low	Complete Range	Nov-Feb.	White	E	DA	S, Feature for Large Gardens, Interesting Bark, Fauna Attracting							
<i>Eucalyptus saligna</i>	Sydney Blue Gum	10	15	Very Fast	n/a	FS	Fair	Low	Fair	Fair	Moderate	Low	Complete Range	Jan-Apr.	White	E	MW	LM, S, R, Attractive Bark, Bird attracting							
<i>Eucalyptus scoparia</i>	Wallangarra White Gum	12	10	Fast	n/a	FS	Moderate	Moderate	Moderate	High	Moderate	Unknown	Acid to Neutral	Dec.	White	E	HD	attractive bark and foliage, bird-attracting, aromatic, shading, accent tree, bush garden							
<i>Eucalyptus sideroxylon</i>	Red Ironbark	15	8	Moderate	n/a	FS	High	Low	Moderate	High	Moderate	Moderate	Complete Range	May-Aug.	Red or Pink	E	DH	LM, S, R, Attractive bark, Bird attracting, Winter interest, Aromatic leaves, Screening, Accent							
<i>Eucalyptus tereticornis</i>	Forest red gum	15	12	Fast	n/a	FS	Low	High	High	High	Moderate	Low	Acid to Neutral	Mar-May/June-Nov.	White	E	CW	S, Sheltering, Ornamental, Wildlife attracting, Large flowering period							
<i>Ficus macrophylla</i>	Moreton Bay Fig	60	10	Fast	n/a	FS	High	Moderate	High	High	Moderate	High	Complete Range	Sept-April	reddish purple fruit	E	MCA	R, LM Attracts seed eating birds and bats.							
<i>Ficus rubiginosa</i>	Port Jackson Fig	10	10	Moderate	n/a	FS-PS	Moderate	Moderate	Moderate	Moderate	Low	Moderate	Complete Range	Sep-Dec.	Yellow fruit over summer	E	C, D, A	C, A, Feature tree. Fruit eaten by birds, bats and flying foxes							
<i>Grevillea robusta</i>	Silky Oak	20	15	Fast	n/a	FS	Moderate	High	Moderate	Moderate	Low	Low	Complete Range	Nov.	Orange-Red	E	D	C, D, A, Important source of food for nectar feeding birds and fruit bats and bees							
<i>Lophosieton confertus</i>	Brush Box	13	12	Moderate-fast	n/a	FS	Moderate	Moderate	Moderate	Fair	Moderate	Fair	Acid	Sep-Dec.	White	E	CA	R, LM, attractive bark, shading, street tree, bush garden							
<i>Wollemia nobilis</i>	Wollemi Pine	20	10	Fast	n/a	SS-FS	Fair	Low	Low	Low	Low	Low	Acid	N/A	Cones	E	MW	F, Architectural form, foliage interest, Accent tree, Container							
<i>Araucaria heterophylla</i>	Norfolk Island Pine	20	15	Fast	n/a	FS	High	Fair	High	Fair	Moderate	Fair	Complete Range	N/A	Cones	E	CD	LM, R, Architectural form, Accent tree, Contained							
<i>Cedrus deodara</i>	Deodar Cedar	18	15	Moderate-Fast	n/a	FS	Moderate	Moderate	Moderate	Moderate	Moderate	Low	Complete Range	N/A	Cones	E	HD	S, Architectural form, Accent tree							
<i>Fraxinus 'Raywood'</i>	Claret Ash	12	9	Moderate-fast	n/a	FS	Moderate	Moderate	Moderate	High	Moderate	High	Complete Range	Nov-Dec.	Green	D	HW	autumn colour, colourful foliage, shading, accent tree							
<i>Fraxinus pensylvanica</i>	Green Ash	12	10	Moderate	n/a	FS	High	Moderate	High	High	High	Unknown	Complete Range	Sep-Nov.	Green	D	MW	Street tree, Good form, adaptable to site							
<i>Gleditsia triacanthos</i>	Honey Locust	12	12	Fast	n/a	FS	Moderate	Fair	Moderate	Fair	Low	High	Complete Range	Oct-Nov.	Greenish-yellow	D	HD	colourful foliage, attractive bark, autumn colour, allergenic, spiny							
<i>Liquidambar styraciflua</i>	American Sweetgum	15	10	Moderate-Fast	n/a	SS-FS	Moderate	Low	Moderate	Moderate	High	Fair	Acid to Neutral	Oct.	Greenish-white	D	MW	aromatic leaves, autumn colour, shading, street tree, deciduous							
<i>Magnolia grandiflora</i>	Bull Bay	12	12	Moderate	n/a	PS-FS	Moderate	Low	Moderate	Moderate	Moderate	Low	Complete Range	Nov-Dec.	Creamy-white	E	MW	Interesting foliage, fragrant flowers, screening, shading							
<i>Platanus 'acerifolia'</i>	London Plane	16	15	Moderate-Fast	n/a	FS	Moderate	Moderate	Moderate	Fair	Fair	High	Complete Range	Sept.	Green	D	HW	attractive bark, Screening, shading, street tree, deciduous							
<i>Quercus coccinea</i>	Scarlet Oak	13	12	Moderate	n/a	PS-FS	Moderate	Moderate	Moderate	Moderate	Moderate	Unknown	Acid	Sept.	Yellow-Green	D	HD	autumn colour, screening, shading, green flowers, red leaves							
<i>Quercus palustris</i>	Pin Oak	15	12	Moderate-Fast	n/a	SS-FS	Moderate	Low	Moderate	Moderate	High	High	Complete Range	Sept.	Yellowish-Green	D	MW	S, Autumn colour, Interesting foliage, Screening							
<i>Quercus rubra</i>	Northern Red Oak	14	12	Moderate	n/a	PS-FS	Moderate	High	Moderate	Moderate	High	Moderate	Complete Range	Sept.	Reddish Green	D	HD	autumn colour, shading, screening							
<i>Schinus molle</i>	American Pepper	12	12	Moderate-fast	n/a	FS	Fair	Low	Moderate	High	Moderate	Moderate	Complete Range	Sep-Dec.	White/yellow	E	CD	Aromatic leaves, colourful fruit, interesting foliage, attractive bark							
<i>Sequoia sempervirens</i>	Coast Redwood	20	10	Moderate	n/a	SS-FS	Moderate	Low	Moderate	Moderate	High	Low	Acid	N/A	Cones, Yellow/Brown/Green	E	MW	F, Accent tree, Architectural form							
<i>Tilia cordata cultivars</i>	Small-leaved Linden	15	10	Moderate	n/a	FS	Moderate	Moderate	Moderate	Low	Moderate	Moderate	Complete Range	Nov-Dec.	Yellowish White	D	HW	S, Fragrant flowers, autumn colour, Architectural form, Accent tree							
<i>Ulmus glabra 'lutescens'</i>	Golden Wych Elm	12	12	Moderate	n/a	FS	Moderate	Moderate	Moderate	Fair	Fair	Unknown	Complete Range	Sept.	Brown	D	HW	colourful foliage, shading, accent tree							
<i>Ulmus parvifolia</i>	Chinese Elm or Lacebark	12	12	Moderate-fast	n/a	PS-FS	High	Moderate	Fair	Fair	Moderate	Moderate	Complete Range	Mar-May.	Green	D	HW	attractive bark, screening, shading, street tree							
<i>Ulmus procera</i>	English Elm	16	12	Moderate	n/a	FS	Moderate	Moderate	Moderate	Moderate	High	High	Complete Range	Sept.	Reddish-Purple	D	HD	S, Autumn colour, Architectural form							
<i>Zelkova serrata</i>	Japanese Zelkova	14	12	Moderate-fast	n/a	FS	Moderate	Moderate	Moderate	Moderate	Moderate	Fair	Complete Range	Sep-Nov.	Yellow-Green	D	HW	attractive bark, autumn colour, shading							

## Species Palette 2 – Medium Trees

INDIGENOUS TO PROVIDENCE (Grown at nursery/within Bayside)		Uses/Traits key		Habitat Key		Tolerances		pH		Flowering Months		Flower colours		E/D		Habitat		Uses/Traits	
INDIGENOUS (Grown Outside Bayside)		R - Robust and Hardy		H - Heath/Woodland		High = tolerates well without damage.		complete range		Fair = can tolerate medium levels		Acid		E		MW		R, LM, bird-attracting, screening, shading, bush garden, fragrant flowers	
NATIVE TREES (From Australia)		LM - Low Maintenance		M - Moist/Closed forest		Fair = can tolerate medium levels		acid to neutral		Moderate = tolerates somewhat with some effects in low levels		Apr-May		E		CA		R, LM, foliage interest, screening, shading, bush garden, bird-attracting	
EXOTIC (From outside Australia)		S - Shade		C - Coast - dune scrub & woodland		acid to neutral		Moderate = tolerates somewhat with some effects in low levels		Mar-Dec		E		HD		CA		architectural form, foliage interest, bird-attracting, screening, UPL, street tree, bush garden	
Additional Species		F - Feature		D - Prefers dry, well drained soils & tolerates dryness once established.		Low = suffers serious damage to death if exposed		Unknown		E=Evergreen		D=Deciduous		Please contact your local nursery or a horticultural professional for further advice.		All indigenous plants provide habitat & food for local birds, insects & animals.			
PLEASE NOTE THE BELOW INFORMATION IS A GUIDE ONLY		Sh - Prefers or tolerates full shade		W - Prefers or tolerates moist soils, wetness, periodic inundation		Unknown		Unknown		Unknown		Unknown		Unknown		Unknown		Unknown	
Use of any of the below species is preferred but not limited to these species		Sh - Prefers or tolerates full shade		A - Adaptable, growing well in most soil types		Unknown		Unknown		Unknown		Unknown		Unknown		Unknown		Unknown	
SPECIES THAT GROW TO A HEIGHT GREATER THAN 6M BUT NOT LIMITED TO THESE SPECIES		EVC - Ecological Vegetation Class		Tolerances		pH		Flowering Months		Flower colours		E/D		Habitat		Uses/Traits			
BOTANICAL NAME	COMMON NAME	Mat. HEIGHT	Mat. CANOPY	Growth Rate	EVC	Sunlight	Wind	Salinity	Sea Spray	Drought	Waterlogging	Compaction	pH	Flowering Months	Flower colours	E/D	Habitat	Uses/Traits	
<i>Acacia meurnsi</i>	Black Wattle	9	6	Fast	719, 3	FS	High	Low	Moderate	High	Fair	High	Acid	Sep-Nov.	Pale yellow or Cream	E	MW	R, LM, bird-attracting, screening, shading, bush garden, fragrant flowers	
<i>Allocasuarina littoralis</i>	Black She-oak	9	6	Slow	719, 3	PS-FS	High	High	High	High	Moderate	Moderate	Complete range	Apr-May	Red	E	CA	R, LM, foliage interest, screening, shading, bush garden, bird-attracting	
<i>Allocasuarina verticillata</i>	Drooping She-oak	9	6	Moderate-slow	n/a	FS	High	High	High	High	Fair	Fair	Complete range	Mar-Dec	Red	E	HD	architectural form, foliage interest, bird-attracting, screening, UPL, street tree, bush garden	
<i>Banksia integrifolia</i>	Coast Banksia	10	6	Moderate	919, 921	FS	High	High	High	High	Moderate	Moderate	Complete range	Mar-Sep.	Lemon yellow to Red	E	CD	R, bird-attracting, foliage interest, Screening, Shading, Street tree	
<i>Eucalyptus ovata</i>	Swamp Paperbark	10	6	Moderate	707	FS	Moderate	Low	Moderate	Moderate	High	High	Acid	Mar-Jun.	Creamy-White	E	MW	LM, S, R, attractive bark, bird-attracting, aromatic	
<i>Eucalyptus pauciflora</i>	Snow Gum	10	7	Moderate-fast	n/a	FS	High	Moderate	Moderate	Moderate	Fair	Moderate	Acid	Aug-Nov.	White or Cream	E	HD	LM, S, R, attractive bark and foliage, bird-attracting, Aromatic, Accent tree	
<i>Allocasuarina torulosa</i>	Rose She-oak	10	7	Fast	n/a	FS	High	High	Fair	Fair	Moderate	High	Acid to Neutral	Mar-Aug.	Red and brown	E	HD	Wind break, unique sound, screening, windbreak, decorative fruit	
<i>Brachychiton populneus</i> (Native)	Kurrajong	15	6	Fast	n/a	FS	High	Moderate	Moderate	High	Low	Low	Complete range	Sep-April	White, red, pink	E	C, D	R, F, LM, Attracts bees, seed eating birds, butterflies, insects.	
<i>Brachychiton rupestris</i> (Native)	Queensland bottle tree	15	6	Slow	n/a	FS	High	Moderate	Moderate	Moderate	Low	Low	Complete range	Oct-Dec	Cream	D	C, D	R, LM, F, Bird attracting flowers.	
<i>Brachychiton acerifolius</i>	Illawarra flame tree	12	6	Fast	n/a	FS	Moderate	Low	Low	Moderate	Low	Low	Acid	Sep-Dec.	Red	D	DW	Attracts bees, nectar eating birds, butterflies, other insect	
<i>Melaleuca azedarach</i> (Native)	White cedar	10	6	Fast	n/a	FS	Moderate	High	High	High	Moderate	Moderate	Complete range	Sep-Nov	Liacy flowers	D	CDWA	R, LM, S, F, Bird and bats are attracted to the berries.	
<i>Syzygium paniculatum</i> (Native)	Brush cherry	15	8	Moderate to Fast	n/a	FS-PS	Low	Moderate	Moderate	High	Moderate	High	Acid to Neutral	Nov-Jan.	White	E	M, CA	LM, S, R, Bird and bee attracting	
<i>Syzygium australe</i> (native)	Lilly Pilly	10	6	Fast	n/a	FS	High	High	Low	Moderate	Low	Low	Complete range	Sep-Oct	White/cream	E	W, CA	R, L, F, flowers and berries attracts birds and bats.	
<i>Acer rubrum</i> 'Brandywine'	Maple, Autumn Flame	9	6	Moderate	n/a	PS-FS	Moderate	Low	Moderate	Moderate	High	Moderate	Acid	Sep-Oct.	Bright Red	D	MW	S, Autumn Colour - Orange to purple-red, foliage interest, Ornamental	
<i>Acer rubrum</i> 'October Glory'	Maple, Luptick Tree	12	9	Moderate	n/a	PS-FS	Moderate	Low	Moderate	Moderate	High	Moderate	Acid	Sep-Oct.	Red or orange	D	MW	S, Foliage interest, Ornamental, Autumn colours - Superior if grown in full sun	
<i>Acer x freemanii</i>	Armstrong	12	6	Moderate	n/a	PS-FS	Moderate	Low	Moderate	Moderate	High	Moderate	Acid	Sep-Oct.	Red	D	MW	S, Autumn Colour, Foliage interest, Ornamental	
<i>Catalpa bignonioides</i>	Indian Bean Tree	10	7	Fast	n/a	FS	Low	Low	Low	Fair	Moderate	Unknown	Complete range	Nov-Dec.	White	D	MW	Interesting foliage, autumn colour, shading, accent	
<i>Celtis occidentalis</i>	Hackberry	8	7	Moderate	n/a	FS	Moderate	Moderate	Moderate	Moderate	Moderate	High	Complete range	Sep-Nov.	Yellowish Green	D	HD	S, Autumn colour, Attractive bark	
<i>Fraxinus excelsior</i> 'Aurea'	Golden Ash	10	7	Moderate	n/a	FS	Moderate	Moderate	Moderate	Moderate	High	High	Complete range	Sep-Oct.	Green	D	HW	LM, S, R, Colourful foliage, Autumn colour	
<i>Jacaranda mimosifolia</i>	Jacaranda	12	8	Slow	n/a	PS-FS	Moderate	Low	Moderate	Moderate	Low	Fair	Complete range	Oct-Nov.	bluish-purple	D	CD	interesting and aesthetic foliage, blue flowers, shading, accent tree	
<i>Metrosideros excelsa</i>	Pohutukawa	10	8	Moderate-slow	n/a	FS	High	Moderate	High	High	Moderate	Moderate	Complete range	Dec.	Crimson and yellow	E	CA	R, LM, attractive bark, bird-attracting, hedging, screening, shading	
<i>Pyrus calleryana</i> and other cultivars	Flowering Pear	10	4-8	Fast	n/a	PS-FS	Moderate	Low	Moderate	Fair	High	High	Complete range	Sep-Oct.	White	D	HW	S, Screening, Street tree, Autumn colour	

## Species Palette 3 – Small Tree

INDIGENOUS TO PROVIDENCE (Grown at nursery/within Bayside)		Uses/Traits key		Habitat Key		Tolerances		pH		Flowering period		Flower colours		E/D		Habitat		Uses/Traits	
INDIGENOUS (Grown Outside Bayside)		R - Robust and Hardy		H - Heath/Woodland		High = tolerates well without damage.		complete range		Fair = can tolerate medium levels		Acid		E		MW		R, LM, A, bird-attracting, winter interest, screening, UPL	
NATIVE TREES (From Australia)		LM - Low Maintenance		M - Moist/Closed forest		Fair = can tolerate medium levels		acid to neutral		Moderate = tolerates somewhat with some effects in low levels		Jul-Oct.		E		HWD		R, LM, A, bird-attracting, winter features, Screening, foliage interest	
EXOTIC (From outside Australia)		S - Shade		C - Coast - dune scrub & woodland		acid to neutral		Moderate = tolerates somewhat with some effects in low levels		Aug		E		HCD		A		A, bird-attracting, winter features, spiny or thorn	
Additional Species		F - Feature		D - Prefers dry, well drained soils & tolerates dryness once established.		Low = suffers serious damage to death if exposed		Unknown		Alkaline		Please contact your local nursery or a horticultural professional for further advice.		All indigenous plants provide habitat & food for local birds, insects & animals.		Unknown		Unknown	
PLEASE NOTE THE BELOW INFORMATION IS A GUIDE ONLY		Sh - Prefers or tolerates full shade		W - Prefers or tolerates moist soils, wetness, periodic inundation		Unknown		Unknown		Unknown		Unknown		Unknown		Unknown		Unknown	
Use of any of the below species is preferred but not limited to these species		Sh - Prefers or tolerates full shade		A - Adaptable, growing well in most soil types		Unknown		Unknown		Unknown		Unknown		Unknown		Unknown		Unknown	
MEDIUM TO LARGE SHRUBS		Species that reach 2-5 metres in height		EVC - Ecological Vegetation Class		Tolerances		pH Range		Flowering period		Flower colours		E/D		Habitat		Uses/Traits	
BOTANICAL NAME	COMMON NAME	Mat. HEIGHT	Mat. CANOPY	Growth Rate	EVC	Sunlight	Wind	Salinity	Sea spray	Drought	Waterlogging	Compaction	pH Range	Flowering period	Flower colours	E/D	Habitat	Uses/Traits	
<i>Acacia longifolia</i> subsp. <i>sophorae</i>	Coast Wattle	4	4	Very Fast	n/a	PS-FS	High	High	High	High	Moderate	Moderate	Complete	Jun-Oct.	Pale Yellow	E	CW	R, LM, A, Bird-attracting, winter interest, screening, UPL	
<i>Acacia oxycedrus</i>	Spike Wattle	4	3	Moderate	n/a	PS-FS	High	Moderate	Fair	Fair	High	Moderate	Acid-Neutral	Jul-Oct.	Bright Yellow	E	HWD	R, LM, A, bird-attracting, winter features, Screening, foliage interest	
<i>Acacia paradoxa</i>	Hedge Wattle	3	2	Moderate	719	PS-FS	High	Low	Moderate	Fair	Moderate	High	Acid-Neutral	Aug	Bright Yellow	E	HCD	A, bird-attracting, winter features, spiny or thorn	
<i>Acacia stricta</i>	Hop Wattle	4	2	Fast	n/a	FS	High	Moderate	Fair	Fair	Moderate	Low	Acid-Neutral	May-Oct.	Pale Yellow	E	HCMW	R, LM, A, Sh, architectural form, bird-attracting, Screening, UPL	
<i>Alyxia buxifolia</i>	Sea Box	2	2	Slow	n/a	PS-FS	High	High	Fair	Fair	Moderate	Unknown	Complete	Mar, Oct-Dec.	Orange to White cream at tip	E	HCD	Colourful fruit, allergenic, Screening, Hedging	
<i>Cassinia longifolia</i>	Long-leaf Cassinia	3	2	Fast	n/a	PS-FS	Moderate	Moderate	Moderate	Moderate	Fair	Moderate	Acid	Nov-Dec.	White	E	HMDW	Sh, Aromatic leaves, Screening, Under powerlines	
<i>Eucalyptus cupressiformis</i>	Cherry Ballart	4	3	Slow-Moderate	719, 3	PS-FS	Moderate	Moderate	Moderate	High	Moderate	Unknown	Acid-Neutral	n/a	n/a	E	HD	Screening, Under powerlines, interesting foliage, colourful	
<i>Cassinia aculeata</i>	Common Cassinia	2	1	Moderate	719, 3	PS	Moderate	Low	Moderate	Fair	Fair	Unknown	Complete	Nov-Dec.	Creamy white/white	E	HD	A, Screening, Aromatic leaves	
<i>Indigofera australis</i>	Austral Indigo	2	1.5	Fast	n/a	PS-FS	Moderate	High	Moderate	Fair	Moderate	Unknown	Acid-Neutral	Aug, Oct-Dec.	Pinkish/Soft Purples	E	HMW	A, interesting foliage, allergenic, Pink/Purple flowers, Screening, Shrub border	
<i>Yucca laetevirens</i>	Yarra Burgan	3	2	Moderate	n/a	PS-FS	Moderate	Moderate	Low	High	Low	Low	Complete	Nov-Feb.	White	E	HWB	A, R, Screening, Bird/butterfly attracting	
<i>Leptospermum continentale</i>	Prickly Tea-tree	3	2	Moderate	719, 892, 707, 3	PS-FS	High	High	High	Fair	Fair	Unknown	Acid	Oct-Dec.	White, rarely pale pink	E	HCW	A, Attractive Bark, Bird-Attracting, Screening	
<i>Leucopogon parviflorus</i>	Coast Beard-heath	3	2	Slow	919, 921	PS-FS	High	High	High	High	Low	Unknown	Complete	Jul-Nov.	White	E	HCDW	Edible, Hedging, Screening	
<i>Myoporum insulare</i>	Common Boerhaalia	5	3	Moderate	n/a	PS-FS	High	High	High	High	Fair	Fair	Complete	Jul-Oct.	White, Occasionally pale pink	E	CD	R, LM, A, bird-attracting, attractive bark, allergenic, hedging, screening, UPL, Shade	
<i>Olearia axillaris</i>	Coast Daisy-bush	2	2	Moderate	n/a	PS-FS	High	High	High	High	Moderate	Unknown	Acid	Mar-Jul, Nov-Dec.	Cream-Greenish or crimson tinge	E	CD	Silver foliage, shrub mass, screening, shrub or mixed border	
<i>Olearia glutinosa</i>	Sticky Daisy-bush	2	2	Moderate	n/a	PS-FS	Moderate	Moderate	High	High	Low	Low	Unknown	Nov-Feb.	Cream-white	E	CD	R, A, Long flowering, background	
<i>Ozothamnus ferrugineus</i>	Tree Everlasting	3	2	Moderate	n/a	PS-FS	Unknown	High	High	Moderate	Low	Fair	Unknown	Nov-Feb.	White	E	MDW	R, A	
<i>Pomaderris paniculata</i>	Shining Coast Pomaderris	2	1.5	Moderate	n/a	PS-FS	Moderate	Moderate	High	Moderate	Moderate	Low	Acid-Neutral	Jul-Nov.	Yellow	E	HMW	R, LM, F, Screening, Attracts birds and butterflies	
<i>Sida acuta</i>	Large Kangaroo Apple	2	2	Moderate	n/a	PS-FS	High	High	Low	Low	Low	Low	Acid-Neutral	Sep-Mar.	Purple-Blue	E	CD	R, LM, A, Sh	
<i>Viminaria juncea</i>	Golden Spray	4	2	Fast	n/a	FS	Moderate	High	High	High	High	High	Complete	Oct-Dec.	Yellow-Orange, with red markings	E	W	R, LM, A, Sh	
<i>Xanthorrhoea thomsonii</i>	Grass Tree	3	1.5	Slow	n/a	PS-FS	Moderate	High	High	High	Low	Unknown	Unknown	Aug-Feb.	Unknown	E	HD	R, LM, Sh	
<i>Xanthorrhoea australis</i>	Grass Tree	3	2	Slow	n/a	PS-FS	High	Moderate	Low	High	Low	Low	Acid-Neutral	Jul-Dec.	White or cream	E	HDM	R, LM, Sh	
<i>Adenanthe cunninghamii</i>	Albany woollybush	2	3	Moderate	n/a	FS	High	High	High	High	Moderate	Low	Id Acid-Mild Alkali	Mar-Oct.	Red/Pink	E	CD	R, LM, S, F, Attracts small nectar-eating birds	
<i>Erimophila longifolia</i>	Long-leaved Eremophila	3	3	Moderate	n/a	FS	Moderate	Unknown	Unknown	High	Low	Low	Acid-Neutral	All year	Pink to brick red	E	HD	R, LM, Attracts bees and small birds, particularly for winter flowering	
<i>Ozothamnus quadrifidus</i>	One-sided bottlebrush	3	5	Fast	n/a	FS	High	Low	Low	High	Moderate	Moderate	Mild Acid-Alkaline	June-Dec	Red, White	E	CD	R, LM, Ideal hedging and screening plant, attracts birds	
<i>Chaparralium spp.</i>	Grass Tree	3	3	Fast	n/a	FS	Moderate	High	High	High	Low	Low	Acid-Neutral	Apr-May	White/Pink/Purple	E	CD	R, LM, flowers attract nectar eating birds, butterflies	
<i>Xanthorrhoea preissii</i>	Grass tree / Balga	3	1	Very Slow	n/a	FS	High	Moderate	Fair	High	Low	Low	Complete range	No set time	Cream to White	E	HCD	bird and butterfly attracting, cockatoos, iconic Australian native	
<i>Grevillea spp. (Native)</i>	Grass Tree	2	2	Fast	n/a	FS	Moderate	High	Moderate	Moderate	Low	Low	Complete range	Nov-May	Orange-Red	E	DC	R, LM, F, important source of food for nectar feeding birds and fruit bats and bees	
<i>Hakea spp.</i>	Needle bush	4	3	Moderate to Fast	n/a	FS	Moderate	Moderate	Moderate	High	Low	Moderate	Acid	May, Jul-Oct.	Red, Pink, Yellow	E	CD	RF, bird and butterfly attracting, cockatoos, iconic Australian native	
<i>Westringera fruticosa</i>	Coastal Rosemary	2	4	Fast	n/a	FS	High	High	High	Low	Moderate	Moderate	Alkaline	Sep-Dec.	White, Mauve	E	CD	R, LM, A, attracts birds	
<i>Escallonia laevis</i> €	Escallonia	2	2	Fast	n/a	FS	High	High	High	High	Low	Low	Alkaline	Jan-Mar/Oct-Nov	White	E	CD	LM, S, F, bird attractant, scented flowers, long flowering period	
<i>Hibiscus sinensis</i>	Hibiscus	3	3	Moderate	n/a	FS	Moderate	Moderate	Moderate	High	Low	Low	Acid-Neutral	Sep-Dec/Mar-June	Various	E	DA	R, LM, F, Flowers attract bees and small birds	
<i>Myrica communis</i>	Common Myrtle	5	3	Slow-Moderate	n/a	FS	Moderate	Moderate	Moderate	Low	Low	Low	Acid-Neutral	Sep-Dec	White	E	DA	R, LM, Bees attracted to flowers and birds attracted to the berries	
<i>Juniperus communis</i>	Common Juniper	5	4	Slow	n/a	FS	High	Moderate	High	Moderate	Low	Low	Complete	May-June	Cone - Berries</				

# Species Palette 4 – Medium to Large

INDIGENOUS TO PROVIDENCE (Grown at nursery/within Bayside)		UPL-Under Power Lines				Uses/Traits key		Habitat Key										Tolerances				Evergreen/Deciduous			
INDIGENOUS (Grown Outside Bayside)						R - Robust and Hardy		H - Heath/Woodland										High = tolerates well without damage.							
NATIVE TREES (From Australia)		Full Sun = FS				LM - Low Maintenance		M - Moist/Closed forest										complete range Fair= can tolerate medium levels							
EXOTIC (From outside Australia)		Part Shade=PS				S - Shade		C - Coast - dune scrub & woodland										acid to neutral Moderate = tolerates somewhat with some effects in low levels							
Additional Species		Shade = FSH				F - Feature		D - Prefers dry, well drained soils & tolerates dryness once established.										acid Low = suffers serious damage to death if exposed							
*PLEASE NOTE THE BELOW INFORMATION IS A GUIDE ONLY						Sh - Prefers or tolerates full shade		W - Prefers or tolerates moist soils, wetness, periodic inundation										Unknown							
Use of any of the below species is preferred but not limited to these species								A - Adaptive, can grow in most soil types										Please contact your local nursery or a horticultural professional for further advice.							
SMALL CANOPY TREES - Species that reach 6-8metres in height and a spread of 4m @ maturity		EVC- Ecological Vegetation Class				Tolerances										Evergreen/Deciduous									
BOTANICAL NAME	COMMON NAME	Mat. HEIGHT	Mat. CANOPY	Growth Rate	EVC	Sunlight	Wind	Salinity	Sea Spray	Drought	Waterlogging	Compaction	SOIL PH	Flowering Months	Flower colours	E/D	Habitat	Uses/Traits							
<i>Acacia implexa</i>	Lightwood	8	4	Moderate	n/a	PS-FS	Fair	Moderate	Moderate	High	Fair	Fair	Acid	Dec	Cream-white	E	HDA	R, LM, S, Bird-attracting, attractive bark, screening.							
<i>Leptospermum laevigatum</i>	Coast Tea-tree	6	3	Moderate	919, 921	FS	High	High	High	Moderate	Moderate	Moderate	Complete Range	Aug-Oct.	White	E	CDA	R, LM, Bird-attracting, hedging, screening							
<i>Bursaria spinosa</i>	Sweet Bursaria	6	3	Moderate-Fast	n/a	PS-FS	Fair	Fair	Fair	High	Fair	Fair	Acid to Neutral	Mar-Dec	Cream-white	E	FDA	R, LM, Fragrant, thorns, hedging, screening, UPL							
<i>Banksia marginata</i>	Silver Banksia	5	3	Moderate	719, 892, 3	PS-FS	High	High	Fair	High	Fair	Moderate	Acid to Neutral	Mar, May-Nov.	Pale Yellow	E	HCDA	R, LM, S, Bird-attracting, Winter features, Screening, UPL							
<i>Melaleuca squarrosa</i>	Scented Paperbark	3	1.5	Moderate	n/a	PS-FS	High	Moderate	Fair	Moderate	High	High	Complete range	Sep-Dec.	Cream-White	E	HMW	R, LM, S, Bird-attracting, Fragrant, screen, UPL, Ornament pond							
<i>Acacia pendula</i>	Weeping Myall	6	3	Slow-Moderate	n/a	FS	High	Low	High	Moderate	Moderate	Fair	Complete range	May, Jul-Oct.	Yellow/Creamy white	E	CD	R, LM, Fragrant, thorns, hedging, screening, UPL							
<i>Angophora hispida (Native)</i>	Dwarf apple gum	7	5	Moderate	n/a	FS	High	High	High	Moderate	Low	Low	Acid - neutral	Sep-Dec	Cream-White	E	CDA	R, LM, F, Attracts honey eaters and other nectar eating birds							
<i>Banksia grandis</i>	Bull Banksia	8	4	Moderate	n/a	FS	High	High	High	High	Low	Low	Mild acidic to Mild alkaline		Crème, Yellow	E									
<i>Banksia serrata</i>	Saw Banksia	5	5	Slow	n/a	PS-FS	High	High	High	High	Moderate	Moderate	Mild acidic to Mild alkaline	Mar, May, Aug-Dec.	Yellow-Creamy green	E	MW	R, LM, S, Bird-attracting, Winter features, Screening, UPL							
<i>Callistemon viminalis (native)</i>	Weeping Callistemon	4	4	Fast	n/a	FS-PS	Moderate	Moderate	Moderate	High	High	Moderate	Complete range	Sep-Oct.	Red	E	WA	R, F, Attractive new foliage, showy bird attractant flowers							
<i>Cupaniopsis anacardioides (native)</i>	Tuckeroo	7	4	Fast	n/a	FS-PS	Moderate	High	High	Moderate	Low	Low	Complete range	Sep-Oct.	White	E	DA	R, LM, bird attractant							
<i>Eucalyptus viridis</i>	Green mallee	8	4	Slow-Moderate	n/a	FS	Moderate	Moderate	Unknown	High	Moderate	Moderate	Mild acidic to Mild alkaline	Dec-Mar	White	E	CDA	R, LM, attractive small eucalypt, attracts bees and nectar eating birds.							
<i>Gaejiera parviflora (naative)</i>	Wilga	8	6	Slow	n/a	FS	High	High	Moderate	High	Low	Low	Alkaline	June-Nov	Whiate	E	DA	R, LM, ornamental, hardy species that attracts birds, butterflies, lady beetles.							
<i>Hakea spp. (native)</i>	Hakea	6	4	Moderate to Fast	n/a	FS	Moderate	Moderate	Moderate	High	Low	Moderate	Acid	May, Jul-Oct.	various	E	CD	RF, bird and butterfly attracting, cockatoos, iconic australian native							
<i>Hymenoparum flavum (Native)</i>	Native frangipani	8	4	Slow - Moderate	n/a	FS-PS	Moderate	Low	Moderate	High	Low	Low	Acid - neutral	March to July	Blue-black edible fruit	E	MW	R, bird attracting, screening, decorative fruit, foliage used for flower arranging							
<i>Melaleuca ericifolia</i>	Melaleuca	5	2	Moderate	n/a	FS-PS	High	Moderate	Moderate	High	High	Moderate	Acid - neutral	Aug-Nov	Cream	E									
<i>Stenocarpus sinuatus</i>	Firewheel tree	8	5	Slow	n/a	FS-PS	Low	Moderate	Low	High	Moderate	Low	Acid	Sep	Orange, Red	E	W	L, MF Summer flowering tree that provides nectar and shelter for birds							
<i>Taxandria juniperina (native)</i>	Native cedar	7	4	Fast	n/a	PS	High	Moderate	Moderate	Moderate	Low	Moderate	Complete range	March-June	White	E	C, A	R, LM Aromatic foliage, attracts insect eating birds.							
<i>Tristanopsis laurina</i>	Kanooka, Water gum	5	5	Slow-Moderate	n/a	PS-FS	Moderate	Low	Moderate	Fair	High	High	Acid-Neutral	Dec.	Yellow	E	MW	R, LM, aesthetic, bird-attracting, under powerline, shading, screening							
<i>Waterhousia floribunda (native)</i>	Weeping Lillypilly	6	4	Moderate to Fast	n/a	FS-PS	Low	Moderate	Moderate	High	Moderate	High	Acid to Neutral	Nov-Jan.	White	E	M, C, A	LM, S, R, Bird and bee attrafting							
<i>Acer campestre</i>	Field Maple	7	6	Moderate	n/a	PS-FS	Moderate	Low	Moderate	Moderate	High	Moderate	Acid	Sep-Oct.	yellow-green	D	MW	S, Autumn Colour, foliage interest, Ornamental							
<i>Acer negundo</i>	Fleming	5	4	Slow-Moderate	n/a	PS-FS	Moderate	Low	Moderate	Moderate	High	Moderate	Acid	Sep-Oct.	yellow-green	D	MW	S, Autumn Colour, foliage interest, Ornamental							
<i>Acer palmatum 'Atropurpureum'</i>	Japanese Maple	4	3	Slow-Moderate	n/a	PS-FS	Moderate	Low	Moderate	Moderate	High	Moderate	Acid	Sep-Oct.	Red	D	MW	S, Autumn Colour, foliage interest, Ornamental,							
<i>Acer rubrum 'Bowhall'</i>	Red Maple	8	4	Moderate	n/a	PS-FS	Moderate	Low	Moderate	Moderate	High	Moderate	Acid	Sep-Oct.	Pale Orange	D	MW	S, Autumn Colour, foliage interest, Ornamental							
<i>Kalamata olive</i>	Olive	6	3	Slow-Moderate	n/a	FS	High	Fair	High	Fair	Fair	Moderate	Complete range	Sep-Nov.	White	E	DA	R, LM							
<i>Koeleruteria paniculata</i>	Golden Rain Tree	8	8	Slow	n/a	PS-FS	Moderate	Fair	Moderate	High	Moderate	Fair	Complete range	Nov-Jan.	Bright yellow	D	D	R, LM, F							
<i>Lagerstroemia indica</i>	Crepe Myrtle	6	7	Moderate	n/a	FS	Low	Moderate	Moderate	Fair	Low	Low	Acid-Neutral	Mar-Apr.	Pink/Purple/White	D	CD	R, LM, Sh, F							
<i>Olea europaea subsp. europaea</i>	Olive	8	6	Slow-Moderate	n/a	FS	High	Fair	High	High	Fair	Moderate	Complete range	Sep-Nov.	Creamy white	E	DA	R, LM							
<i>Photinia robusta</i>	Photinia	15	4	Slow-Moderate	n/a	FS	High	Moderate	Moderate	High	Low	Low	Complete range	Oct-Nov	White	E	C, D, A	R, LM, S, F, Bird attractant							
<i>Rhododendron arboreum</i>	Rhododendron	12	4	Moderate	n/a	PS	Moderate	Low	Low	Low	Low	Low	Acid	June-Nov	Various	E	WM	Grown for showy flowers, All parts of the Rhododendron are considered toxic.							

## Species Palette 5 – Small Shrubs

INDIGENOUS TO PROVIDENCE (Grown at nursery/within Bayside)		Uses/Traits key		Habitat Key										Flowering period		Flower colours		E/D		Habitat		Uses/Traits			
INDIGENOUS (Grown Outside Bayside)		R - Robust and Hardy		H - Heath/Woodland RI = Riparian forest (interface between land and river/stream)										High = tolerates well without damage.		Fair = can tolerate medium levels		E		HD		Ground cover and shrub, interesting foliage			
NATIVE TREES (From Australia)		LM - Low Maintenance		M - Moist/Closed forest										complete range		Acid-Neutral		E		HCD		R, Long flowering period, Attractive Features, Fauna attracting			
EXOTIC (From outside Australia)		S - Shade		C - Coast - dune scrub & woodland										acid to neutral		Moderate = tolerates somewhat with some effects in low levels		E		HCW		A, R, LM, Bird attracting, screening			
Additional Species		Shade = FSh		D - Prefers dry, well drained soils & tolerates dryness once established.										acid Low = suffers serious damage/Could be fatal		Unknown		E		H		R, LM, Interesting foliage, Sh, Under powerlines, Bird attracting			
*PLEASE NOTE THE BELOW INFORMATION IS A GUIDE ONLY		F - Feature		W - Prefers or tolerates moist soils, wetness, periodic inundation										Please contact your local nursery or a horticultural professional for further advice.		Please contact your local nursery or a horticultural professional for further advice.		E		H		R, LM, Ornamental			
Use of any of the below species is preferred but not limited to these species		Sh - Prefers or tolerates full shade		A - Adaptable, growing well in most soil types										All indigenous plants provide habitat & food for local birds, insects & animals.		All indigenous plants provide habitat & food for local birds, insects & animals.		E		H		R, LM, Ornamental			
SMALL SHRUBS		Species that reach 50cm to 2 metres in height		EVC= Ecological Vegetation Class		Tolerances										Flowering period		Flower colours		E/D		Habitat		Uses/Traits	
BOTANICAL NAME	COMMON NAME	Mat. HEIGHT	Mat. SPREAD	Growth Rate	EVC	Sunlight	Wind	Salinity	Sea spray	Drought	Waterlogging	Compaction	pH Range	Flowering period	Flower colours	E/D	Habitat	Uses/Traits							
<i>Acacia brownii</i>	Heath Wattle	1	1	Moderate	n/a	PS	Moderate	Moderate	Moderate	High	Moderate	Unknown	Acid-Neutral	Jun-Oct.	Yellow	E	HD	Ground cover and shrub, interesting foliage							
<i>Acacia suaveolens</i>	Sweet Wattle	2	2	Moderate	n/a	PS-FS	Moderate	Moderate	High	High	Low	Moderate	Acid-Neutral	Apr-Sept.	Pale Yellow & White	E	HCD	R, Long flowering period, Attractive Features, Fauna attracting							
<i>Acacia ulicifolia</i>	Juniper Wattle	1	1	Moderate	n/a	PS	Moderate	Moderate	Moderate	Moderate	Fair	Unknown	Acid	Apr-Oct.	Pale Cream	E	HCW	A, R, LM, Bird attracting, screening							
<i>Allocasuarina paradoxa</i>	Green She-oak	1.5	1.5	Slow	3	PS-FS	High	Moderate	High	Fair	High	Moderate	Acid	Mar-Oct.	Red	E	HD	R, LM, Interesting foliage, Sh, Under powerlines, Bird attracting							
<i>Aotus ericoides</i>	Common Aotus	1	1	Fast	n/a	PS-FSh	Moderate	Moderate	Low	Moderate	Low	Moderate	Acid-Neutral	Aug-Nov.	Gold with red & orange	E	HWD	Sh, R, LM, Ornamental							
<i>Atriplex cinerea</i>	Coast or Grey Saltbush	2	2	Moderate	n/a	FSH-PS	High	High	High	High	Moderate	Moderate	Complete	Mar-Sep-Dec.	Red & White	E	CD	LM, R, ground cover, hedge, soil rehabilitation, erosion and stabilisation							
<i>Boschnia cinerea</i>	Showy Bossiaea	1	1	Fast	n/a	FS-PS	High	Moderate	Moderate	High	Low	Low	Unknown	Aug-Nov.	Gold/yellow to Red/purple brown	E	HCD	Ornamental, R, Hedge, screening, attractive, cuttings							
<i>Correa alba</i>	White Correa	1	1	Moderate	n/a	FS-PS	High	High	High	High	Moderate	Moderate	Complete	Mar-Sep, Nov.	Pink & White	E	C	A, R, LM, Aromatic, Power lines, hedging, cover, shrub mass							
<i>Correa reflexa</i>	Common Correa	1	1	Moderate	n/a	FS-PS	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Acid	Mar-Sep.	Green & Red	E	H	R, Sh, A, Winter aesthetic, shrub mass, bird attracting							
<i>Daviesia ulicifolia</i>	Gorse Bitter-pea	1	50cm	Fast	n/a	FS-PS	High	Low	Moderate	High	Low	Unknown	Complete	Aug-Dec.	Red & Yellow	E	H	A, Bird attracting							
<i>Dillwynia cinerascens</i>	Grey Parrot-pea	60cm-1.5	50cm-1.5	Moderate	n/a	FS-PS	Moderate	Low	Low	High	Low	Moderate	Complete	Jul-Nov.	Yellow & Orange	E	HD	Sh, Ornamental, floral display							
<i>Dillwynia glaberrima</i>	Heath or Smooth Parrot-pea	1	50cm	Moderate	719, 892, 3	FS-PS	Moderate	Low	Low	Moderate	Low	Low	Acid-Neutral	Aug-Dec.	Yellow, red centre	E	HD	Sh, Attractive, cut flowers, container plant, tolerates heavy pruning							
<i>Epacris impressa</i>	Common Heath	1	50cm	Moderate	719, 892, 3	FS-PS	Moderate	Low	Low	Moderate	Low	Low	Acid	May-Nov.	White, Pink & red	E	HCDW	A, F, R, Attractive, Cut flowers, container plant, revegetation works, nectar							
<i>Goodenia ovata</i>	Hop Goodenia	1	1	Fast	n/a	FS-PS	High	Fair	Fair	Fair	Fair	Moderate	Complete	Aug-Feb.	Bright yellow, red centre	E	HC	A, R, LM, F, Cut flower, container plant, revegetation							
<i>Gompholobium huegelii</i>	Common Wedge-pea	30cm-1	30cm-1m	Moderate	n/a	FS-PS	Moderate	Low	Low	Moderate	Low	Low	Acid-Neutral	Sep-Apr.	Cream to Yellow & Greenish	E	HCD	Sh, Attractive, A, F, R							
<i>Hibbertia fasciculata var. prostrata</i>	Stalked/Bundled Guinea-flower	50cm	30cm	Moderate	892	FS-PS	High	Moderate	Moderate	High	Low	High	Complete	Sep-Dec.	Bright Yellow	E	HD	LM, A, R, F, hedge							
<i>Hibbertia riparia</i>	Erect Guinea-flower	50cm	50cm	Moderate	719, 3	FS-PS	Fair	Low	Low	Fair	Fair	Low	Complete	Sep-Dec.	Yellow	E	HW	A, Attractive, R, LM, F							
<i>Hibbertia sericea</i>	Silky Guinea-flower	30cm-1	60cm	Slow	n/a	FS-PS	High	High	High	High	Low	Moderate	Complete	Aug-Nov.	Bright Yellow	E	HCD	R, LM, A, F							
<i>Isopogon ceratophyllus</i>	Horny Cone-bush	20cm-60cm	50cm	Slow	n/a	FS	High	Low	Low	High	Low	Low	Complete	Sep-Nov.	Yellow	E	HCD	R, LM, A, F							
<i>Lasiopetalum baueri</i>	Slender Velvet-bush	1	1	Moderate	n/a	FS-PS	High	Low	Low	High	Low	Low	Complete	Jun-Nov.	Pink & White	E	CD	H, A, Ornamental, Hedge, F, Screening, Bird attracting							
<i>Leptospermum myrsinoides</i>	Heath or Silky Tea-tree	1.5	1	Moderate	719, 892, 3	FS-PS	High	Moderate	Moderate	High	Moderate	Low	Acid-Neutral	Jun-Nov.	Pink & White	E	H	A, Screen, Hedge, F, Bird attracting, Soil control							
<i>Leucophyta brownii</i>	Cushion Bush	50cm	50cm	Moderate	919	FS	High	High	High	High	Low	Low	Complete	Dec-Feb.	Yellow, Silver, Grey-Brown	E	HCD	A, R, LM, edge defining, Insect attracting							
<i>Leucopogon virgatus</i>	Common Beard-heath	50cm	50cm	Moderate	719, 892, 3	FS-PS	High	Moderate	Moderate	High	Moderate	Low	Complete	Jul-Dec.	Pink & White	E	HCD	A, R, LM, F, Bird attracting, hedge							
<i>Monotoca scoparia</i>	Prickly Broom-heath	30cm-1.2	30cm-1.2	Moderate	892	FS-PS	High	Moderate	Moderate	High	Moderate	Low	Complete	Mar-Jul.	Pink & White	E	HCD	A, R, LM, Screen, barrier, hedge, Soil Control							
<i>Myoporum petiolatum</i>	Sticky Boobialla	1.5	1.5	Moderate	n/a	FS	High	High	High	High	Moderate	Low	Complete	Oct-Feb.	White	E	HCD	A, R, LM, F, Soil control							
<i>Olearia ramulosa</i>	Twiggy Daisy-bush	1.5	1	Moderate	n/a	FS-PS	High	Moderate	Moderate	High	Moderate	Low	Complete	Sep-Nov.	Blue	E	HCD	A, R, LM, Ornamental							
<i>Rhagodia candolleana subsp. Candolleana</i>	Seaberry Saltbush	1	2	Moderate	919, 921	FS	High	High	High	High	Moderate	Low	Complete	Sep-Feb.	Green	E	HCD	A, R, LM, soil control, habitat refuge							
<i>Ricinocarpus pinifolius</i>	Wedding Bush	1-3	1	Moderate	n/a	FS	High	Low	Low	High	Low	Low	Acid-Neutral	Sep-Feb.	White	E	HD	A, R, LM, F, Nectar, Hedge, Screen							
<i>Sambucus quadrifida</i>	White Elderberry	2	2	Moderate	919, 921	PS	Moderate	Low	Low	Moderate	High	Low	Acid-Neutral	Sep-Feb.	White	D	HMW	LM, Sh, Bird attracting							
<i>Suaeda australis</i>	Austral Seabite	50cm	50cm	Moderate	n/a	FS	High	High	High	High	High	Low	Complete	Sep-Feb.	Green & Red	E	HCW	A, R, LM, periodic inundation, bird attracting, can make dyes with foliage							
<i>Eremophila nivea</i>	Emu bush or Silky Eremophila	1.5	1.5	Moderate-Fast	n/a	FS	High	Moderate	High	High	Low	Low	Complete	Sep-Jan	Purple	E	CD	R, LM, Attracts birds and butterflies, tolerant of frost and responds well to pruning.							
<i>Grevillea spp.</i>	Grevillea	1.5	1.5	Fast	n/a	FS	High	High	High	High	Low	Low	Acid-Neutral	All year	red, orange or yellow	E	CDA	R, LM, attracts bees and nectar eating birds							
<i>Philoteca myoporoides</i>	Long-leaved Wax flower	1	1	Fast	n/a	FS	Moderate	Low	Low	Moderate	Low	Low	Acid-Neutral	Sep-Dec.	White	E	D	R, LM, attracts bees, butterflies and nectar eating birds							
<i>Prostanthera rotundifolia</i>	Native mint bush	2	2	Fast	n/a	FS	Moderate	Low	Low	High	Low	Low	Acid-Neutral	Sep-Dec.	Purple	E	DA	R, LM, Flowers attract bees and beneficial insects to garden							
<i>Juniperus communis subsp.</i>	Common juniper	2	4	Slow	n/a	FS	High	Moderate	High	Moderate	Low	Low	Complete	May-June	Cone - Berries	E	DC	R, LM, F, berries can attract birds							
<i>Salvia subsp.</i>	Salvia	1	60cm	Fast	n/a	FS/PS	High	High	High	High	Low	Moderate	Acid	Sep-June	various	E	CDA	R, LM, attracts bees and nectar eating birds							
<i>Lavandula spp.</i>	Lavender	1	1	Fast	n/a	FS	High	Low	High	High	Low	Moderate	Alkaline	Sep-June	Lavender	E	CDA	R, LM, F, attracts bees							
<i>Choisya spp.</i>	Mexican orange blossom	1	1.5	Fast	n/a	FS/PS	Low	Moderate	High	Moderate	Low	Low	Complete	Aug-Nov.	White	E	CDA	S, Sh, ornamental plant, can be trained to a hedge							
<i>Gardenia spp.</i>	Gardenia	1.5	1.5	Slow	n/a	FS/PS	Low	Low	Low	High	Low	Low	Acid	Nov-May	Creamy white	E	M	F, ornamental shrub with highly fragrant flowers							
<i>Rhaphiolepis spp.</i>	Indian hawthorn	2	1.5	Slow	n/a	FS	High	High	High	High	Low	Low	Complete	Sep-Jan	White-Pink	E	CDA	R, LM, F							
<i>Hebe buxifolia f</i>	Hebe	1	1	Fast	n/a	FS	High	High	High	High	Low	Low	Alkaline	June-Sep	/hite, pink, blue, deep purple, crimson	E	CD	R, LM, attracts bees and butterflies							
<i>Sedum spp.</i>	Stonewort	0.6	1	Fast	n/a	FS-PS	High	High	High	High	Low	High	acid to neutral	Dec-March	Yellow, orange, pink or white	CDA	Attracts	Attracts bees, butterflies							

## Species Palette 6 – Grasses and Tussocks

INDIGENOUS TO PROVIDENCE (Grown at nursery/within Bayside)		INDIGENOUS (Grown Outside Bayside)		NATIVE TREES (From Australia)		EXOTIC (From outside Australia)		Additional Species									
	Full Sun = FS		Part Shade=PS		Shade = FSh												
<p><b>PLEASE NOTE THE BELOW INFORMATION IS A GUIDE ONLY</b>            Use of any of the below species is preferred but not limited to these species.</p>																	
<p><b>GRASSES AND TUSsocks</b></p>																	
BOTANICAL NAME	COMMON NAME	Mat. HEIGHT	Mat.SPREAD	Growth Rate	EVC	Sunlight	Tolerances							Flowering period	Flower colours	Habitat	Uses/Traits
							Wind	Salinity	Sea spray	Drought	Waterlogging	Compaction	pH Range				
<i>Aurolia flavescens</i>	Coast Spear-grass	50cm	50cm	Fast	921	FS	High	High	High	Fair	Low	Moderate	Complete	Sep-Feb.	Brown	HCD	A, R, LM,
<i>Aurolia mollis</i>	Soft Spear-grass	30cm	30cm	Fast	719, 921, 3	FS	High	High	High	High	Low	High	Complete	Sep-Dec.	Green or purple/Strawed	HCD	A, R, LM, F, Habitat
<i>Aurolia stipoides</i>	Prickly Spear-grass	1	1	Moderate	n/a	FS	High	High	High	Fair	Moderate	Unknown	Complete	Sep-Feb.	White	HCD	A, R, LM, F, Habitat, wildflower garden, Bird attracting
<i>Baumea rubiginosa</i>	Soft Twig-rush	1m	Spreading	Moderate	707	FS-PS	Moderate	Moderate	Moderate	Moderate	High	Moderate	Complete	Sep-Mar.	Reddish Brown	RIWeM	A, R, LM, F, Habitat
<i>Caesia parviflora</i>	Pale Grass-Lily	50cm	25cm	Moderate	n/a	FS-PS	Moderate	Low	Low	Moderate	Moderate	Low	Complete	Sep-Feb.	Greenish white-Blue	HM	A, LM, Ornamental, F, Habitat
<i>Carex pumila</i>	Strand Sedge	80cm	80cm	Moderate	n/a	FS	High	High	High	High	Moderate	High	Complete	Apr-Jul.	yellow/brown/red glumes	CDW	A, R, LM, F, Habitat
<i>Deyeuxia quadrifida</i>	Reed Bent-grass	15cm	40cm	Fast	719, 3	FS-PS	Moderate	Low	Low	Moderate	High	Low	Complete	Sep-May.	Pale Green/Purple	RIM	A, R, LM, F, Habitat
<i>Dianella brevicaulis</i>	Small-flower Flax-lily	60cm	50cm	Moderate	919	FS-PS	Moderate	Low	Low	Moderate	Low	Low	Complete	Sep-Feb.	Blue-Purple	HM	A, LM, Ornamental, F, Habitat
<i>Dianella laevis</i>	Pale Flax-lily	60cm	50cm	Moderate	n/a	FS-PS	Moderate	Low	Fair	Fair	Fair	Low	Acid to Neutral	Aug-Jan.	Blue and Yellow	HM	A, LM, Ornamental, F, Habitat
<i>Dianella longifolia</i>	Arching Flax-lily	1.3	1m	Moderate	n/a	FS-PS	Moderate	Low	Fair	Fair	Fair	Low	Complete	Aug-Jan.	Blue to Violet	HM	A, LM, Ornamental, F, Habitat
<i>Dianella revoluta</i>	Black-anther Flax-lily	50cm	spreading	Fast	719, 3	FS-PS	Fair	Moderate	Moderate	Fair	Fair	Fair	Acid	Sep-Dec.	Blue or Purple	HM	A, LM, Ornamental, F, Habitat
<i>Dichelachne crinita</i>	Long-hair Plume-grass	30cm	30cm	Moderate	n/a	FS-PS	High	Fair	Fair	Fair	Moderate	Low	Complete	Oct-Dec.	Green to Purple	HM	A, LM, F, Habitat
<i>Distichlis distichophylla</i>	Australian Salt-grass	10cm	10cm	Slow	n/a	FS	High	High	High	Fair	High	High	Complete	Sep-Nov.	Green growth	CDW	A, R, LM, F, Interesting foliage, Bloom in response to rain
<i>Eragrostis brownii</i>	Common Love-grass	20cm	20cm	Fast	n/a	FS-PS	High	High	Moderate	Fair	Fair	Low	Complete	Sep-Apr.	Green growth	HM	A, LM, F, Bird attracting, turf, groundcover, can flower most of year
<i>Ficinia nodosa</i>	Knobby Club-sedge	50cm	50cm	Moderate	919	FS	High	High	High	Fair	High	High	Complete	Sep-Feb.	Brown	RIWeM	A, R, LM, F, Habitat, pond, Can flower throughout year
<i>Gahnia radula</i>	Thatch Saw-sedge	2	1.5	Slow	719, 892, 3	PS-FS	Moderate	Low	Moderate	Moderate	High	High	Acid to Neutral	Sep-Feb.	Brown to Black	MRI	A, R, LM, F, Habitat
<i>Gahnia siberiana</i>	Red-fruit Saw-sedge	1.5	2	Moderate	892	FS-FS	High	Low	Moderate	Moderate	High	High	Acid to Neutral	Sep-Feb.	Yellow-Deep Red	MRI	A, R, LM, F, Habitat
<i>Hypolaena fastigiata</i>	Tassel Rope-rush	50cm	1.5	Moderate	892	FS-PS	Moderate	Low	Low	Moderate	High	Low	Complete	Aug-Dec.	Reddish Brown	MRI	A, R, LM, F, Habitat, Can flower most of year
<i>Juncus pallidus</i>	Rush	1	50cm	Moderate	n/a	FS-PS	High	Low	Fair	Fair	High	Fair	Acid to Neutral	Oct-Jan.	Green	E	A, R, LM, F, Habitat, bird attracting, pond, flowers most of year
<i>Lachnagrostis billardieri</i>	Coast Blown-grass	80cm	20cm	Moderate	n/a	FS-PS	Moderate	Low	Low	Moderate	High	Low	Complete	Sep-Nov.	Green/Purple Spikelets	MRI	A, R, LM, F, Ground cover, turf
<i>Lepidosperma concavum</i>	Sandhill Sword-sedge	60cm	2	Moderate	719, 892, 921, 3	PS-FS	High	High	High	Moderate	High	Fair	Complete	Sep-Feb.	Yellow	C, HRI, We	A, R, LM, R, Groundcover
<i>Lepidosperma laterale</i>	Variable Sword-sedge	1.5	2	Moderate	719, 3	FS-PS	Moderate	Low	Low	Moderate	High	Low	Complete	Sep-Feb.	Red to grey/brown	MRI	A, R, LM, F, Frog Habitat
<i>Lomandra filiformis</i>	Wattie Mat-rush	50cm	30cm	Slow	719, 3	FS-FSh	High	Moderate	Fair	Fair	Fair	Fair	Acid to Neutral	Oct-Nov.	Yellow	HD	A, LM, Ornamental, F, Habitat, FSh
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	1	1	Moderate	719, 707, 3	FS-PS	Moderate	Moderate	Fair	Fair	High	High	Complete	Aug-Feb.	Yellow, Purple centre	MRI	A, R, LM, F, Habitat, ground cover, edge
<i>Lomandra multiflora</i>	Many-flowered Mat-rush	30cm	30cm	Moderate	n/a	FS	Moderate	Low	Low	Moderate	Low	Low	Complete	Jun-Nov, Jan.	Creamy Yellow	HM	A, LM, Ornamental, F, Habitat, Erosion control
<i>Microaena stipoides var stipoides</i>	Weeping Grass	30cm	50cm	Moderate-Fast	719, 3	PS-FS	High	High	Moderate	Moderate	Moderate	Moderate	Acid to Neutral	Oct-Dec.	Green growth	HC	A, R, LM, Turf/lawn or groundcover
<i>Paterosia occidentalis</i>	Long Purple-flag	40cm	40cm	Moderate	n/a	FS	Fair	Fair	Fair	Moderate	High	Moderate	Acid	Sep-Dec.	Purple	HDW	LM, Wildlife attracting, Wildflower, Attractive foliage,
<i>Poa labillardieri</i>	Common Tussock-grass	50cm	50cm	Moderate	n/a	PS-FS	High	Fair	Moderate	Low	High	High	Acid to Neutral	Oct-Dec.	Golden	HC	A, R, LM, Bird attracting, Attractive, Ornamental, groundcover, erosion control
<i>Poa paliformis</i>	Coast or Blue Tussock-grass	50cm	50cm	Moderate-Fast	919	FS-PS	High	Fair	High	Fair	Moderate	High	Complete	Dec.	Golden	HC	A, R, LM, Bird attracting, Attractive, Ornamental, groundcover, erosion control
<i>Poa sieberana</i>	Tussock-grass	30cm	30cm	Moderate-Fast	719, 3	FS-PS	High	Moderate	Moderate	High	Moderate	Moderate	Complete	Oct-Mar.	Green or Purplish	HD	R, A, Ornamental, border plant, Bird/butterfly attracting
<i>Byttosperma caespitosum</i> (syn. <i>Australanthonia caespitosa</i> )	Common Wallaby-grass	40cm	40cm	Moderate-Fast	n/a	FS-PS	High	Moderate	Moderate	High	Moderate	Moderate	Complete	Oct-Dec.	White	HC	A, R, LM, Rockeries, Bird-attracting, lawn alternative
<i>Byttosperma geniculatum</i> (syn. <i>Australanthonia geniculata</i> )	Knead Wallaby-grass	15cm	15cm	Slow	921	FS-PS	High	Moderate	Fair	Fair	Fair	Moderate	Complete	Oct-Dec.	White	HCD	R, LM, Ornamental, Rock planting, Lawn grass, bird attracting
<i>Byttosperma racemosum</i>	Clustered Wallaby-grass	20cm	20cm	Moderate-Fast	n/a	FS-PS	High	Moderate	Moderate	High	Moderate	High	Complete	Oct-Dec.	White	HCDW	A, R, LM, Feature, Revegetation, Lawn alternative, thrives in poor soil, rockeries
<i>Byttosperma setaceum</i>	Bristly Wallaby-grass	60cm	40cm	Moderate	n/a	FS-PS	High	Moderate	Fair	High	Fair	Moderate	Complete	Oct-Dec.	White	HCDW	A, R, LM, Feature, Revegetation, Lawn alternative, thrives in poor soil, rockeries
<i>Schoenus brevifolius</i>	Zig-zag Bog-sedge	90cm	30cm	Moderate	892	FS-PS	Moderate	Moderate	Moderate	Low	High	Low	Complete	Sep-Feb.	Red-brown	WeMW	Shiny dark red-brown foliage, ornamental, bird attracting,
<i>Spinifex sericeus</i>	Hairy Spinifex	30cm	Spreading	Moderate	n/a	FS	High	High	High	High	Moderate	Low	Complete	Nov-Dec.	Yellow and Brown	CDW	R, LM, Bush, Groundcover
<i>Sporobolus virginicus</i>	Salt or Sand Couch	10cm	Spreading	Moderate	n/a	FS	High	Fair	Fair	High	High	Low	Complete	Dec-May.	Green-purple	CWeW	A, LM, coastal and low dune stabilizer
<i>Tetrarrhena juncea</i>	Forest wire-grass	4m	4m	Moderate-Fast	719, 3	PS-FS	Moderate	Low	Low	High	Moderate	Low	Complete	Nov-Apr.	Purplish	WHD	A, Habitat, Climber, High management, Wombat attracting
<i>Themeda triandra</i>	Kangaroo Grass	50cm	50cm	Moderate	719, 3	FS-PS	High	Moderate	Fair	Moderate	Fair	Fair	Complete	Sep-Dec.	Purple-Red	HMW	A, R, LM, Accenting, wildflower
<i>Thelonema caespitosum</i>	Tufted Blue Lily	20cm	1.3m	Moderate	n/a	FS-PS	Moderate	Low	Fair	Moderate	Fair	Moderate	Complete	Sep-Dec.	Blue, White and Yellow	HWeW	A, Rockeries, border planting
<i>Tricornis eliator</i>	Yellow Rush-lily	30cm	50cm	Slow/Difficult	n/a	FS	Moderate	Low	Low	Low	Moderate	Low	Complete	Oct-Mar.	Bright Yellow	HDW	A, ground cover, Rockeries
<i>Triglochin striatum</i>	Streaked Arrowgrass	10cm	20cm	Moderate	n/a	FS-PS	Moderate	High	Fair	Moderate	High	Moderate	Complete	Aug-Apr.	Dark Green	CW	Can tolerate poor drainage well, erosion protection, semi-aquatic
<i>Xanthorhoea minor subsp. lutea</i>	Small Grass-tree	50cm	50cm	Slow	719, 892, 3	PS-FS	Moderate	Moderate	Moderate	Moderate	Low	Low	Complete	Dec-Feb.	White/creamy-pale yellow	HCD	A, R, LM, Ornamental, F, Habitat, bird attracting, architectural foliage
<i>Knifofia uvaria</i>	Red hot poker	90cm	90cm	Moderate-Fast	n/a	FS-PS	High	Moderate	Moderate	High	Low	Low	Complete	Nov-Apr.	Various	CDA	Attracts birds, butterflies, bees
<i>Liriope muscari</i>	Lily turf	50cm	40cm	Moderate-Fast	n/a	FS-PS	High	High	High	High	Low	Low	Acid to Neutral	Nov-Jan	Purple	RLM	Attractive foliage, can be used as lawn substitute ground cover

# Species Palette 7 – Groundcovers and Wildflowers

INDIGENOUS TO PROVIDENCE (Grown at nursery/within Bayside)		Uses/Traits Key		Habitat Key										pH Range		Flowering period		Flower colours		Habitat		Uses/Traits	
INDIGENOUS (Grown Outside Bayside)		Blue Stars		R = Robust and Hardy		N = Moist/Woodland		M = Riparian forest (Interface between land and river/stream)		G = Grassland		High = tolerates well without damage.		Complete range		Fair = can tolerate medium levels		CD = Coastal garden, habitat		Low = suffers serious damage to death if exposed		Please contact your local nursery or a horticultural professional for further advice.	
NATIVE TREES (From Australia)		Full Sun = FS		LM = Low Maintenance		M = Moist/Woodland		M = Riparian forest (Interface between land and river/stream)		G = Grassland		High = tolerates well without damage.		Complete range		Fair = can tolerate medium levels		CD = Coastal garden, habitat		Low = suffers serious damage to death if exposed		Please contact your local nursery or a horticultural professional for further advice.	
EXOTIC (From outside Australia)		Part Shade=PS		S = Shade Tree		C = Coast - dune scrub & woodland		G = Grassland		G = Grassland		High = tolerates well without damage.		Complete range		Fair = can tolerate medium levels		CD = Coastal garden, habitat		Low = suffers serious damage to death if exposed		Please contact your local nursery or a horticultural professional for further advice.	
Additional Species		Shade = FSh		F = Feature Tree		S = Shade Tree		G = Grassland		G = Grassland		High = tolerates well without damage.		Complete range		Fair = can tolerate medium levels		CD = Coastal garden, habitat		Low = suffers serious damage to death if exposed		Please contact your local nursery or a horticultural professional for further advice.	
PLEASE NOTE THE BELOW INFORMATION IS A GUIDE ONLY		Sh = Prefers or tolerates full shade		F = Feature Tree		S = Shade Tree		G = Grassland		G = Grassland		High = tolerates well without damage.		Complete range		Fair = can tolerate medium levels		CD = Coastal garden, habitat		Low = suffers serious damage to death if exposed		Please contact your local nursery or a horticultural professional for further advice.	
Use of any of the below species is preferred but not limited to these species		Sh = Prefers or tolerates full shade		F = Feature Tree		S = Shade Tree		G = Grassland		G = Grassland		High = tolerates well without damage.		Complete range		Fair = can tolerate medium levels		CD = Coastal garden, habitat		Low = suffers serious damage to death if exposed		Please contact your local nursery or a horticultural professional for further advice.	
GROUND COVERS AND WILDFLOWERS AND CLIMBERS		Sh = Prefers or tolerates full shade		F = Feature Tree		S = Shade Tree		G = Grassland		G = Grassland		High = tolerates well without damage.		Complete range		Fair = can tolerate medium levels		CD = Coastal garden, habitat		Low = suffers serious damage to death if exposed		Please contact your local nursery or a horticultural professional for further advice.	
BOTANICAL NAME	COMMON NAME	Mat. HEIGHT	Mat. SPREAD	EvC- Ecological Vegetation Class	EvC	Sunlight	Wind	Salinity	Sea spray	Drought	Waterlogging	Compaction	pH Range	Flowering period	Flower colours	Habitat	Uses/Traits						
<i>Acacia novae-hollandiae</i>	Bidgee-widgee	Prostrate	1m	Moderate	n/a	FSH-FS	High	High	High	Fair	High	Moderate	Complete	Sep-Dec	Brown	CSHA	R, LM, Thorns, wildflower, bush						
<i>Acrotriche serrulata</i>	Honey Pots	30cm	30cm	Moderate	719, 3	PS-FS	Moderate	Moderate	Moderate	High	Low	Moderate	Complete	May-Oct	Greenish	HD	Fruiting, Habitat, Mixed bed use, Rockeries, Bird attracting, fragrant						
<i>Adiantum mesophaea</i>	Dune Thistle	60cm	60cm	Moderate to Fast	n/a	FS	High	High	High	High	Low	Moderate	Complete	Sep-Jun	Yellow/Pale Purple	CD	R, Coastal garden, habitat						
<i>Amperea xiphoclada</i> var. <i>xiphoclada</i>	Broom Spurge	40cm	40cm	Moderate	719, 892, 3	FS	Moderate	Low	High	Moderate	Low	Moderate	acid to neutral	Sep-Feb	Cream and brown	HMD	Rockeries and underplanting, mass planting, hedge feature, unique leaves						
<i>Apium prostratum</i> ssp. <i>prostratum</i>	Sea Celery	20cm	50cm	Moderate to fast	n/a	PS-FS	Fair	High	High	High	Low	Moderate	Complete	Oct-Apr	White	CW	Attractive container, ferry foliage, Cultural, habitat, native animal attracting						
<i>Arrhapidium strictum</i>	Chocolate Lily	30cm	30cm	Slow to Moderate	n/a	PS-FS	Moderate	Moderate	Moderate	Moderate	Fair	Moderate	acid	Sep-Dec	Purple	HA	Wildflower, fragrant, container plant, deciduous, mass planting aesthetic						
<i>Astroloma humifusum</i>	Cranberry Heath	50cm	1.5m	Slow	719, 3	PS-FS	Moderate	Fair	Fair	High	Moderate	Moderate	acid	Apr-Sep	Red	HD	Bird attracting, winter foliage, container plant, native bush garden						
<i>Bossiaea prostrata</i>	Creeping Bossiaea	10cm	50cm	Slow to Moderate	719	PS-FS	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Alkaline to neutral	Sep-Dec	Yellow/Red-brown	HD	Weed suppression, erosion control, ornamental, embankments, rockeries.						
<i>Brachycome parvula</i>	Coast Daisy	20cm	20cm	Moderate to Fast	n/a	PS-FS	High	High	High	High	Moderate	Unknown	Complete	Sep-Dec	Purple	CW	R, LM, Interesting foliage						
<i>Burchardia umbellata</i>	Milkmaids	30cm	10cm	Slow to moderate	n/a	PS-FS	Moderate	Unknown	Unknown	Fair	Moderate	Unknown	acid	Sep-Nov	White	HDW	Deciduous, Wildflower and bushgarden, container planting						
<i>Carpobrotus rossii</i>	Karkalla	10cm	1m	Moderate to Fast	921	PS-FS	High	High	High	High	Moderate	Unknown	Complete	Sep-Dec	Purple	CD	R, LM, interesting foliage						
<i>Centella cordifolia</i> (S)	Centella	Prostrate	2m	Moderate	707	PS-FS	Moderate	Moderate	Moderate	Low	High	Unknown	Complete	Aug-Dec	White/pink	C, R, W, M	Pond, Ornamental, wetland, bushy						
<i>Chamaecilla carymboosa</i>	Blue Stars	10cm	10cm	Moderate	n/a	PS-FS	Moderate	Moderate	Moderate	Fair	Fair	Unknown	Complete	Aug-Nov	Blue	HW	Wildflower/Bush Garden, container planting						
<i>Chrysocarpum apiculatum</i>	Common Everlasting	20cm	50cm	Moderate	n/a	FS	High	High	High	High	Low	Fair	Complete	Sep-Dec	Yellow	HD	Silver foliage, Wildflower/bushgarden, container planting						
<i>Corandium sporodides</i>	Button Everlasting	30cm	30cm	Moderate	n/a	PS-FS	Moderate	Low	Moderate	High	Low	Low	Complete	Sep-Dec	Pale/Lemon yellow	HD	Rockeries, Attracts pollinators, Resilient planting						
<i>Dichondra repens</i>	Kidney-weed	Prostrate	indefinite	Moderate to Fast	919, 719, 921, 3	FSH-FS	Fair	Moderate	Moderate	Low	Fair	Unknown	Complete	Sep-Dec	White/Pale yellow/Green	HCA	R, LM, Interesting foliage, Bush garden, container planting						
<i>Diophya crassifolium</i> subsp. <i>Clavellatum</i>	Rounded Noon-flower	Prostrate	1m	Moderate	919	FS	High	High	High	High	Moderate	Unknown	Complete	Oct-Dec	Pink	CA	R, LM, Interesting foliage, bush garden						
<i>Drosera whittakeri</i> subsp. <i>Abernans</i>	Scented Sundew	20cm	20cm	Moderate	719, 3	PS	Moderate	Moderate	Moderate	Moderate	Moderate	Unknown	acid	Jul-Oct	White	HM	Perennial, deciduous, wildflower/bushgarden, container, fragrant, carnivorous						
<i>Drosera petalata</i> subsp. <i>Auriculata</i>	Tall Sundew	80cm	20cm	Slow to Moderate	719, 892, 3	PS-FS	Fair	Fair	Fair	Fair	High	Unknown	acid	Aug-Dec	Pink and white	HWG	bushgarden, container planting, carnivorous						
<i>Erodium nutans</i>	Nodding Saltbush	20cm	1m	Moderate to Fast	n/a	PS-FS	High	High	High	High	Fair	Fair	Complete	Sep-Dec	White	HCD	R, LM, Colourful fruit						
<i>Enchylium tomentosum</i>	Ruby Saltbush, Barrier Saltbush	Prostrate	1m	Moderate	n/a	PS-FS	High	High	High	High	Fair	Fair	Complete	May-Sep	Red with pink fruit	CD	R, LM, Bird attracting, bush garden						
<i>Epilobium billardierianum</i>	Variable Willow-herb	1m	70cm	Moderate	707	PS-FS	Moderate	Moderate	Moderate	Low	Fair	Unknown	Complete	Sep-Feb	Purple/pink	RW	Rockeries, watercourses, damp area planting						
<i>Frankenia pacificora</i>	Southern Sea-heath	10cm	50cm	Moderate	n/a	FS	Fair	High	High	High	Fair	Unknown	Alkaline to neutral	Jun-Oct	Pink	CD	Interesting foliage, shrubbing, hedging, container planting, bush garden						
<i>Geranium islandicum</i>	Austral Crane-bill	20cm	30cm	Moderate to Fast	719, 3	PS	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Complete	Aug-Dec	Pale pink/white yellow	HVA	R, Rockeries, pot plant, can grow quickly and spread in always wet soil						
<i>Gonocarpus humilis</i>	Shade Raspwort	50cm	70cm	Moderate	892	PS	Moderate	Low	Low	Moderate	High	Moderate	Unknown	Oct-Dec	Yellow-green	CHMW	Perennial herb, prostrate and sprawling						
<i>Gonocarpus micranthus</i>	Creeping Raspwort	Prostrate	50cm	Moderate	n/a	PS-FS	Moderate	Low	Low	Moderate	High	Moderate	Unknown	Dec-Feb	Red	W	Prostrate, ascending or erect, many branched						
<i>Gonocarpus tetragynus</i>	Poverty Spurge	20cm	30cm	Moderate	3	PS-FS	Moderate	Low	Low	Moderate	Moderate	Moderate	Unknown	Dec-Feb	Reddish-pink	HA	Wirey, erect perennial herb. Good understorey below established trees						
<i>Goodenia humilis</i>	Swamp Goodenia	10cm	1m	Moderate	919, 707	PS-FS	Moderate	Low	Low	Moderate	High	Moderate	Unknown	Nov-Mar	Yellow	W	dainty, little herb, good for moist sunny locations, eg. besides pools						
<i>Goodenia geniculata</i>	Bent Goodenia	10cm	50cm	Moderate	n/a	PS-FS	Moderate	Moderate	Low	Moderate	Moderate	Moderate	Alkaline to neutral	Sep-Jan	Yellow	HA	Can be planted as colourful foreground for natives, beds, weed suppressing						
<i>Goodenia radicans</i>	Shiny Swamp-mat	10cm	50cm	Moderate	n/a	PS-FS	High	High	High	Low	High	Unknown	Complete	Mar-Dec	White	CW	Ornamental pond, bush garden						
<i>Grotalia pubescens</i>	Glandular Brooklime	20cm	20cm	Moderate	707	PS	Moderate	Low	Low	Moderate	High	Moderate	Unknown	Oct-mar	pale pink with yellow	RW	Ornamental pond edges and rockeries, useful in waterlogged environments						
<i>Haloragis brownii</i> (N)	Swamp Raspwort	30cm	50cm	Moderate	919, 921	PS-FS	Moderate	Low	Low	Moderate	High	Moderate	Unknown	Oct-Feb	Reddish brown	CW	watercourse edging, damp locations						
<i>Haloragis ovalifolia</i>	Prickly Guinea-flower	30cm	50cm	Moderate	n/a	PS-FS	Moderate	Low	Low	Moderate	Moderate	Moderate	Unknown	Sep-Dec	Bright yellow	HD	Attractive planting for open soils, cottage gardens, and rockeries						
<i>Hydrocotyle laxiflora</i>	Stinking Pennywort	40cm	1.2m	Moderate to Fast	719, 3	PS-FS	Fair	Moderate	Moderate	Moderate	Fair	Unknown	Alkaline to neutral	Oct-Dec	Green	HDW	Wildflower/bush garden, ornamental pond						
<i>Isotoma fluviatilis</i>	Swamp Isotoma	Prostrate	1m	Moderate	n/a	PS-FS	Moderate	Low	Low	Low	High	Unknown	acid	Oct-Nov	Blue	W	Ornamental pond, wildflower/bush garden, allergenic						
<i>Kennedia prostrata</i>	Running Postman	Prostrate	1m	Moderate	n/a	PS-FS	High	Fair	Fair	High	Moderate	Unknown	Complete	Apr-Dec	Red	HCD	Interesting foliage, bird attracting, Wildflower/Bush Garden						
<i>Lachnagrostis billardieri</i>	Coast Blow-grass	50cm	20cm	Moderate	919	FS	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Unknown	Sep-Dec	Straw yellow	CW	Coastal garden, erosion control, visual interest, tufted, adds texture						
<i>Lagenophora stipitata</i>	Common Bottle-daisy	5cm	20cm	Moderate	n/a	FSH-FS	Moderate	Low	Low	Moderate	Moderate	Moderate	Unknown	Sep-Feb	Blue	HCA	Great groundcover over bare earth, container planting, frost tolerant						
<i>Laxmannia orientalis</i>	Dwarf Wire Lily	5cm	10cm	Moderate	n/a	PS-FS	Moderate	Low	Low	Moderate	Moderate	Moderate	Unknown	Sep-Dec	Red, Brown and White	HD	Border for dedicated remnant reserves						
<i>Labelia anceps</i>	Angled Labelia	Prostrate	50cm	Moderate	919, 921	PS	Moderate	Moderate	Moderate	Moderate	Moderate	Unknown	acid to neutral	Mar-Dec	Blue, White	HW	Ornamental pond, wetland, bush garden, allergenic						
<i>Labelia pratensis</i>	Poison Labelia	Prostrate	50cm	Moderate	n/a	PS-FS	High	Low	Low	Low	High	Moderate	acid to neutral	Oct-May	Blue-illiac and white	HW	Toxic. Excellent groundcover for bog. Useful in ferneries when not too dark						
<i>Obercularia ovata</i>	Bracid Sinkweed	10cm	20cm	Moderate	n/a	PS-FS	High	Low	Low	Low	High	Moderate	acid to neutral	Sep-Dec	Greenish	HVA	Toxic. Excellent groundcover for bog. Useful in ferneries when not too dark						
<i>Obercularia varia</i>	Variable Sinkweed	25cm	30cm	Moderate	719, 3	PS-FS	High	Low	Low	Low	High	Moderate	acid to neutral	Jun-Mar	Green or Purple	MWH	Toxic. Unpleasant smell when crushed						
<i>Ondifolia reniformis</i> (syn <i>Vilarsia reniformis</i> )	Running Marsh-flower	1m	1m	Moderate to Fast	707	PS-FS	Moderate	Low	Low	Low	High	Unknown	acid	Mar-Dec	Yellow	RW	Ornamental pond, wetland, bush garden, allergenic						
<i>Pelargonium australe</i>	Austral Stork's-bill	50cm	50cm	Moderate	n/a	PS-FS	Moderate	Moderate	Moderate	Fair	Low	Unknown	acid to neutral	Mar-Dec	Pink	CA	Edging, Wildflower/bush garden, container planting						
<i>Pelargonium odoratum</i>	Kopata	30cm	30cm	Moderate	n/a	PS-FS	Moderate	Low	Low	Moderate	Low	Low	acid to neutral	Dec-Feb	White/pink	HA	Open border plant, needs replacing annually, regenerates via fire						
<i>Pimelea humilis</i>	Common Rice-flower	30cm	40cm	Moderate	n/a	PS-FS	Fair	Fair	Fair	Fair	Low	Unknown	Complete	Sep-Jan	White	HA	Dainty, Wildflower/Bush Garden, container, allergenic, heavy pruning						
<i>Pimelea octophylla</i>	Woolly Rice-flower	1m	50cm	Moderate	n/a	PS-FS	Moderate	Low	Low	Moderate	Low	Low	acid to neutral	Oct-Dec	Cream-pale yellow	HD	wooly appearance, small gardens, rockeries in open soil, warm positioning						
<i>Platylobium obtusangulum</i>	Common Flat-pea	40cm	1m	Slow to Moderate	892	PS-FS	Moderate	Moderate	Moderate	High	Low	Unknown	acid	Sep-Dec	Orange	HD	Wildflower/bush garden, container planting, foliage interest						
<i>Platysace heterophylla</i>	Slender Platysace	30cm	30cm	Slow	PS	FS	Moderate	Low	Low	Moderate	Low	Low	acid to neutral	Aug-Jan	White	HDW	Shortlived, required fire to stimulate regeneration						
<i>Podathea angustifolia</i>	Sticky-Long Heads	30cm	30cm	Moderate to fast	n/a	FS	Moderate	Low	Low	Moderate	Low	Low	acid to neutral	Sep-Oct	Green and yellow	HD	Shortlived, annual herb						
<i>Paranthera microphylla</i>	Small Paranthera	10cm	30cm	Moderate	719, 3	PS	Fair	Moderate	Moderate	Fair	Moderate	Unknown	acid	Mar, Apr, Aug-Dec	White	CA	Wildflower/Bush garden						
<i>Parostylis lanifolia</i>	Tall Green-head	70cm	20cm	Moderate	719, 3	PS	Moderate	Low	Low	Moderate	Low	Low	acid to neutral	Apr-Sep	Green	CHD	Deciduous, perennial herb, underground tubers						
<i>Pteridium esculentum</i>	Austral bracken	1.5m	1.5m	Moderate	919, 719, 892, 921, 3	PS-FS	High	Fair	Fair	High	High	Unknown	acid	Jun-Oct	Green	HMCWD	A, R, LM, interesting foliage, allergenic, bush garden						
<i>Sarcocornia quinqueflora</i>	Beaded Glasswort or Samphire	Prostrate	50cm	Slow to Moderate	919, 921	FS	High	High	High	Moderate	High	Unknown	Complete	Nov-Mar	Cream	CW	R, LM, Colourful foliage						
<i>Senecio minimus</i>	Shrubby Fireweed	1.5m	50cm	Fast	919, 921	PS	Moderate	High	Low	Moderate	Low	High	acid to neutral	Dec-Apr	Pale yellow	MW	A, butterfly attracting (caterpillar food) Coloniser for disturbed soils						
<i>Stylidium graminifolium</i>	Grass Trigger-plant	30cm	30cm	Slow to Moderate	n/a	PS-FS	Fair	Fair	Fair	Moderate	Low	Unknown	acid	Sep-Dec	Pink	HDW	Container planting, Wildflower/bush garden, architectural form						
<i>Tetragonia implexicoma</i>	Bower Spinach	Prostrate	1m	Moderate to Fast	919, 921	PS-FS	High	High	High	High	Moderate	Unknown	Complete	Aug-Dec	Yellow	CA	Bush garden, bird attracting, fragrant flowers						
<i>Tetragonia tetragonoides</i>	New Zealand Spinach	Prostrate	1m	Fast	n/a	FS-PS	Moderate	High	High	High	High	Moderate	Complete	Dec-Feb	Yellow	CA	Excellent pot herb or 'gappfiller' for groundcover						
<i>Thysanotus patersonii</i>	Twining Fringe-lily	1m	1m	Slow to Moderate	n/a	PS-FS	Moderate	Moderate	Moderate	Fair	Moderate	Unknown	acid	Aug-Nov	Purple	HDW	Wildflower/bush garden, container planting, deciduous						
<i>Thysanotus tuberosus</i>	Common Fringe-lily	60cm	15-20cm	Moderate	n/a	PS	Moderate	Unknown	Unknown	Moderate	Moderate	Unknown	acid	Oct-Dec	Purple	HD	Deciduous, Wildflower and bushgarden, container planting						
<i>Trochium composita</i>	Wild Parsley	80cm-1.5m	2m	Moderate	n/a	FSH-FS	Moderate	Low	Low	Moderate	High	Moderate	Unknown	Sep-Feb	White	HD	Distinct flower shape, all light levels, unique flower.						
<i>Triplachin procurrem</i>	Water Ribbons	60cm																					

## Species Palette 8 – Climbers

INDIGENOUS TO PROVIDENCE (Grown at nursery/within)		Additional Species		Uses/trait key		Habitat Key																																							
INDIGENOUS (Grown Outside Bayside)		NATIVE TREES (From Australia)		EXOTIC (From outside Australia)		Additional Species		PLEASE NOTE THE BELOW INFORMATION IS A GUIDE ONLY		See all any of the below species is preferred but not limited to these species.																																			
Full Sun = FS		Part Shade=PS		Shade = FSh		R - Robust and Hardy		LM - Low Maintenance		S - Shade Tree		F - Feature Tree		Sh - Prefers or tolerates full shade		H - Heath/Woodland RI = Riparian forest (interface between land and river/stream)		M - Moist/Closed forest		C - Coast - dune scrub & woodland		D - Prefers dry, well drained soils & tolerates dryness once established.		W - Prefers or tolerates moist soils, wetness, periodic inundation		A - Adaptable, growing well in most soil types		High = tolerates well without damage.		complete range		Fair = can tolerate medium levels		acid to neutral		Moderate = tolerates somewhat with some effects in low levels		acid Low = suffers serious damage to death if exposed		Unknown		Please contact your local nursery or a horticultural professional for further advice.		All indigenous plants provide habitat & food for local birds, insects & animals.	
BOTANICAL NAME		COMMON NAME		Mat. HEIGHT		Mat. SPREAD		EVC= Ecological Vegetation Class		Tolerances										pH Range		Flowering period		Flower colours		Habitat		Uses/Traits																	
<i>Billardiera mutabilis</i> (syn. <i>B. scandens</i> )	Common Appleberry	1	1	Moderate	719, 3	FS	Moderate	Moderate	Moderate	Fair	Moderate	Unknown	Acid	Mar-Dec.	Green, White, Yellow	HD	A, Bird attracting																												
<i>Cassytha glabella</i> (W)	Slender Dodder-laurel	Climber	indefinite	Moderate to Fast	892	FS-PS	Moderate	Moderate	Low	High	Moderate	Moderate	Unknown	Aug-Nov.	Creamy white/cream	HDMA	Parasitic, feeding off other plants, R, climber																												
<i>Clematis microphylla</i> var. <i>microphylla</i>	Small-leaved Clematis	5	5	Moderate to Fast	919, 921	PS-FS	Fair	Fair	Fair	Fair	Low	Unknown	acid to neutral	Aug-Oct.	White	HCA	Winter aesthetic, interesting foliage, screening																												
<i>Comesperma volubile</i>	Love Creeper	Climber	indefinite	Slow	719, 3	SP-FS	Moderate	Moderate	Moderate	Moderate	Moderate	Unknown	Acid	Aug-Dec.	Blue & Purple	HCDW	A, Contrainner																												
<i>Galium australe</i>	Tangled Bedstraw	Climber	indefinite	Fast	919, 921	PS-FS	High	Moderate	High	High	Low	Moderate	Unknown	Sep-May.	White	HCD	Scrambler, trailing groundcover																												
<i>Hardenburgia violacea</i>	Purple Coral Pea	Climber	indefinite	Fast	n/a	PS-FS	High	Moderate	High	High	Moderate	Moderate	Unknown	Jul-Sep.	pink or white	HDG	Scrambler, Will not negatively impact plants it climbs, pruning required after flowering																												
<i>Muehlenbeckia adpressa</i>	Climbing Lignum	Climber	indefinite	Fast	n/a	PS-FS	High	Moderate	High	High	Moderate	Moderate	Complete	Dec-Mar	Greenish white	HCDSh	plant as groundcover, house plant, potplant, can become invasive, pruning required																												
<i>Aphanopetalum resinosum</i>	Gum vine	Climber	3m x 3m	Fast	n/a	FSh	Low	Low	Low	High	Moderate	Moderate	Low	Id Acid-Mild Alkali	Sep	Greenish yellow	MW	LM,Sh, attractive climber for shady positions, attracts native birds and insect																											
<i>Hardenbergia comptoniana</i>	Native Wisteria	Climber	indefinite	Fast	n/a	PS-FS	High	Moderate	High	High	Moderate	Moderate	Unknown	Jul-Sep.	pink or white	HDG	Scrambler, Will not negatively impact plants it climbs, pruning required after flowering																												
<i>Hibbertia scandens</i>	Golden guinea flower	Climber	indefinite	Fast	n/a	FS	High	Low	High	High	High	Low	acid to neutral	Aug-Dec.	Yellow	CDA	R,LM, attracts solitary native bees																												
<i>Pandorea pandarana</i>	Wonga wonga vine	Climber	indefinite	Fast	n/a	FS	Low	Low	Low	High	Low	Moderate	acid to neutral	Sep-May.	White, crea, yellow, gold, purple	WA	LM, attracts bees and birds, vigorous climber with attractive scented flowers.																												
<i>Trachelospermum jasminoides</i>	Chinese star jasmine	Climber	indefinite	Fast	n/a	FS-PS	Moderate	Low	Low	Moderate	Low	Low	acid to neutral	Sep-May.	White	D,W,A	LM, Highly scented flowers, Attracts bees and butterflies.																												

# Glossary

**Biodiversity:** 'All components of the living world: the number and variety of plants, animals, and other living things (including fungi and micro-organisms) across our land, rivers, coast, and ocean. It includes the diversity of their genetic information, the habitats and ecosystems within which they live, and their connections with other life forms and the natural world'.<sup>7</sup>

**Canopy cover** is the layer formed by the branches and crowns of plants or trees. The cover can be continuous, as in primary forests, or discontinuous - with gaps as in an urban area. Canopy is defined in Living Melbourne as vegetation above three metres in height.<sup>8</sup>

**Canopy tree:** A tree which has, or at maturity is likely to have, sufficient height and canopy characteristics to make a positive contribution to local amenity, sense of place, micro climate and/or biodiversity. Minimum 8 x 4 metres.<sup>9</sup>

**Climate change** refers to a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer.<sup>10</sup>

**Climate change adaptation** is the process of adjustment to actual or expected climate and its effects.<sup>11</sup>

**Climate change mitigation** is the human intervention to reduce the sources or enhance the sinks of greenhouse gases.<sup>11</sup>

**Climate Emergency** refers to the catastrophic changes to the climate brought about by human activity that poses a dangerous threat to all life on the planet.<sup>11</sup>

**Environmentally Sustainable Development** refers to development that is designed, constructed, and managed to optimise climate resilience, energy efficiency, integrated water management, indoor environment quality, the circular economy, low carbon transport and urban ecology.<sup>12</sup>

**General Residential Zone (GRZ)** is applied to land in areas where growth and housing diversity is anticipated. It is expected that the type of housing provided will evolve over time to provide more diverse forms of housing, but not at the expense of existing open garden character.<sup>13</sup>

**Greenways** are a form of landscape planning. They are linear open space corridors in the built or natural environment, which preserve biodiversity or other aspects of a sustainable environment, and generally engage the community in recreational use.<sup>14</sup>

**Habitat:** All the physical and biological things that collectively make up the place where a plant or animal lives.<sup>15</sup>

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<sup>7</sup> The State of Victoria Department of Environment, Land, Water and Planning, 'Protecting Victoria's Environment – Biodiversity 2037', 2017, Available at <https://www.environment.vic.gov.au/biodiversity/biodiversity-plan>

<sup>8</sup> CID Bio-Science, 'Forest and Plant Canopy Analysis – Tools and Methods', 2019, Available at <https://cid-inc.com/blog/forest-plant-canopy-analysis-tools-methods/>

<sup>9</sup> Bayside City Council, 'Local Law Guidelines, Neighbourhood Amenity Local Law 2021', 2021, Available at <https://www.bayside.vic.gov.au/sites/default/files/2022-05/Neighbourhood%20Amenity%20Local%20Law%202021%20Guidelines%20-%20Final.pdf>

<sup>10</sup> Definition has been sourced from 'Bayside's Climate Emergency Action Plan 2020-2025 – Glossary', 2019, Available at [https://www.bayside.vic.gov.au/sites/default/files/sustainability\\_and\\_environment/climate\\_emergency\\_action\\_plan\\_v1.2\\_1\\_40920\\_for\\_web.pdf](https://www.bayside.vic.gov.au/sites/default/files/sustainability_and_environment/climate_emergency_action_plan_v1.2_1_40920_for_web.pdf)

<sup>11</sup> Department of Health and Human Services, 'Arboricultural Assessment Holland Court, Flemington– 3.7 Useful Life Expectancy(ULE)', 2017, available at [https://www.planning.vic.gov.au/\\_data/assets/pdf\\_file/0011/105500/SHRP-SH1-15.a.-Tree-Logic-Rpt\\_Holland-Court,-Flemington.pdf](https://www.planning.vic.gov.au/_data/assets/pdf_file/0011/105500/SHRP-SH1-15.a.-Tree-Logic-Rpt_Holland-Court,-Flemington.pdf)

<sup>12</sup> Bayside Sustainable Building and Infrastructure Policy (updated 2021)

<sup>13</sup> Victorian Planning Authority, 'Reformed Residential Zones – General Residential Zone', 2017, Available at [https://www.planning.vic.gov.au/\\_data/assets/pdf\\_file/0023/103865/General-Residential-Zone.pdf](https://www.planning.vic.gov.au/_data/assets/pdf_file/0023/103865/General-Residential-Zone.pdf)

<sup>14</sup> University of New South Wales, 'The future of greenways in Sydney,' by P. Crawshaw, 2009, available at: [https://www.be.unsw.edu.au/sites/default/files/upload/pdf/schools\\_and\\_engagement/resources/notes/5A2\\_41.pdf](https://www.be.unsw.edu.au/sites/default/files/upload/pdf/schools_and_engagement/resources/notes/5A2_41.pdf)

<sup>15</sup> Resilient Melbourne and The Nature Conservancy, 'Living Melbourne – Our metropolitan Urban Forest', 2019, Available at [https://resilientmelbourne.com.au/wp-content/uploads/2019/05/LivingMelbourne\\_Strategy\\_online.pdf](https://resilientmelbourne.com.au/wp-content/uploads/2019/05/LivingMelbourne_Strategy_online.pdf)

**Habitat Corridor:** A habitat corridor is a linear two-dimensional landscape element that differs from the surrounding vegetation, in both vegetation structure and form, and connects two or more patches, of otherwise isolated, habitat that have been connected in historical time, this is meant to function as a conduit for both plants and animals.<sup>16</sup>

**Heat Vulnerability Index:** The heat vulnerability index (HVI) is represented by a scale of 1 to 5 based on quintiles, with 1 representing low exposure, low sensitivity, or high adaptive capacity and 5 representing high exposure, high sensitivity or low adaptive capacity. We integrated indicators of heat vulnerability to calculate a Heat Vulnerability Index (HVI) at SA1 level. The index consists of three component layers: heat exposure, sensitivity to heat, and adaptive capability. Integration was accomplished by summing the scores from the three vulnerability components, dividing the SA1s into quintiles, and attributing SA1s with a Heat Vulnerability Rating scaled from 1 to 5.<sup>17</sup>

**Neighbourhood Residential Zone (NRZ)** is applied to land that has been identified as having specific neighbourhood, heritage, environmental or landscape character values that distinguish the land from other parts of the municipality or surrounding area.<sup>18</sup>

**Permeability:** The readiness with which a surface, whether man-made (such as a paved road) or natural (such as soil or rock) allows water, air or plant roots to penetrate or pass through.<sup>19</sup>

**Residential Growth Zone (RGZ)** is considered a substantial change area where medium density housing growth and diversity of housing types is encouraged for example town houses and apartments around activity centres and close to train stations.<sup>20</sup>

**Resilience:** The capacity of individuals, institutions, businesses and systems within a city to adapt, survive and thrive no matter what kind of chronic stresses and acute shocks they experience.<sup>11</sup>

**SEIFA:** Socio-Economic Indexes for Areas (SEIFA) measures the relative level of socio-economic disadvantage and/or advantage based on a range of Census characteristics.<sup>21</sup>

**Senescence** is the process by which cells irreversibly stop dividing and enter a state of permanent growth arrest without undergoing cell death.<sup>22</sup>

**Significant Landscape Overlay (SLO):** The Significant Landscape Overlay (SLO) is a planning overlay and tool for protecting and managing significant landscapes. Its purpose is to identify significant landscapes, and conserve and enhance their character. The SLO can require a permit to construct a building or construct or carry out works, construct a fence, and remove, destroy or lop any vegetation.<sup>23</sup>

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<sup>16</sup> Definition as used in 'Corridors for Habitat and Biodiversity Conservation in the Act with Links to the Region' from 'The theory of wildlife corridor capability – in Nature Conservation 2: The role of corridors', 1991 by Soulé, M. E. and M. E. Gilpin, Available at

[https://www.parliament.act.gov.au/\\_data/assets/pdf\\_file/0008/381077/PE\\_06\\_Environment\\_attach.pdf](https://www.parliament.act.gov.au/_data/assets/pdf_file/0008/381077/PE_06_Environment_attach.pdf)

<sup>17</sup> Department of Environment, Land, Water and Planning, Victorian Government 'Urban Vegetation, Urban Heat Islands and Heat Vulnerability Assessment in Melbourne, 2018', Available at

[https://www.planning.vic.gov.au/\\_data/assets/pdf\\_file/0018/440181/UHI-and-HVI2018\\_Report\\_v1.pdf](https://www.planning.vic.gov.au/_data/assets/pdf_file/0018/440181/UHI-and-HVI2018_Report_v1.pdf)

<sup>18</sup> Victorian Planning Authority, 'Using the residential zones – Planning Practice Note 91, Clause 32.09', 2019, Available at [https://www.planning.vic.gov.au/\\_data/assets/pdf\\_file/0033/445389/PPN91-Using-the-residential-zones.pdf](https://www.planning.vic.gov.au/_data/assets/pdf_file/0033/445389/PPN91-Using-the-residential-zones.pdf)

<sup>19</sup> DELWP, 'Land for Wildlife' available at: <https://www.wildlife.vic.gov.au/protecting-wildlife/land-for-wildlife>

<sup>20</sup> Victorian Planning Authority website, 'Frequently Asked Questions – What is a Residential Growth Zone (RGZ)', 2017, Available at <https://vpa.vic.gov.au/faq/berwick-residential-growth-zone-rqz/>

<sup>21</sup> Id community, 'Demographic Resources', Available at <https://profile.id.com.au/bayside/seifa-disadvantage-small-area?WebID=10>

<sup>22</sup> CSIRO Linked Data Registry, 'Definition of Senescence', Available at <http://registry.it.csiro.au/def/keyword/nature/subjects/senescence>

<sup>23</sup> Victorian Planning Authority, 'DPCD South West Victoria Landscape Assessment Study – Regional Overview Report', 2013, Available at [https://www.planning.vic.gov.au/\\_data/assets/pdf\\_file/0023/94820/ROR-Chapter-5-Implementation-Part-2.pdf](https://www.planning.vic.gov.au/_data/assets/pdf_file/0023/94820/ROR-Chapter-5-Implementation-Part-2.pdf)

**Significant Tree:** Some trees, through age, size, and rarity of planting or association with historical events achieve a higher level of importance on private or public land. Identifies the following the categories used to define significant trees as scientific, social, historic, and aesthetic.<sup>24</sup>

**Tree Canopy:** The uppermost trees or branches of trees in a forest, forming an almost continuous layer of foliage. The topmost layer of bioactivity in a forest setting.<sup>4</sup>

**Urban Forest** encompasses all of the Trees, Shrubs and Grasslands – and the Soil and Water that support them. An Urban Forest incorporates vegetation in streets, parks, gardens, plazas, campuses, river and creek embankments, coastal foreshores, wetlands, railway corridors, community gardens, green walls, balconies, and roofs.<sup>4</sup>

**Urban Heat Island Effect:** The phenomenon of dense urban areas having significantly warmer air and land surface temperatures than surrounding areas.<sup>4</sup>

**Useful Life Expectancy (ULE):** Assessment of useful life expectancy provides an indication of health and tree appropriateness and involves an estimate of how long a tree is likely to remain in the landscape based on species, stage of life (cycle), health, amenity, environmental services contribution, conflicts with adjacent infrastructure and risk to the community. It is not a measure of the biological life of the tree within the natural range of the species. It is more a measure of the health status and the tree's positive contribution to the urban landscape.<sup>2</sup>

**Vegetation Protection Overlay (VPO):** The VPO focuses on the protection of significant vegetation, including native and introduced vegetation in urban environments. The overlay can be applied to individual trees, groups of trees or areas of significant vegetation. It requires a landowner to obtain a permit to remove, destroy or lop any vegetation specified in a schedule to the overlay subject to a list of exemptions. Some of those exemptions apply to particular types of vegetation and others apply to specific situations, for example, to clear vegetation from electricity lines and to ensure emergency access.<sup>25</sup>

**Vulnerability:** Exposure to contingencies and stress, and the difficulty in coping with them. This can apply to ecosystems, trees, people, and places.<sup>26</sup>

**Water Sensitive Urban Design (WSUD)** is a more sustainable approach to urban planning and design to make use of stormwater and reduce the harm it causes to our natural waterways.<sup>27</sup>

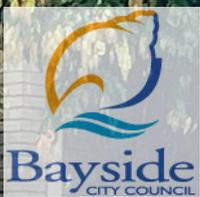
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<sup>24</sup> Bayside City Council, 'Significant Tree Management Policy 2020', 2020, Available at [https://www.bayside.vic.gov.au/sites/default/files/trees\\_parks\\_and\\_beaches/significant\\_tree\\_management\\_policy\\_2020.pdf](https://www.bayside.vic.gov.au/sites/default/files/trees_parks_and_beaches/significant_tree_management_policy_2020.pdf)

<sup>25</sup> Victorian Law Reform Commission, '4. Planning law and regulation affecting trees on private land - Vegetation Protection Overlay, Available at <https://lawreform.vic.gov.au/content/introduction-34>

<sup>26</sup> GreenFacts, 'Vulnerability (in ecosystems), available at: <https://www.greenfacts.org/glossary/tuv/vulnerability-ecosystems.htm>

<sup>27</sup> Melbourne Water, 'Introduction to WSUD', available at: <https://www.melbournewater.com.au/building-and-works/stormwater-management/introduction-wsud>



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