



DRAFT Brighton East Urban Forest Precinct Plan 2023





Cover page: Little Brighton Reserve

Inside Cover Page: Landcox Park



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.¹ 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.²



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.

² Resilient Melbourne, *Living Melbourne Strategy*, 2018, available at: 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.

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.

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What will the Precinct Plans achieve?

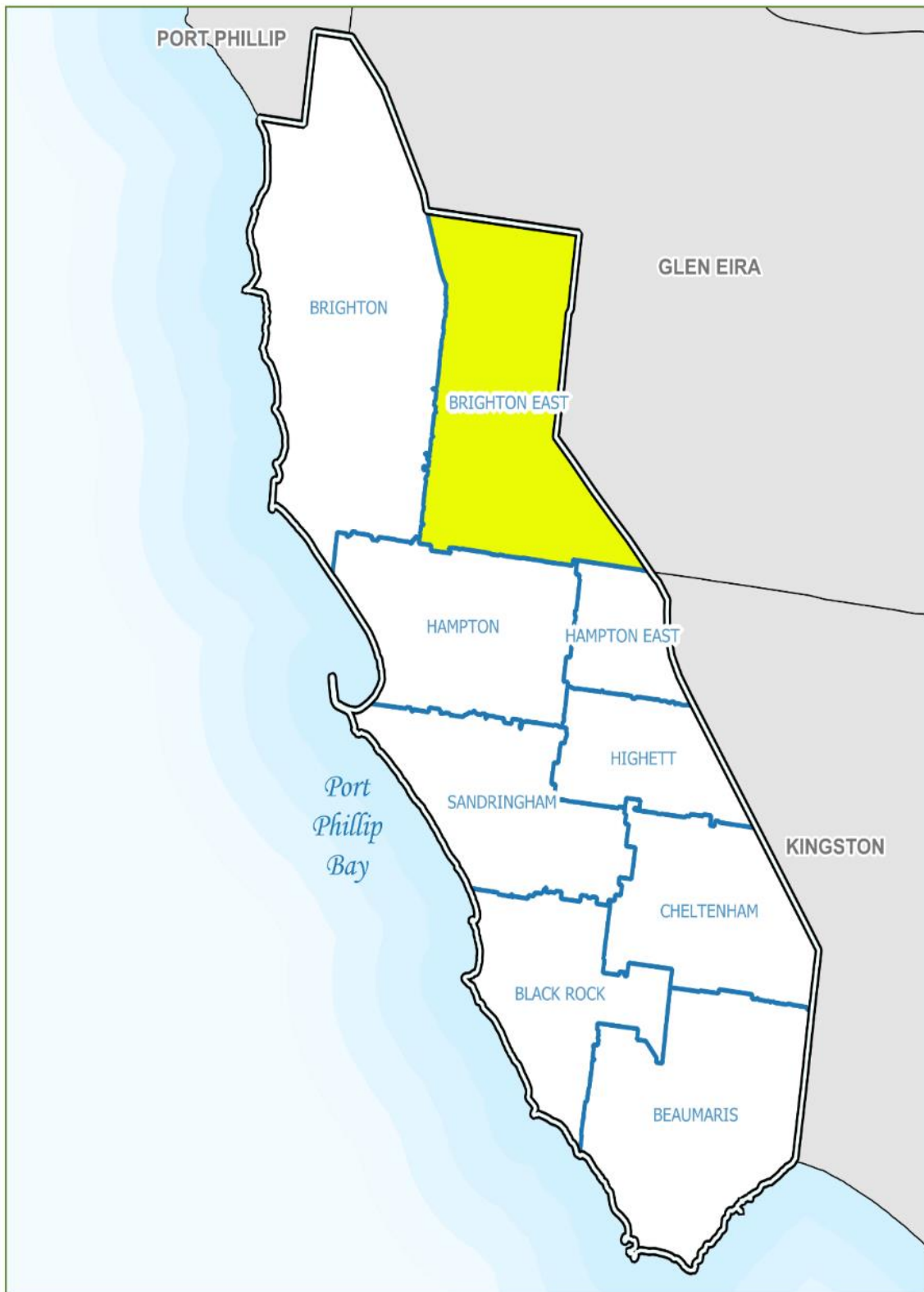
A key action from the Bayside *Urban Forest Strategy* is the preparation of Precinct Plans. Each Precinct Plan will be informed by community consultation and will provide set targets to respond to the individual needs, challenges, and aspirations of the locality.

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 Brighton East.

Map 1: Brighton East's location within Bayside



 <p>Bayside CITY COUNCIL</p>	<p>Legend</p> <ul style="list-style-type: none"> Suburbs Bayside LGA Boundary 	<div style="text-align: center;">  <p>N</p>  <p>0 0.5 1 1.5 km</p> <p>GDA 2020 MGA Zone 55</p> </div>	<p><small>Disclaimer: Copyright 2022. All rights reserved. This material may be used for assistance to you, but the State of Victoria and Bayside City Council do not guarantee that the information is without error of any kind or is reliable, accurate, for your particular purposes and therefore disclaims all liability for any error, loss or consequences, which may arise from your reliance on any information contained in this material.</small></p> <p><small>Created by Bayside City Council 12 November 2022</small></p>
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Suburb Profile – Brighton East

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 and households

Brighton East is experiencing a steady population growth, having increased by 954 people from 15,513 in 2016 to 16,444 in 2021. The population is forecasted to continue to increase very steadily to 16,580 people (0.69% increase) by 2041. In 2021 the most dominant household type in Brighton East was 'couples with children' which accounted for 35.2% of households.

Age structure

In 2021, the most dominant age service group was 'parents and homebuilders' (19.4%) and is forecasted to continue being the most dominant age group over the next 20 years. By 2041, it is also anticipated that 36.5% of Brighton East residents will be above 60 years of age, which is an increase from current 26.3% (2021). It is expected that older populations will have greater difficulty maintaining gardens and are susceptible to environmental challenges, such as heatwaves and increasing temperatures. As the population ages, the need for greater housing options becomes more prevalent, particularly for lone person households. It is important that housing now and in the future is adaptable for all ages and abilities.

Residential developments

Residential growth within Brighton East is relatively slow. It is forecasted that the number of dwellings in Brighton East will increase by an average of 32 dwellings per annum to 7,006 in 2041. In Brighton East, there is a higher percentage of detached dwellings (70%) in comparison to Bayside (60%) which is likely due to much of the suburb being within in the Neighbourhood Residential Zone, where less intensive dwelling forms are accommodated. Detached dwellings generally allow for greater tree and vegetation cover as they usually occupy less space. As time goes on, there is likelihood of multi-dwelling units will increase within areas appropriate for residential densification, providing for more diverse housing options within the suburb.

While there is no significantly large major activity centre within Brighton East, it is within close proximity to the Martin Street Neighbourhood Activity Centre and the Bay Street Major Activity Centre. Within the suburb, there are several small commercial activity centres:

- Nepean Highway and Centre Road Centre
- Nepean Highway and Milroy Street Centre
- Nepean Highway and Union Street Centre

These activity centres are within close proximity to the recreational reserves and parks within the suburb, specifically Hurlingham Park, Ovals and Tennis Courts and Landcox Park and Playground. The suburb also encompasses the Brighton Golf Course, Dendy Park and recreational courts and ovals as well as the Little Brighton Reserve and playground.

Climate change

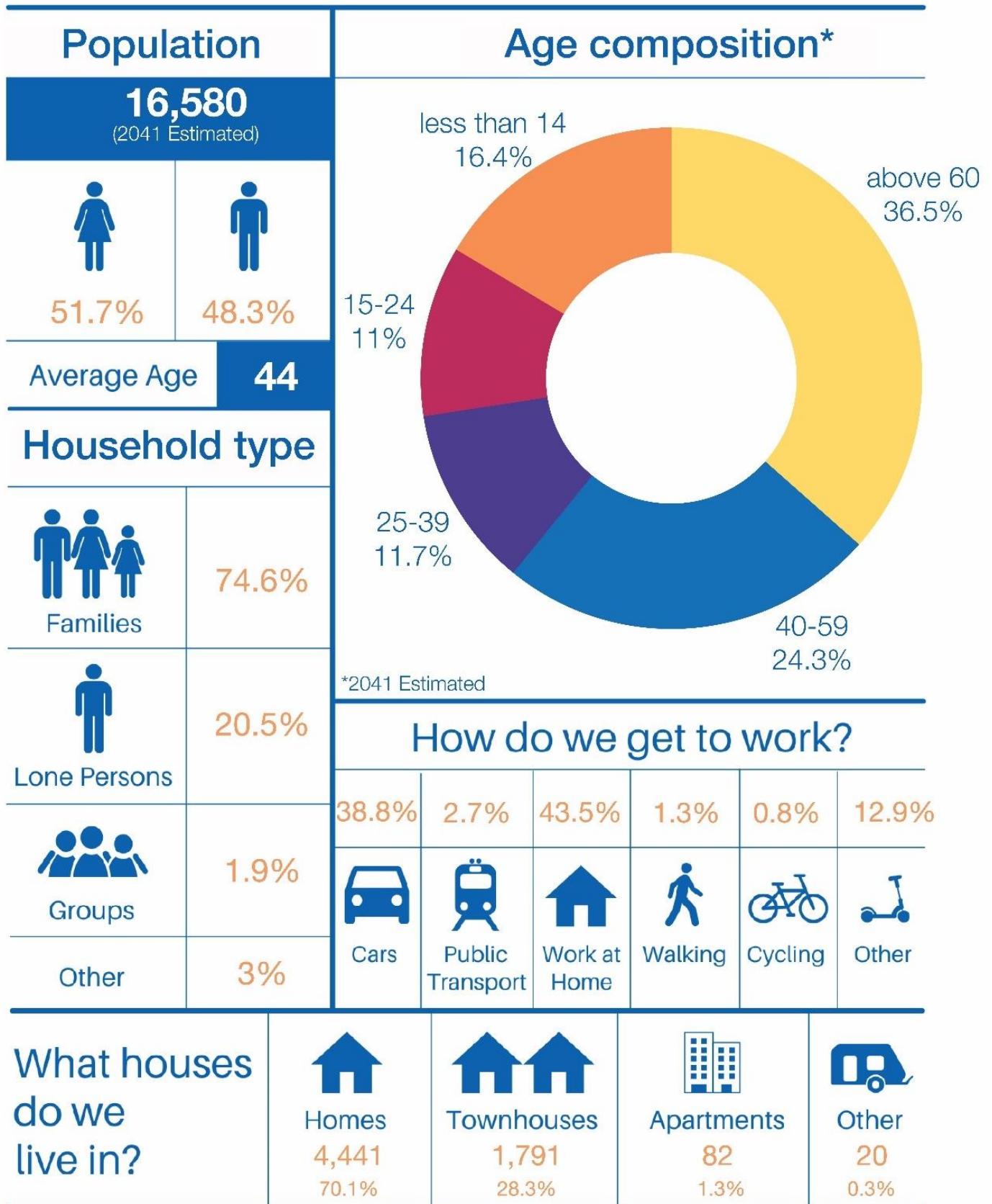
The effects of climate change are anticipated to significantly impact tree canopy and vegetation. Due to climate change, there will be an increase in severe weather events including more intense rainfall over summer, leading to more frequent and severe flooding events. Trees can play an important role 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 2021, 38.8% of Brighton East residents travelled to work by car compared to 49.7% in Greater Melbourne. Notably, there is no train station within the suburb, with the closest stations being North Brighton (1.65km) and Patterson (2km). Albeit there is a tram route down Hawthorn Road which continues north and intersects with Glen Eira Road and Princess Highway.

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Brighton East Forecast for 2041





Note: Brighton East suburb population and age data is a 2023 estimation for 2041, which was retrieved from the Australian Bureau of Statistics. All other data shown was retrieved from profile.id (2021).

Brighton East Forecast for 2041



Legend

-  Bayside LGA Boundary
-  Suburb

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14 December 2022

The vision for Brighton East's urban forest:

Brighton East will embrace the suburbs diversity of tree and plant species and create an urban forest for the community to enjoy. The urban forest will highlight the beauty of the extensive park network and tree-lined streetscapes.

Planning controls applying to Brighton East

Residential and Commercial Zones

The majority of Brighton East's residential land is zoned as Neighbourhood Residential Zone (NRZ), which is a planning zone that is applied to areas where there will be minimal residential growth. The NRZ has a maximum building height of two-storeys and where any new development does take place, it is usually alterations or additions to existing dwellings or the construction of a new detached dwelling or dual occupancy in place of the original detached dwelling.

Residential development across the suburb is mostly of low density and in the form of detached dwellings and dual occupancies.

Public Park and Recreation Zone

There is a significant portion of land within Brighton East within Public Park and Recreation Zone (PPRZ). The purpose of the PPRZ is to recognise areas for public recreation and open space and to protect and conserve these areas. Brighton East's open spaces and reserves are highly valued by the local and broader community and are a significant feature within the suburb.

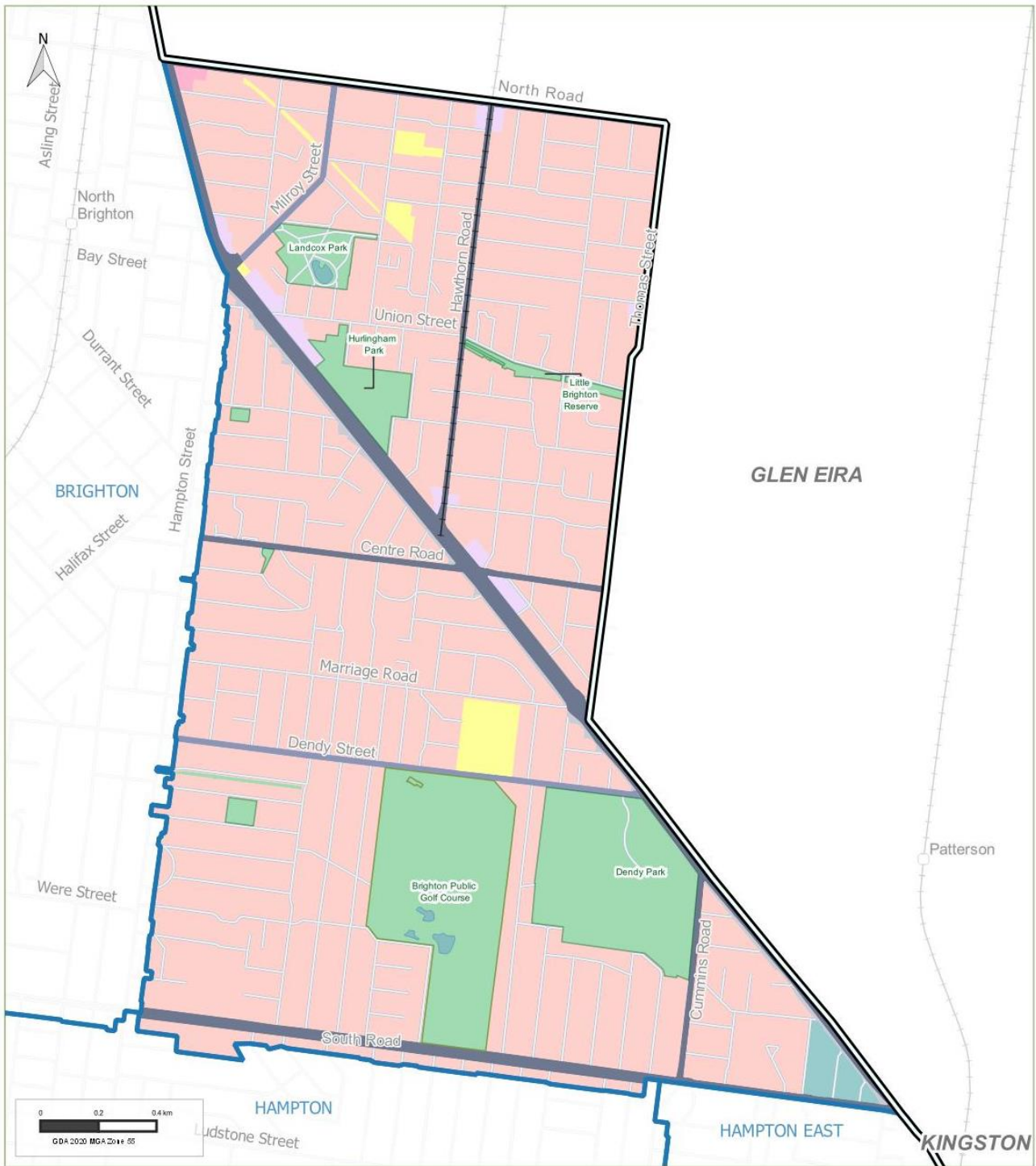
Heritage and Built Form Overlays

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. The *Neighbourhood Amenity Local Law 2021* applies to the Bayside municipality, including 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.

Map 2: Planning Zone Controls in Brighton East



Legend

Planning Zones

- ACZ - Activity Centre Zone
- C1Z - Commercial 1 Zone
- GRZ - General Residential Zone
- NRZ - Neighbourhood Residential Zone
- PPRZ - Public Park and Recreation Zone
- PUZ - Public Use Zone
- TRZ1 - Transport Zone 1 - State Transport Infrastructure
- TRZ2 - Transport Zone 2 - Principal Road Network
- TRZ3 - Transport Zone 3 - Significant Municipal Road

- Bay side LGA Boundary
- Suburb
- Railway
- Roads

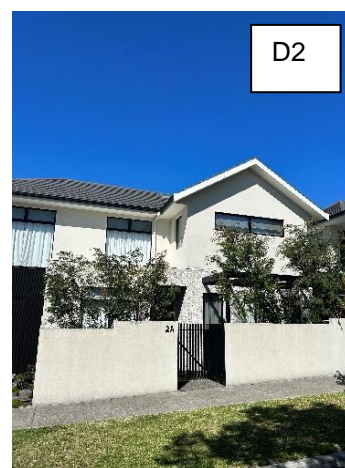
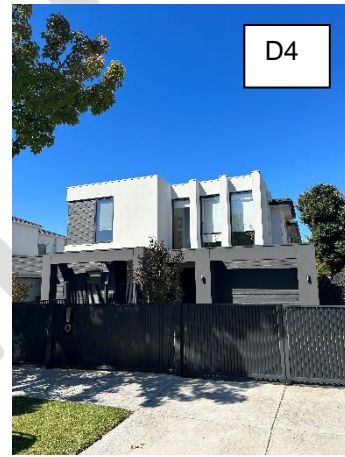
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 30 December 2022

Brighton East Neighbourhood Character

Brighton East features an array of architectural styles, large parks, and reserves, and 'village' style commercial areas, while also encouraging large floor space commercial buildings along Nepean Highway. As land uses and architectural styles are varying, it is important that new development respects, supports and enhances the cherished characteristics of the surrounding neighbourhood. Clause 15.01-5L 'Bayside preferred neighbourhood character' in the Bayside Planning Scheme provides general objectives and policy guidelines for neighbourhood character precincts that have been set across the municipality.







With regard to housing styles within the suburb, there is a mix of dwellings built in the late 1800s and early 1900s, Inter-war (Californian Bungalows), post-war modern and art deco dwellings, as well as infill from the 1980s and 90s and more recent contemporary development. Original dwellings are single-storey dwellings and new developments generally built as double-storey homes or dual occupancies. Front setbacks vary from 5 - 8m across the area and side setbacks are between 1 - 1.5m on one side with garages and driveways to the boundary on the other. Gardens are characterised by established, mostly exotic plantings of small to large sized shrubs with occasional medium to tall canopy trees.



Map 3: Brighton East 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 Brighton East

In Brighton East, there is approximately 16.5% of tree canopy cover and 15.85% of understorey cover (2019). The suburb is home to a large and expansive urban forest, encompassing a distinct character of native and exotic trees and understorey planting, contributing to a highly biodiverse environment. Together with established gardens, tree-lined streetscapes with exotic and native species and distinctive parks and reserves, Brighton East has a unique urban forest character.

History

Before European settlement, Brighton East was inhabited by the Bunurong peoples of the Kulin Nation. In 1843, a group of farmers settled east of Dendy's village; they called this area 'Little Brighton'. By the 1880s, Brighton East was filled predominately with market gardens and farms, with some housing starting to be built within the area.

In 1925, the tram line from Glen Huntly to North Road was extended to Hawthorn Road, in response to subdivisional activity occurring between North and Centre Roads. Between 1922 and 1928, the land in Brighton East had been further subdivided for housing, with substantial residential and commercial development occurring in the suburb. The suburbs' street pattern had been established by the late 1930s. In 1943, the Council established a public golf course and Dendy Park which included several ovals and sport facilities.

By 1999, street trees formed a dominant component of the vegetation character and were mostly exotic species. Private gardens contributed minimally to the streetscape and there was limited use of native vegetation in private space.³

There are now a number of trees and vegetation that have been identified for their local heritage significance. In Brighton East, these include large canopy trees at Landcox Park including *Canary island pines*, *Maritime pines*, *Moreton bay figs*, *Monterey cypress* and *Eucalyptus*. There are also several significant trees at Union Street Reserve (*Sugar gums*, *Paperbarks*, *Peppercorn tree*, *Photinia* and *Eucalyptus*).

Contemporary issues impacting Brighton East's urban forest

There are a number of contemporary issues impacting the urban forest of Brighton East and providing cause to the decrease in canopy cover. Issues associated with climate change, and its flow on effects, such as the urban heat island effect and erratic weather events, are impacting and damaging the health and viability of tree and ground cover vegetation. Increasing tree and vegetation cover will help alleviate rising temperatures and dramatic changes in climatic conditions by providing shade and cooling effects.

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.

The removal of established gardens, large trees and understorey plantings is contributing to a loss of the distinct vegetation character and impacting the biodiversity. 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 strength as is more prone to falling or losing limbs. Council monitors the health of its trees to ensure any hazardous trees

³ Bayside City Council, 'Vegetation Character Assessment – City of Bayside' by John Patrick Landscape Architects Pty Ltd, 1999.

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. A common example is the vandalism of trees due to the build up of leaf debris upon or near private property. Unpermitted removal, destruction, pruning and interference with trees and vegetation is illegal in Bayside. In an effort 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.

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Image 1: Plantation Avenue

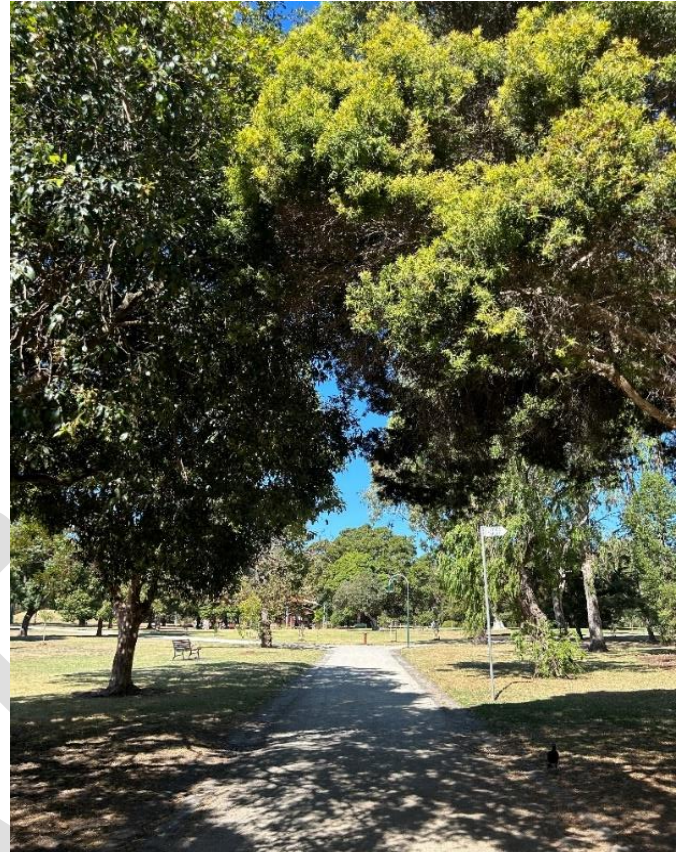


Image 2: Landcox Park



Image 3: Lucas Street Reserve

Tree canopy cover across Brighton East and various land uses

As indicated previously in this document, Brighton East has approximately 16.5% tree canopy and 15.85% understorey cover (2019). Of the 16.5% of tree canopy cover within Brighton East:

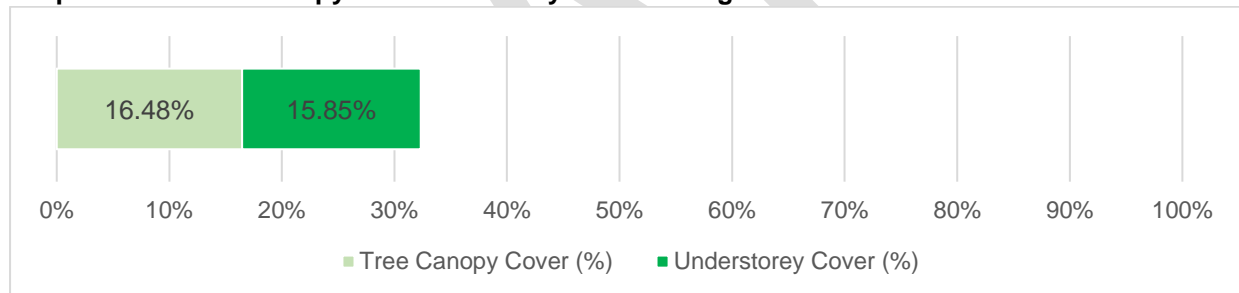
- 54.3% is located upon private residential and mixed-use areas;
- 26.59% is located upon streets;
- 16.68% is located upon open spaces and reserves;
- 2.05% is located upon public use areas;
- 0.31% is located upon 'other' areas.

The amount of trees upon private residential property and streets is quite significant, particular in comparison to other suburbs. There appears to be less tree canopy coverage on open spaces which is likely due to the designated recreational uses of open spaces, which many sporting ovals present and notably the greens of the golf course which require the clearing of trees. It is these areas, alongside all land within the Commercial Zone 1 that has significantly limited canopy cover.

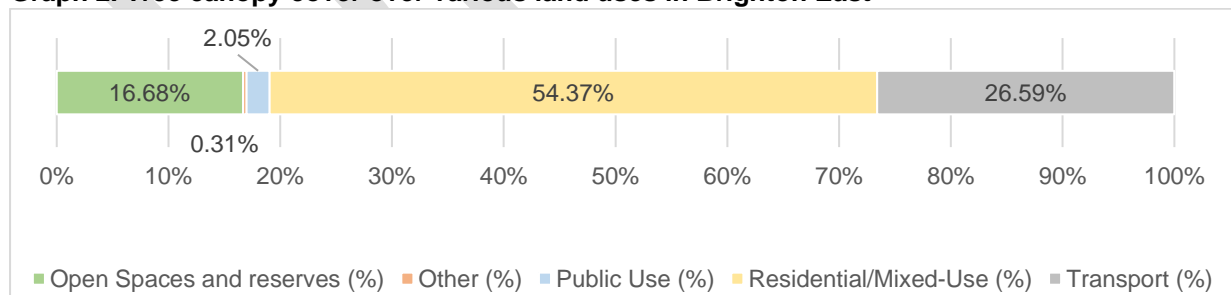
In 2022, there were 12,499 trees managed and maintained by Council throughout Brighton East, with over 8,269 street trees, 4,215 park trees and 15 other location-specific trees. Monitoring the health and growth patterns of these trees is important to ensuring that Council understands how local conditions affect tree and understorey plant populations, and to effectively plan for future planting programs and strategies across Brighton East.

In Brighton East, there is approximately 16.5% tree canopy cover and 15.85% understorey cover. The suburb of Brighton East will be a major contributor towards achieving Council's goal of 30% tree canopy cover by 2040 and the enhancement of understorey cover within the public and private realm.

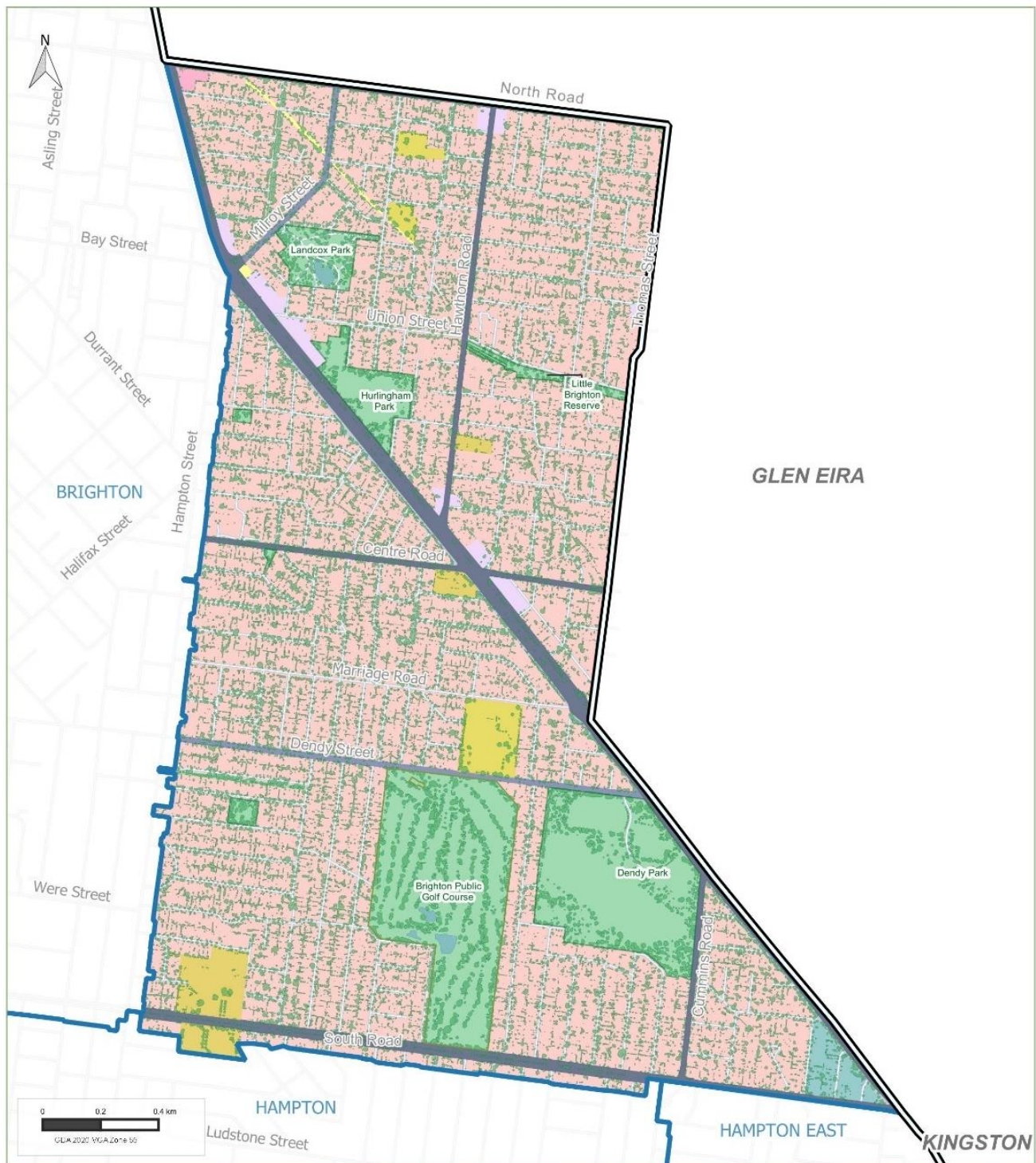
Graph 1. Total tree canopy and understorey cover in Brighton East



Graph 2. Tree canopy cover over various land uses in Brighton East



Map 4: Tree Canopy Cover across Brighton East



Legend			
	Bayside LGA Boundary		ACZ - Activity Centre Zone
	Suburb		C1Z - Commercial 1 Zone
	Tree Canopy - October 2019		GRZ - General Residential Zone
	Education (Government or Independent)		NRZ - Neighbourhood Residential Zone
	Roads		PPRZ - Public Park and Recreation Zone
			PUZ - Public Use Zone
			TRZ1 - Transport Zone 1 - State Transport Infrastructure
			TRZ2 - Transport Zone 2 - Principal Road Network
			TRZ3 - Transport Zone 3 - Significant Municipal Road

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12 January 2023

Council-managed Tree Population

Useful life expectancy (ULE)

Estimating the useful life expectancy of the council-managed tree population is regularly undertaken and informs the future management options for trees that have limited useful life due to their age and/or health. The assessment of a tree's 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.⁴ 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.⁴

There are approximately 9% of council-managed trees that may not survive in Brighton East after the next 10 years. By 2040, a total of 11,818 (87%) council-managed trees will have reached the end of their useful life expectancy and may need to be replaced.

Where trees reaching the end of their useful life expectancy have been assessed and are no longer providing a benefit to the surrounding habitat, removal may be required. Where it has been found that trees reaching the end of their useful life still provide benefit and habitat, it should be retained as habitat tree as per the Tree Risk Assessment Tool (TRAQ).

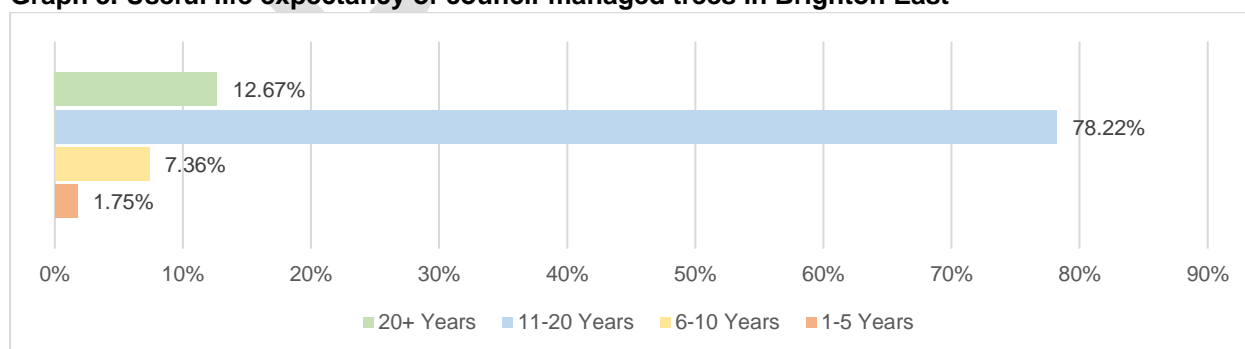
Where replacement of trees is required, new trees should be selected based on the existing surrounding vegetation, landscape character and ability to enhance habitat. Where there is a large concentration of trees required for replacement, this should be undertaken intermittently to enable varying ages and maturity.

The locations where there is a high concentration of trees which may require replacement within the next 10 years include Dendy Street, Centre Road and Nepean Highway. There is also a high concentration of trees that will need to be replaced within Brighton East's public open spaces such as Dendy Park, Hurlingham Park, Landcox Park and Little Brighton Reserve.

In Brighton East, approximately 9% of council-managed trees are not anticipated to survive over 10 years. The map shows the location of trees with low ULE and the locations where the concentration of these trees is high.

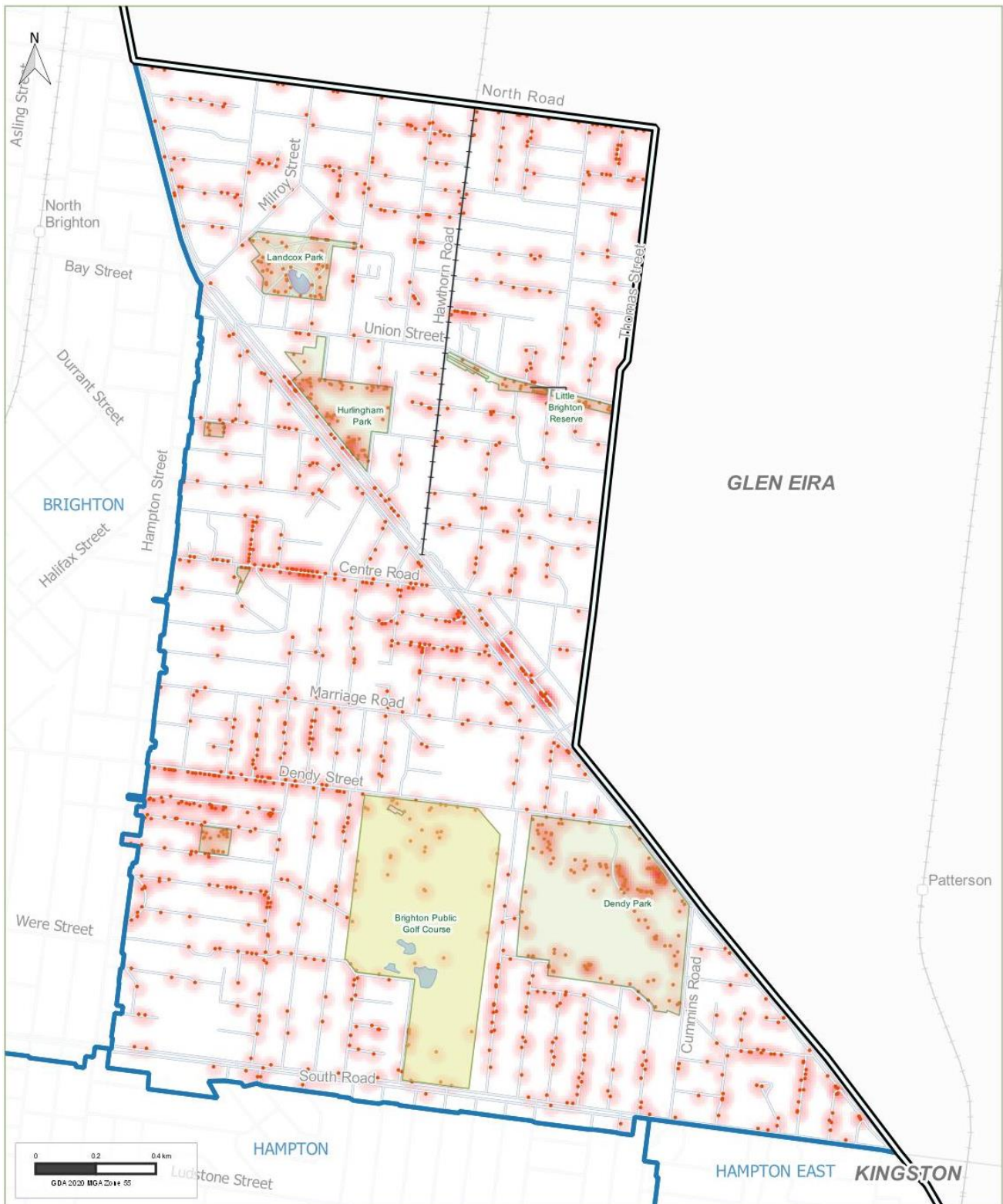
Where it has been found that trees reaching the end of their useful life still provide benefit and habitat, it should be retained as habitat tree as per the Tree Risk Assessment Tool (TRAQ).

Graph 3. Useful life expectancy of council-managed trees in Brighton East



⁴ 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

Map 5: Location of trees with low ULE in Brighton East



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

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29 December 2022

Tree health and age

Approximately 79% of council-managed street and park trees in Brighton East were classified as being in good health, while 3% were classified as excellent. Trees that are classified as poor, dangerous or dead make up for 2% of street and park trees in Brighton East.

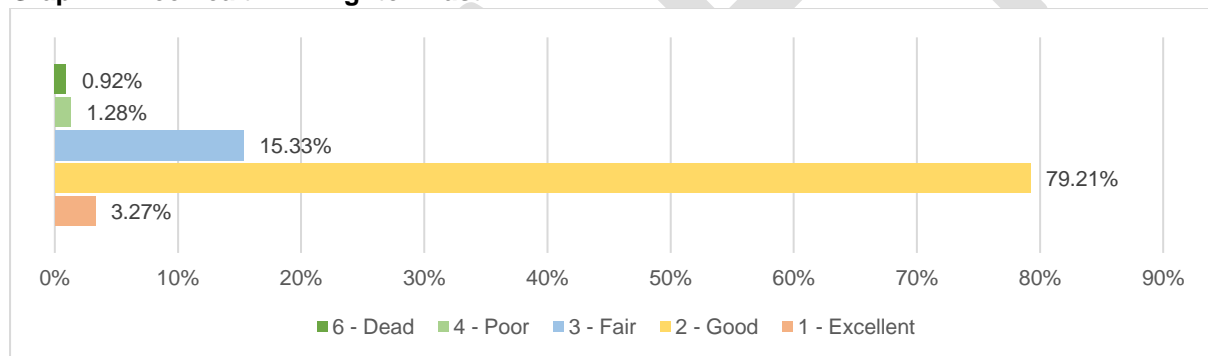
There is a reasonable level of diversity in the age of trees within the suburb. As seen in Graph 5, the highest proportions are semi-mature and new making up 34% and 27% respectively.

Map 6 provides the location of those trees that are in poor health, dangerous or dead. Trees that have been identified as dangerous or dead are mostly located in open spaces such as Dendy Park, Landcox Park, Brighton Public Golf Course and along the Nepean Highway. Street trees that are dead should be removed, but dead trees on the foreshore and parks can provide habitat for fauna. The map shows concentration of dead trees on foreshore which are providing habitat. T Council uses a Tree Risk Assessment Tool to determine which of these trees are providing habitat and which are a hazard to the community. This assessment is what determines whether a tree will be removed.

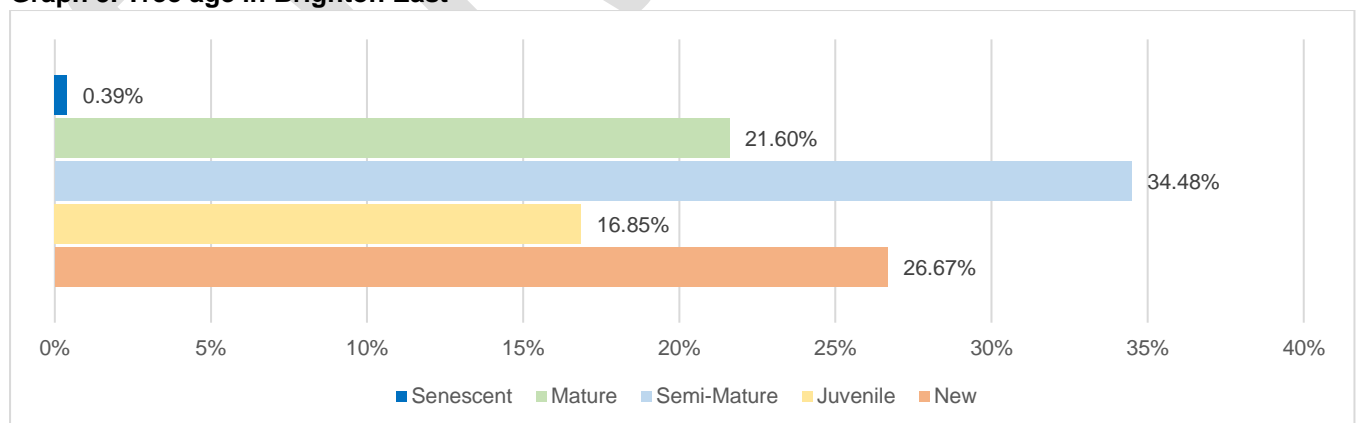
In 2022, 79% of the council-managed street and park trees in Brighton East were classified as being in good health. Trees that are classified as poor, dangerous or dead make up for 2%.

Through the continued use of the Tree Risk Assessment Tool, Council will retain the trees and vegetation that provide a service to the ecosystem.

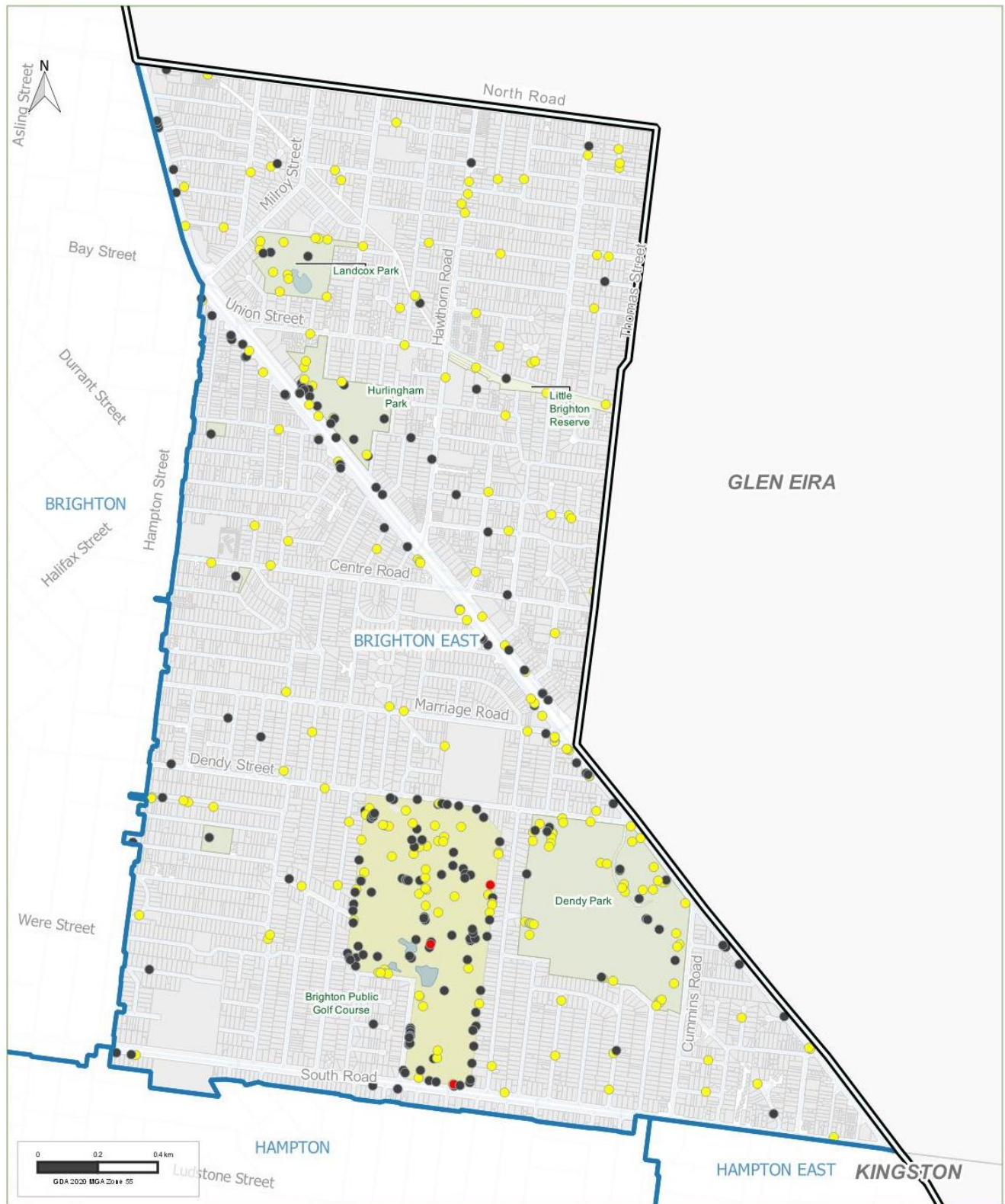
Graph 4. Tree health in Brighton East



Graph 5. Tree age in Brighton East



Map 6: Tree Health in Brighton East



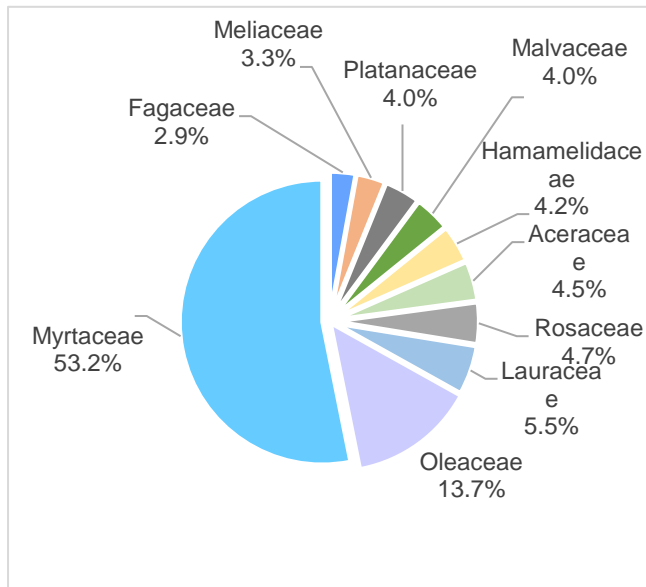
- Legend**
- Tree health
 - Poor
 - Dangerous
 - Dead
 - Bayside LGA Boundary
 - Suburb
 - Property Boundary
 - Council Land
 - Golf Club

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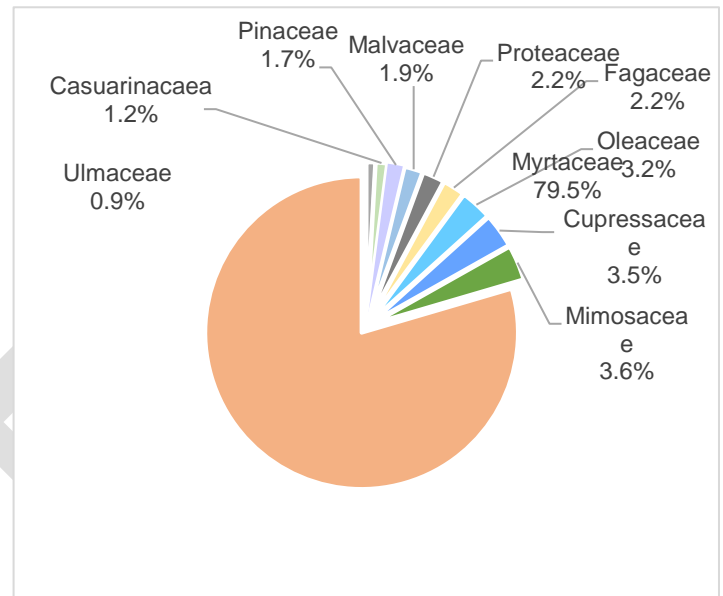
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Species diversity

A resilient urban forest has a diverse range of species from different families. As seen in graph 6 and 7, Council-managed street and park trees are predominantly within the *Myrtaceae* family, making up 53% of all street trees and 80% of all park trees. This is then followed by the *Oleaceae* family (14% of all street trees), and the *Mimosaceae* family (4% of all park trees). Other families making up about 33% of street trees and 16% of park trees.



Graph 6. Diversity of street tree species in Brighton East



Graph 7. Diversity of park tree species in Brighton East

The reliance of 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 inclusion of exotic species within Brighton East allows for a great mix of species and diversity within the suburbs' urban forest. Future plantings in the suburb will reflect the species targets as shown in Appendix 3.

The following families currently form part of the overall tree population in Brighton East'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:

- Ulmaceae
- Casuarinaceae
- Pinaceae
- Fagaceae
- Meliaceae
- Platanaceae

In order to improve species diversity, Bayside City 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, the Brighton East street and park tree population is largely dominated by the *Myrtaceae* family (eucalyptus etc.), making up 80% of park trees and 53% of all street trees.

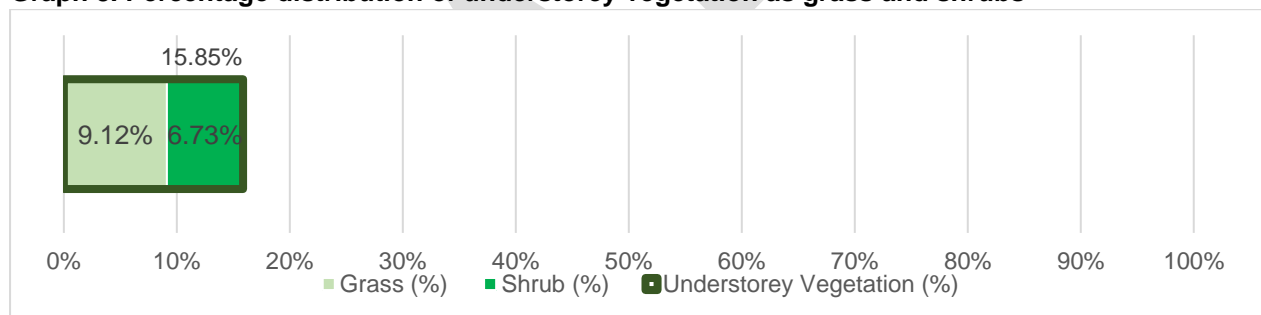
Understorey planting in Brighton East

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

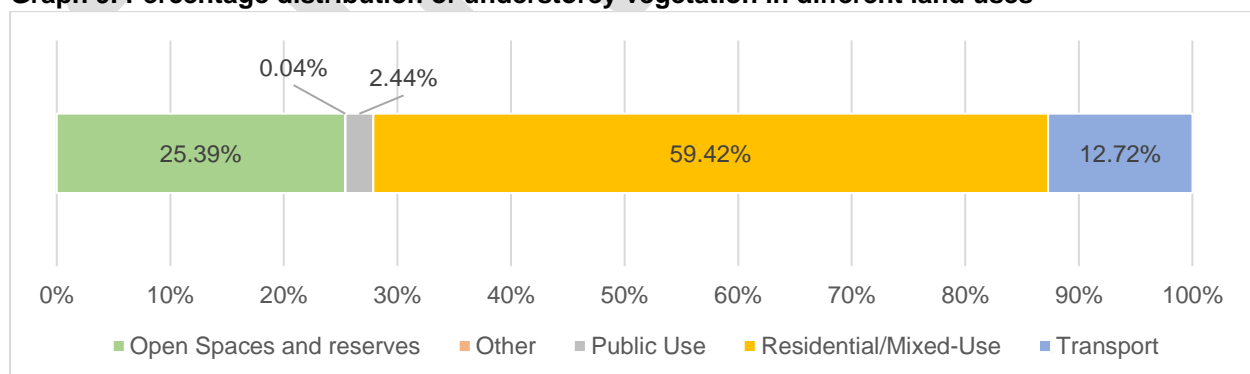
Understorey vegetation includes small trees, shrubs, herbs, grasses, mosses and lichens that occupy the vegetation layers below the canopy of taller trees.⁵ Bayside’s *Urban Forest Strategy* has three major goals to ensure the increase and improvement of the urban forest and the functions it serves. Two of these goals recognise the importance of understorey plantings. In addition, one of the strategic objectives of the Bayside *Urban Forest Strategy* is 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* which involves identifying the suitable locations to prioritise understorey planting.

There is currently 15.85% understorey vegetation coverage in Brighton East, with 59.42% being located within residential / mixed uses areas within the suburb. Open spaces and reserves then make up for 25.39% of understorey cover and 12.72% within streets. Opportunities exist to increase understorey planting upon all land uses, with particular priority on those areas that have a very low percentage of understorey planting (0-10%). These locations have been identified in Map 7 and include sections of Nepean Highway, Milroy Street, Union Street, Hawthorn Road and Marriage Road.

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

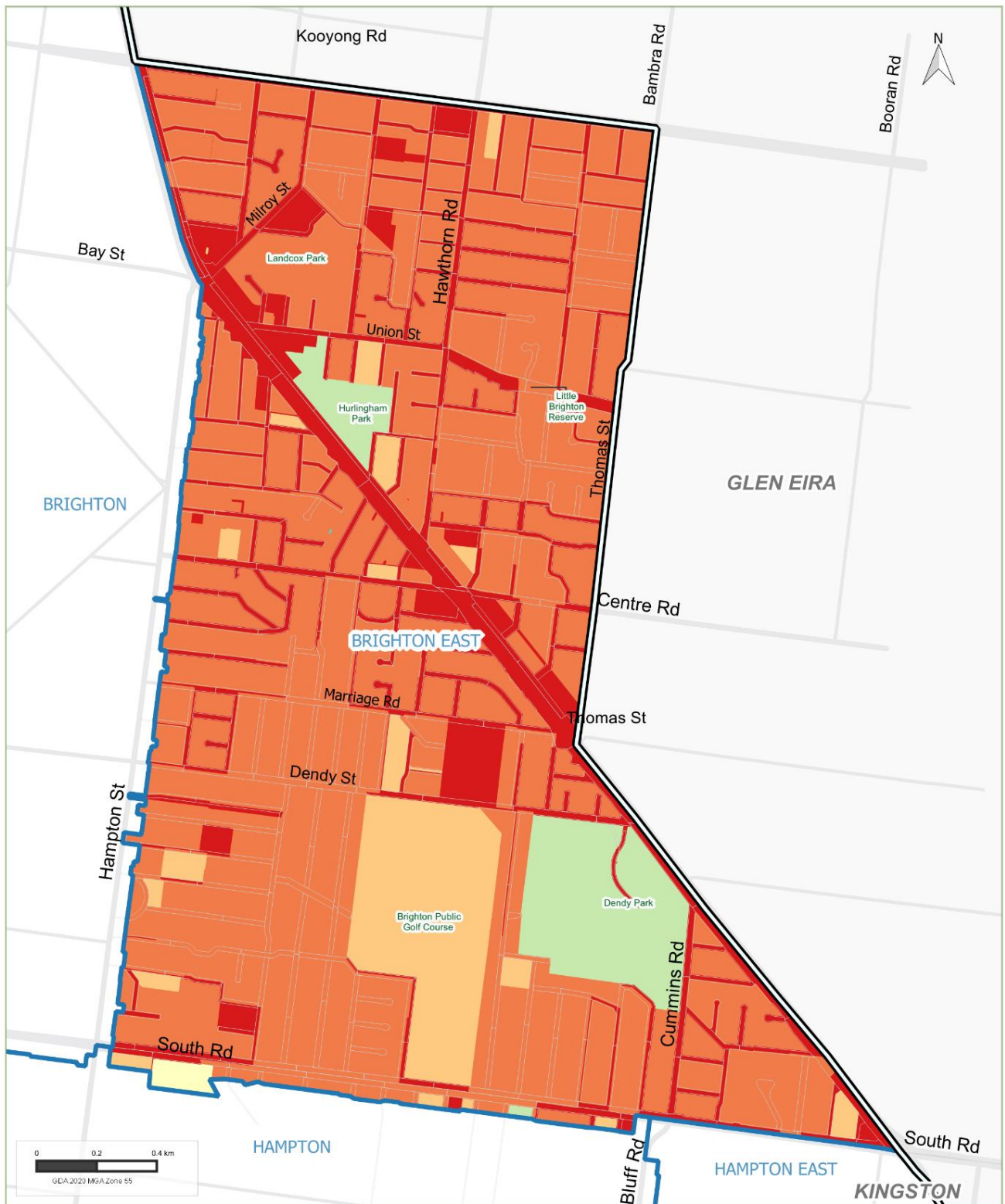


Graph 9. Percentage distribution of understorey vegetation in different land uses



⁵ Land for Wildlife Queensland, ‘The Value of Understorey Vegetation’ Note V6, available at: <https://www.lfwseq.org.au/wp-content/uploads/2016/11/The-Value-of-Understorey-Vegetation.pdf>

Map 7: Understorey Planting in Brighton East



Legend

Understorey Planting Percentage	20% to 30%	50% to 60%	Council Land	Arterial
0 to 10%	30% to 40%	50% to 60%	Golf Club	Sub-Arterial
10% to 20%	40% to 50%	Bayside LGA Boundary	Roads	Collector
		Suburb	Highway	Local Road

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Urban Heat Island

Urban heat island effect in Brighton East

Urban heat island effect is the phenomenon of dense urban areas having significantly warmer air and land surface temperatures than surrounding areas.⁶ 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.

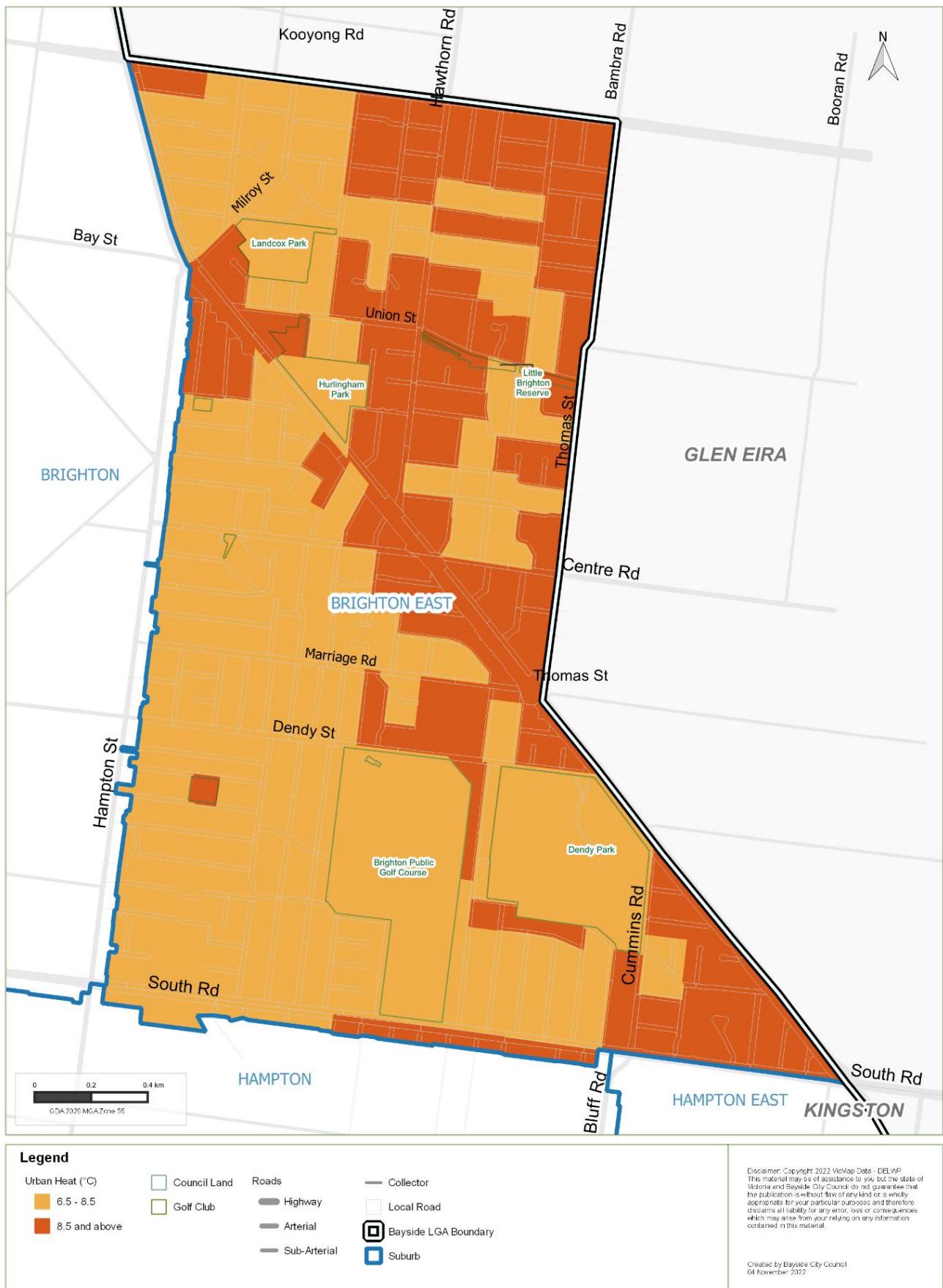
Urban heat data was captured in 2018 and provided in Map 8 below. The results are relatively moderate, illustrating some impacts to the eastern and central areas of the suburb. Increased greening and enhancement of the urban forest has been identified as one of the most cost-effective means of mitigating the potential impacts of climate change and urban heat island effects.

Council will prioritise planting on Council land that is most impacted by urban heat island effects. Innovative techniques such as green roofs and walls should also be explored and encouraged in places where more traditional approaches to increasing vegetation may be difficult to achieve (Nepean Highway and the Small Commercial Activity Centres).

Due to larger areas that have impervious hard surfaces, that generate heat, and low understorey planting, there may be moderate impacts from urban heat island effect in the eastern and central areas of Brighton East.

⁶ 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

Map 8 - Urban Heat – Increased temperatures in Brighton East



Biodiversity Assessment

To help inform the Bayside *Urban Forest Strategy*, Council undertook a desktop biodiversity assessment across the entire municipality. The purpose of the desktop biodiversity assessment was to assess and identify the existing ecological values present within the municipality and identify key areas where biodiversity could be improved. This section of the Precinct Plan will focus on the findings of this assessment within the suburb of Brighton East.

Strategic Biodiversity Value Score

The Strategic Biodiversity Value (SBV) is a ranking system developed by the Department of Transport & Planning (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 - 1 and is mapped across all areas of Victoria.⁷

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

- Brighton Public Golf Course (0.2 to 0.4)
- Landcox Park (0.1 to 0.2).

Future planting within these areas should focus on ensuring the SBV scores modelled within these areas do not decrease, by promoting native 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 8 EVCs were modelled within the Bayside area. The modelled distribution of the 2005 DELWP mapping extent, highlights that the majority 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.

Of the 8 EVCs modelled within Bayside, one was present within Brighton East, specifically the Grassy Woodland / Damp Sands Herb-rich Woodland. These identified EVCs have informed the species palette in Appendix 3 to this Precinct Plan. The species palette provides guidance on species of trees and vegetation that should be planted in order to enhance the character and enhance the ecological values of the urban forest.

⁷ Desktop Biodiversity Assessment for the Urban Forest Strategy, Bayside City Council (2022)

Map 9 - Biodiversity Value Score



Map 10 – Historic Ecological Vegetation Classes



Legend		Modelled 2005 Ecological Vegetation Classes	Planning Zones
	Bayside LGA Boundary		
	Suburb		
	Council Land		
	Golf Club		
	Property Boundaries		
		Grassy Woodland / Damp Sands Herb-rich Woodland Mosaic (EVC 719)	PPRZ - Public Park and Recreation Zone
			PUZ1 - Public Use Zone - Service and Utility
			PUZ2 - Public Use Zone - Education

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Park Improvement and Habitat Linkage Plan 2022

The *Park Improvement and Habitat Linkage Plan 2022* was undertaken by Council as a way to improve species diversity within Bayside and understand what species (trees and vegetation) would best support specific locations in Bayside and encourage the rebuilding of ecological foundations. The objective of the plan is to assist in increasing the diversity of indigenous and native plantings in council-owned open spaces outside the conservation reserve system and strengthen the connections between natural areas.

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

1. 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.
2. 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’.

Conservation in Brighton East

Brighton East does not contain any conservation reserves.

Core Habitat Patches

Six core habitat patches have been identified within Brighton East as areas where planting should occur to implement new or improve existing links to areas of open space and provide habitat corridors:

1. Landcox Park
2. Hurlingham Park
3. Little Brighton Reserve
4. Dendy Park
5. Lucas Street Reserve
6. The Plantation.

Map 11 – Core Habitat Patches in Brighton East



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.⁸

Priority Habitat Improvement Areas identified in Brighton East are:

- Landcox Park
- Hurlingham Park
- Little Brighton Reserve
- Dendy Park
- Brighton Public Golf Course.

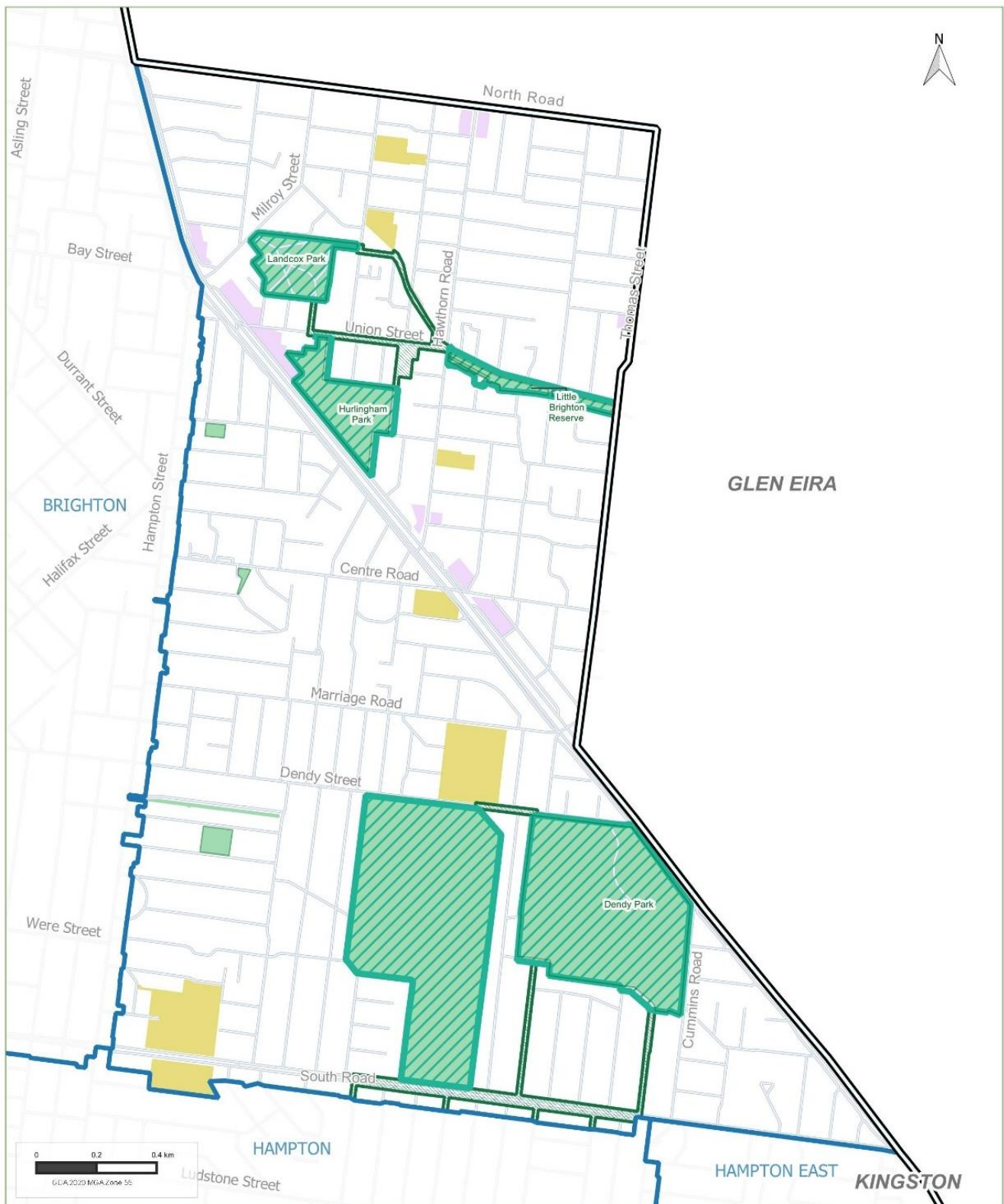
Priority Linkage Improvement Areas

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 a broader range of species.⁸ Locations of priority linkages identified across the municipality have been restricted to public land, except for limited instances within privately owned golf courses.

- Landcox Park to Hurlingham Park via Sunnyside Avenue/ Union Avenue/ Francis Street
- Landcox Park to Little Brighton Reserve via Union Street and/or Elster Creek
- Brighton Public Golf Course to Dendy Park via Dendy Street
- Studley Road via South Road to Bourneville Avenue.

⁸ Park Improvement and Habitat Linkage Plan, Bayside City Council (2022)

Map 12 – Habitat Linkages and Improvement in Brighton East



Legend

- | | | | |
|----------------------|---------------------------------------|----------------------------------|--|
| Bayside LGA Boundary | Council Land | Habitat Improvement Area | C1Z - Commercial 1 Zone |
| Suburb | Education (Government or Independent) | Habitat Linkage Improvement Area | PPRZ - Public Park and Recreation Zone |
| 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 from the community.

The objectives of the Bayside *Urban Forest Strategy* is 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 metre 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) and the Heritage Overlay (HO). The HO however is the only overlay that applies to private land in Brighton East.

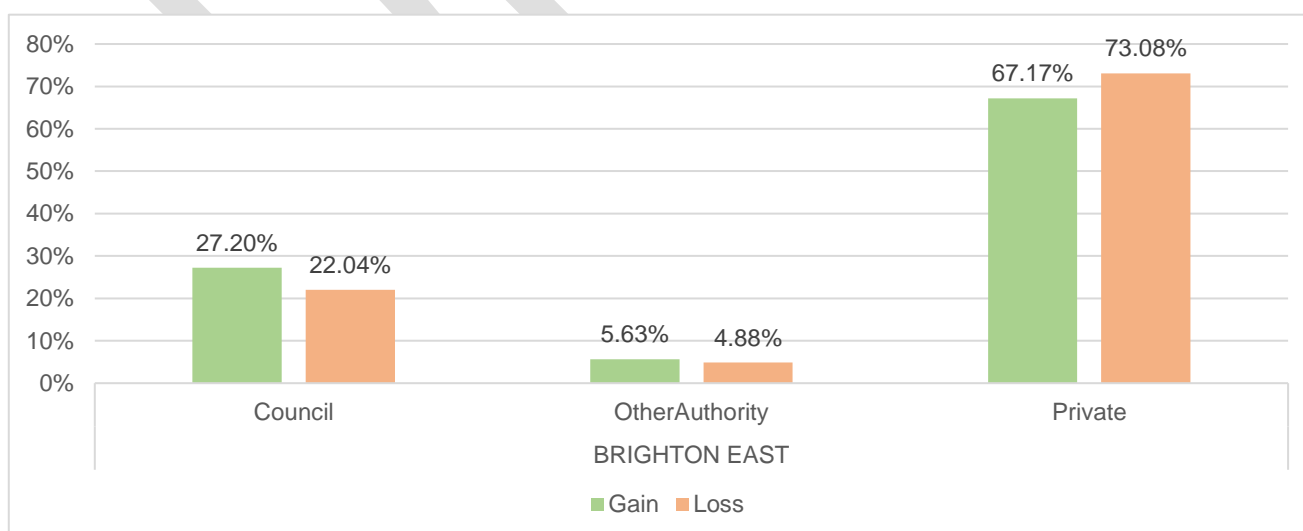
It is difficult to approximate the number of trees removed from private land each year under a planning permit as this is not separately recorded (and one application can be for multiple tree removals), let alone the extent of tree removal that is legal or illegal.

As indicated in Graph 10, while private land contributed to 67% of tree canopy gains in Brighton East, it also contributed to 73% of tree canopy losses. Conversely, council-owned land contributed 27% of tree canopy gain versus 28% of tree canopy losses. Losses and gains were calculated by comparing 2015 and 2019 canopy cover data.

Tree loss and gain in Brighton East on private land

Map 13 shows tree canopy lost and gained in Brighton East 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 the council’s GIS team to identify changed areas of vegetation.

Graph 10: Tree canopy across various land ownerships



Encouragement of trees on private land

As mentioned in the Bayside *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.

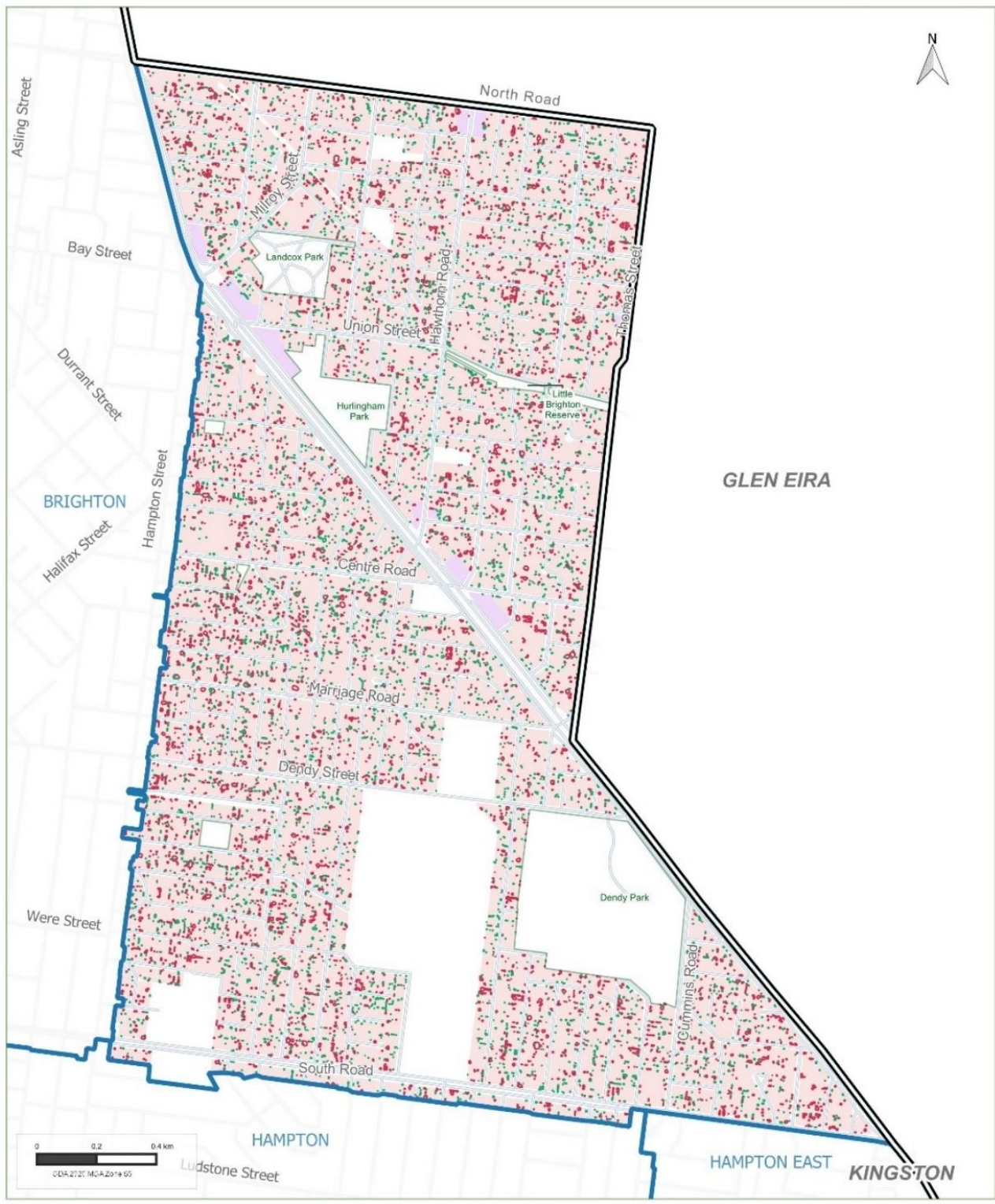
Council will also investigate opportunities to provide free tree and vegetation giveaways to residents. This will provide Council with a pathway to influence the tree and vegetation cover that exists on private land and help residents maintain the health of their trees and gardens. Bayside already has 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 across Bayside by 2040.

As part of the Bayside *Urban Forest Strategy* Implementation Plan, Council is exploring opportunities to include further policies and planning mechanisms within the Bayside Planning Scheme with an aim to maintain and increase tree canopy and vegetation on private land.

Map 13 - Vegetation loss and gain on private land



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

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Brighton East in Images

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



Image 6. Marriage Road, an example of a road with low tree canopy coverage



Image 7. Davey Avenue, an example of a street with medium tree canopy coverage

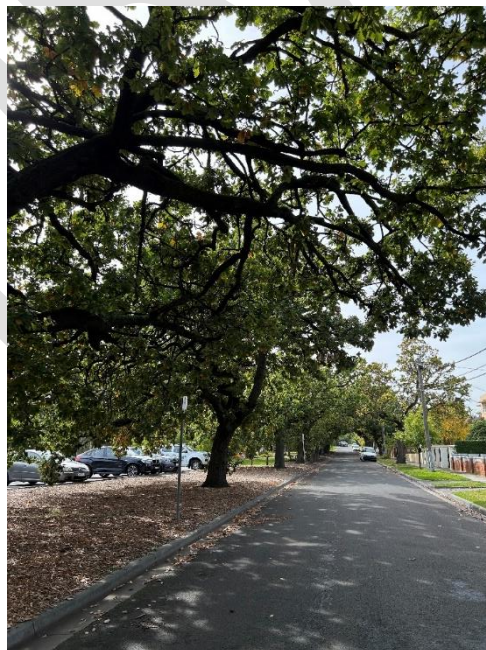


Image 8. Milliara Grove, an example of a street with high tree canopy coverage

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 under powerlines.

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.

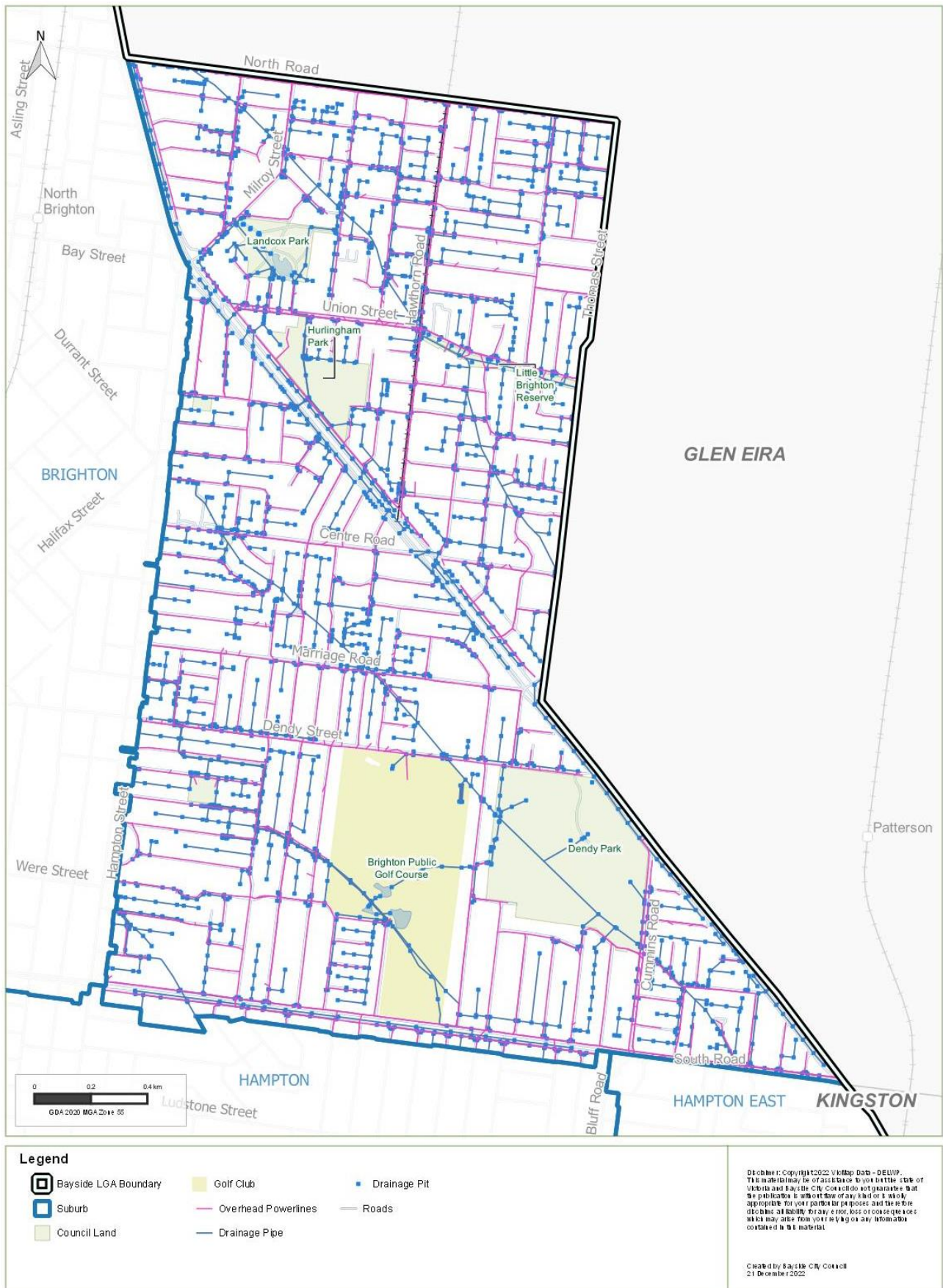
As a phase 1 action of this plan, Council will facilitate the negotiations between the residents and relevant authorities to support the undergrounding of powerlines (and other services) if there is sufficient interest in a street. Council will also advocate to VicRoads and other authorities for undergrounding the powerlines 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 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 is located with consideration to future flood and storm surge risk. Existing infrastructure has to 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 actions to lessen its adverse consequences and 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 Brighton East



Key Opportunities

Greening Brighton East

Increasing tree canopy cover to reach 30% and vegetation cover to reach 30% across Brighton East by 2040.

Biodiverse suburb

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

Improve monitoring and maintenance

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.

Council-owned open spaces

Brighton East has approximately 75 hectares of open space that includes parks, reserves, and foreshore areas.

An opportunity exists to increase the number of canopy trees and vegetation planted in these areas, including Landcox Park, Hurlingham Park, Dendy Park, Little Brighton Reserve, Lucas Street Reserve, Glen Edward Rice Reserve, Brighton Public Golf Course and Old Dairy Reserve.

Council-owned projects

There is a significant opportunity to increase vegetation cover in Brighton East 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.

Commercial areas

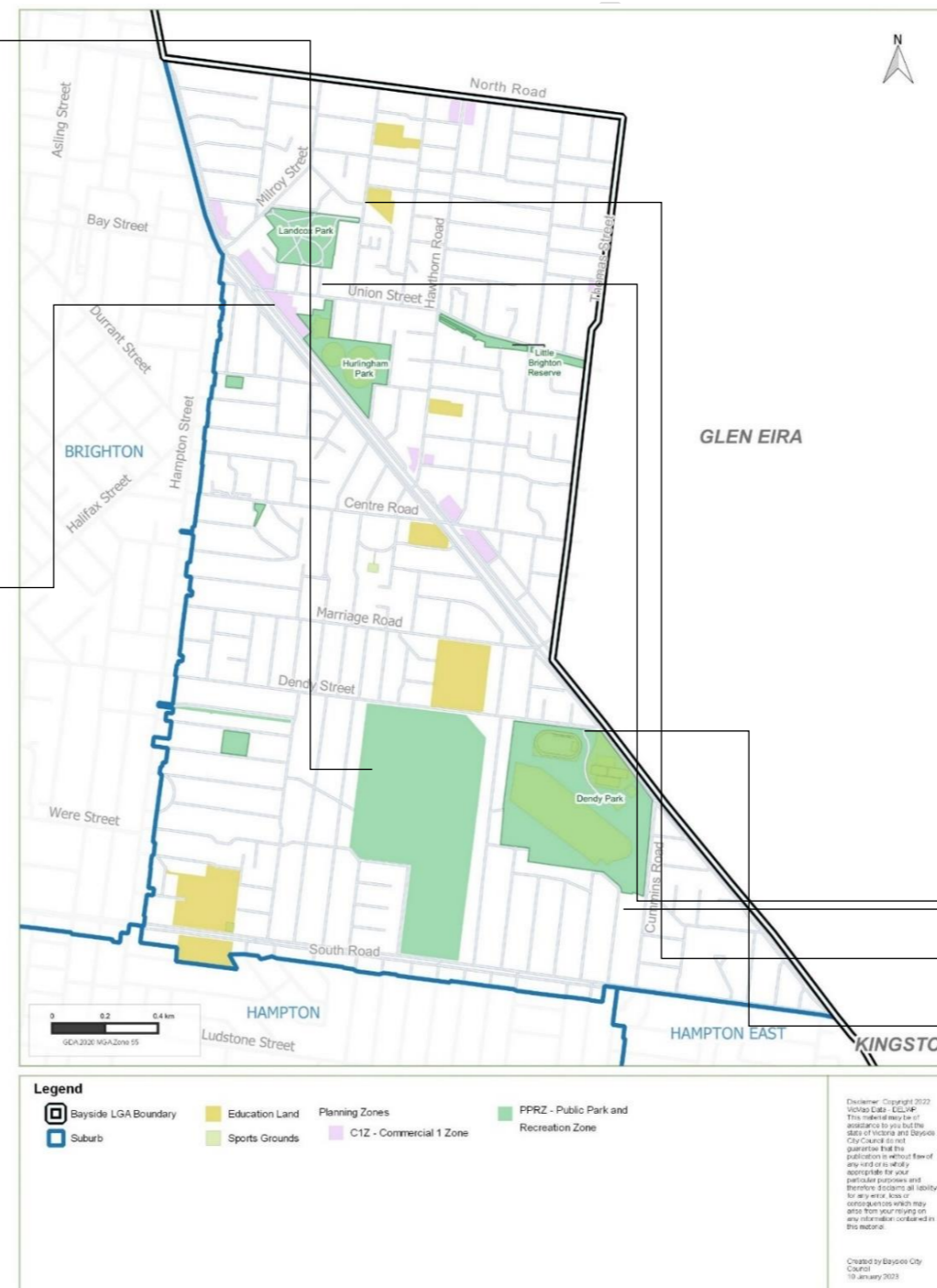
Across Brighton East there are various parts of the suburb that are zoned for commercial use. These include:

- East Brighton Shopping Centre
- Hawthorn Road Shopping Centre
- Thomas Street and Egan Street Centre
- Nepean Highway and Milroy Street Centre
- Nepean Highway and Centre Road Centre

The character of these commercial centres can be improved by increasing the amount of vegetation. This will create more appealing centres that will attract a greater number of visitors and therefore increase business for local traders.

When planting trees in commercial areas conflicting priorities such as the demand for car parking, footpath activation, shop awnings, street lighting and road signage must be considered. Innovative techniques such as green roofs and walls and replacing trees in poor health should be explored and encouraged to increase vegetation.

Map 15 – Key Opportunities in Brighton East



Educational Land

Council will work with other State Government departments and with private owners to increase vegetation cover on educational land. Schools within Brighton East include:

- Gardenvale Primary School
- Melbourne Montessori School
- St Finbar's Parish Primary School
- Brighton Secondary College
- St Leonard's College
- Halieybury College.

Nature strips

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.'

Habitat Linkage

Increase canopy cover and understorey cover and improve habitat connectivity at:

- Landcox Park to Hurlingham Park via Sunnyside Avenue/ Union Avenue/ Francis Street
- Landcox Park to Little
- Reserve via Union Street and/or Elster Creek
- Brighton Public Golf Course to Dendy Park via Dendy Street
- Studley Road via South Road to Bourneville Avenue.

Priority Linkage Improvement Areas

- Landcox Park to Hurlingham Park via Sunnyside Avenue/ Union Avenue/ Francis Street
- Landcox Park to Little Brighton Reserve via Union Street and/or Elster Creek
- Brighton Public Golf Course to Dendy Park via Dendy Street
- Studley Road via South Road to Bourneville Avenue.

Prioritising Trees and Vegetation in streets

Streets make up approximately 22% of the total area of Brighton East. When prioritising where to plant, it is important to focus resources in the locations that need it most. This includes consideration of where we have opportunities to plant understorey, improvement of habitat, where the highest density of people reside, and where very low canopy cover exists.

Tree replacements are only identified for streets where the useful life expectancy of multiple trees is rated at less than 10 years.

Planting priorities

The Implementation Plan later in this document identifies phase 1 actions that are to be delivered within the next 5 years. These actions along with the *Park Improvements and Habitat Linkages Plan 2022* will identify priority areas and inform the Annual Tree Planting Program.

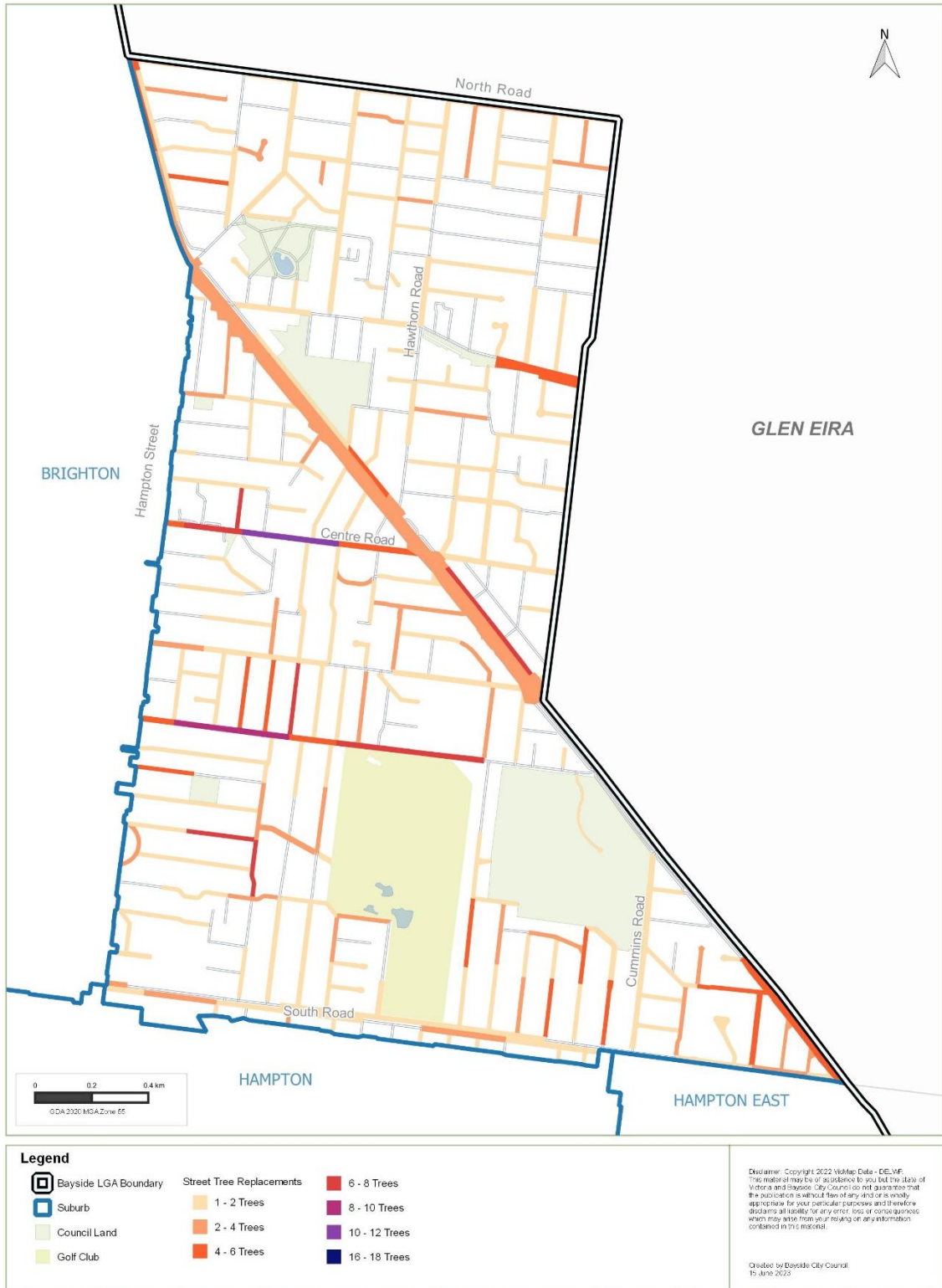
As a response to the Bayside *Urban Forest Strategy*, Council is committed to increasing tree planting every year. Maps 17 to 20 identify priority locations to be targeted in Council's Annual Tree Planting program.

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.

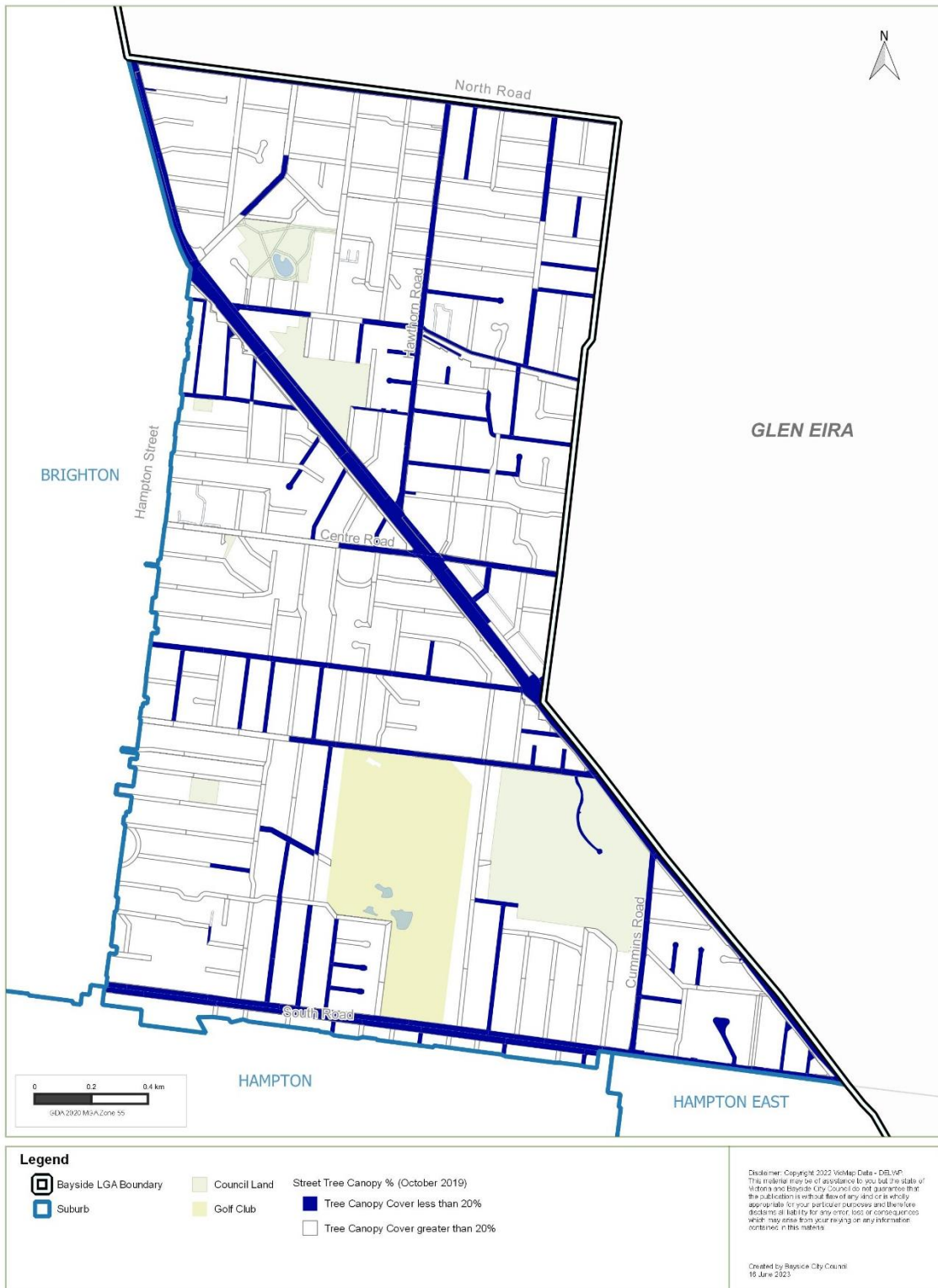
How the precinct plan guides planting



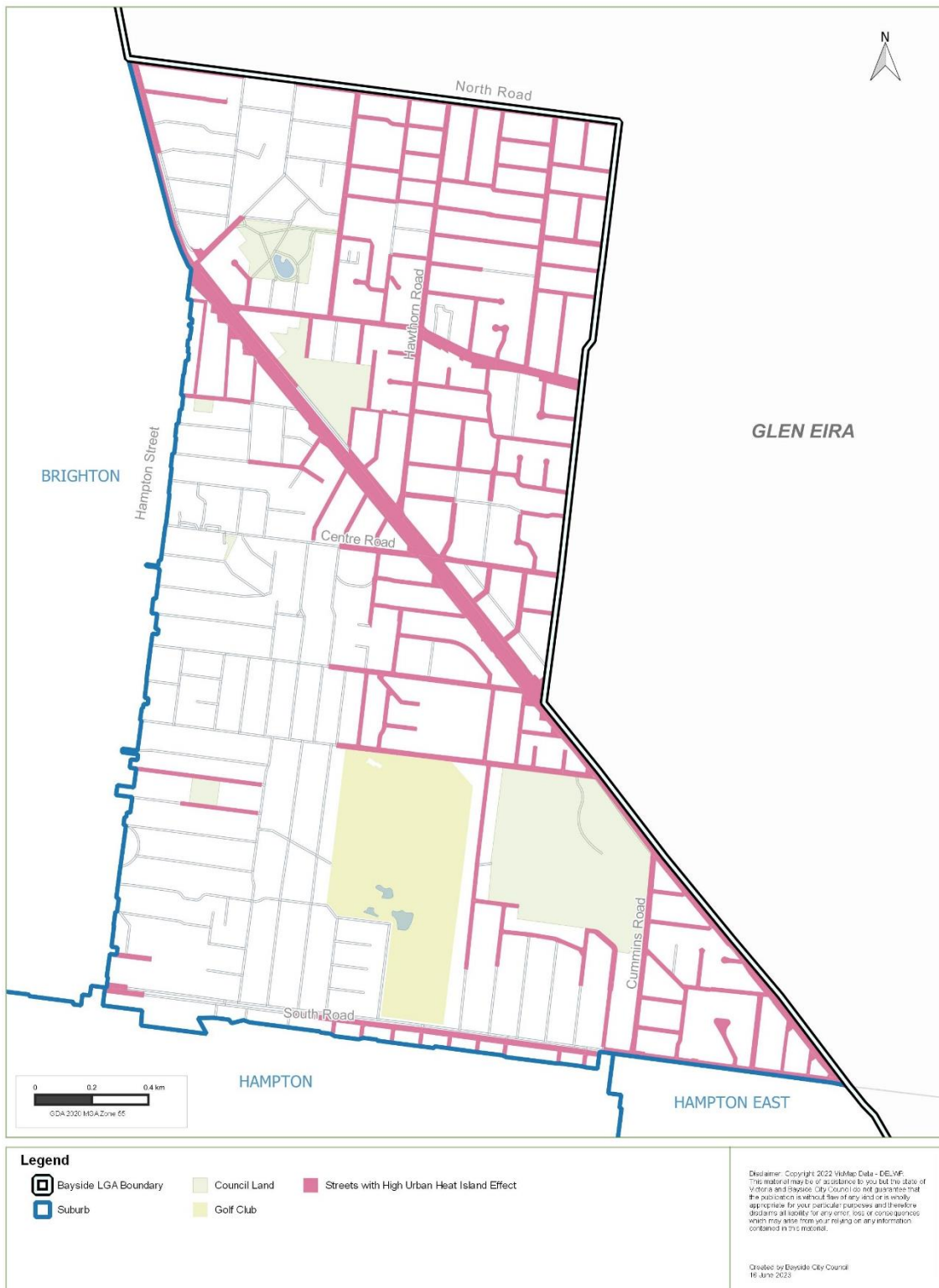
Map 16 – Location of Tree Replacements required in next 10 years in Brighton East



Map 17 – Streets with less than 20% Tree Canopy Cover in Brighton East



Map 18 – Streets with High Urban Heat Island Effect in Brighton East



Implementation Plan

The following set of actions specifically identifies outcomes for trees and vegetation planting. They provide the framework for change within Brighton East 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
Create a diverse and healthy urban forest that reinforces greater outcomes for biodiversity.						
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 10 - 11), including:</p> <p>Priority Habitat Improvement Areas:</p> <ul style="list-style-type: none"> Landcox Park Hurlingham Park Little Brighton Reserve Dendy Park Brighton Public Golf Course. <p>Priority Linkage Improvement Areas:</p> <ul style="list-style-type: none"> Landcox Park to Hurlingham Park via Sunnyside Avenue/ Union Avenue/ Francis Street Landcox Park to Little Brighton Reserve via Union Street and/or Elster Creek Brighton Public Golf Course to Dendy Park via Dendy Street Studley Road via South Road to Bourneville Avenue. <p>Core habitat patches:</p> <ul style="list-style-type: none"> Landcox Park Hurlingham Park Little Brighton Reserve Dendy Park Lucas Street Reserve The Plantation. 	Open Space	Year Budget allocated for 2022/23 and 2023/24 financial years.1 to 2	Budget allocated for 2022/23 and 2023/24 financial years.	<i>Park Improvement Habitat Linkage Plan</i> and the <i>Urban Forest Strategy Annual Reporting Program</i> .
Phase 1	Enhance biodiversity outcomes on private land.	<p>Encourage private landowners to plant vegetation on nature strips within their street 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 may be required to create and implement specific engagement plans.	<p>Utilise engagement evaluation matrix to measure success.</p> <p>Increased number of community members involved in activities.</p> <p>Increased demand from residents for vegetation outside their house.</p>
Phase 1 & 2	Create new open space, pocket parks, micro-forests in the suburb seeking new biodiversity or habitat corridors.	Seek additional funds to support the acquisition of land for new open spaces to connect core habitat patches.	Open Space	Year 3	Resources required for advocacy	Number of grants / opportunities applied for.
Phase 1	Ensure humans and wildlife can simultaneously and safely access densely vegetated areas, streets and reserves	<p>Support the undergrounding of powerlines where it is at the request of the community and at their full cost.</p> <p>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.</p>	Asset Protection, Urban Strategy	Ongoing	No budget required	Number of streets where undergrounding of powerlines has been implemented

Phase	Objective	Action	Responsibility	Timeframe	Resources required	Measure
Enhance landscape outcomes and increase tree and vegetation cover to reach 30% across Brighton by prioritising areas in greatest need						
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.	<p>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%):</p> <ul style="list-style-type: none"> • Milroy Street • Dendy Street <p>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:</p> <ul style="list-style-type: none"> • Coronation Street, North Road, Landcox Street, • Northern Avenue, Eric Street, Charles Street, • Lansdown Street, Taylor Street, Hawthorn Road, • Louise Street, Weber Street, Lorrean Avenue, • Valanne Street, Bruce Street, Hodder Street, • Beltane Avenue, Thomas Street, Carween Avenue, • Allfrey Street, Moon Street, Murray Street, • Bayview Road, Egan Street, Wrixon Avenue, • Charles Street, Lubrano Street, Dunoon Court, • Union Street, Trinity Court, Mackie Grove, • Cheeseman Avenue, Davey Avenue, Beedoe Avenue, • Rogers Avenue, Hornby Street, Gillard Street, • Clive Street, Kingston Street, Eloura Avenue, • Perry Street, Victory Court, Clinton Street, • Parkland Crescent, Palmer Avenue, Stradbroke Avenue, • Howell Street, Milliarda Grove, Granter Street, • Matthews Court, Berkeley Grove, Landcox Street, • Noel Street, Elizabeth Street, Aralee Place, Alexander Street, • Tregenna Court, Milroy Street, • Commercial precinct along Nepean Highway, • Blanche Street, Roseberry Avenue, Agnew Street, • Ferguson Street, Arnot Street, Primrose Crescent, • Cluden Street, Vilot Crescent, Lilac Crescent, • Centre Road, Ward Street, Wallen Street, • Florence Street, Curley Street, Robinson Street, • Marriage Road, Lysander Street, Hughes Street, • Sara Avenue, Beenak Avenue, Dendy Street, • Brighton Secondary College, • Burwah Avenue, Glencairn Avenue, Prince Street • Lucas Street Reserve, • Melosa Avenue, Vernon Street, Percival Street, • Hansen Street, Dacey Street, Bourneville Avenue, • Sunlight Crescent, Arnold Road, Cummins Road, • South Road, Studley Road, Denton Street, • Janet Street, Dumaresq Street, Tuxen Court, • Tatong Road, Vincent Street, Carr Street, • Roberts Court, Gleniffer Avenue, Raymond Court, • Hemming Street, Barr Street, Kendall Street, • Smith Street, Olive Street, Barnett Street, • Ivy Street, Earlsfield Street, Bateman Street. 	Open Space	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 <i>Urban Forest Strategy Annual Reporting Program.</i>

Phase	Objective	Action	Responsibility	Timeframe	Resources required	Measure
Phase 2	Increase utilisation of green walls and green roofs in Activity Centre area.	Encourage innovative greening in Small Neighbourhood Activity Centres and Small Commercial Activity Centres by promoting and piloting different greening initiatives. Investigate opportunities to introduce mechanisms to increase green roofs and walls within Activity Centres.	Development Services, Economic Development, Strategic Planning	Year 5 to 10	Economic Development team may require budget to run pilot programs.	Number of plants planted. Urban Forest Strategy Annual Reporting Program.
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	Ongoing	Budget will be considered as part of the project scope.	Number of plants planted. Urban Forest Strategy Annual Reporting Program.
Phase 1	Increase tree canopy cover by prioritising vacant tree sites.	As part of the Annual Tree Planting Program, continue to identify the current vacant sites and prioritise planting at these sites.	Open Space	Ongoing	Budget and resources will be required to increase the number of trees and understorey plants to be planted.	Number of plants planted <i>Urban Forest Strategy Annual Reporting Program.</i>
Learn together, educate each other, encourage and celebrate greater care and protection of the Bayside Urban Forest						
Phase 1	Increase planting on principal public transport network that less than 20% of tree canopy cover.	Advocate to the VicRoads and other authorities for increased planting on Nepean Highway, Hawthorn Road, South Road, North Road, Centre Road, and Cummins Road.	Open Space, Urban Strategy, Communications and Engagement	Ongoing	No budget required.	A commitment made to plant trees on the streets maintained by VicRoads.
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.
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.
Maintain our existing canopy cover across Brighton and avoid any further decline where possible						
Phase 2	Ensure our urban forest is healthy and resilient.	Where trees reaching the end of their useful life expectancy have been assessed and are no longer providing a benefit to the surrounding habitat, removal may be required. Replacement trees should be selected based on the surrounding environment, neighbourhood character (where relevant) and above and below ground infrastructure. It is noted that there are various trees potentially reaching the end of their useful life expectancy at the locations identified in Map 5. Where it has been found that trees reaching the end of their useful life still provide benefit and habitat, it should be retained as a habitat tree as per the Tree Risk Assessment Tool (TRAQ).	Open Space	Year 5 to 10	Budget and resources will be required to increase the number of trees and understorey plants to be planted.	Number of replacement plants planted, and number of those trees retained for habitat. Urban Forest Strategy Annual Reporting Program

Phase	Objective	Action	Responsibility	Timeframe	Resources required	Measure
Phase 1 and 2	Increase Council's ability to protect trees from vandalism.	Explore additional opportunities to minimise vandalism. Consider the preparation of a communications and engagement strategy targeted to private property owners and the wider community.	Local Laws, Open Space	Year 1 to 3	Budget and resources will be required to explore opportunities.	Utilise engagement evaluation matrix to measure success.
Phase 2	Provide safer and cleaner streets for our residents and visitors	As tree and vegetation cover increases with time, ensure future maintenance contracts appropriately funds the clean-up of tree leaves and debris on streets and public land.	City Asset, Open Space	Year 5 to 10	Additional budget may be required for maintenance contract.	The number of requests for additional service.
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.

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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.

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.

Brighton East has a distinctive character that consists of varying native, indigenous and exotic species. Future planting should continue to enhance the diversity of the urban forest.

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 totalling the same canopy extent. Prioritise the use of large canopy trees, with larger trees planted preferentially in centre medians or tree islands, then in the roadway and then the footpath.

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

2. Constrained planting spaces

- a.) *Cut-outs*. 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 or footpath width and other factors such as traffic volume and impact to on-street parking.
- b.) *Planting in road reserve*. Designing in-road tree pits where there is 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.

5. Streets and powerlines:

- a.) *Residential streets*. Low voltage overhead wires are present on one side of most residential streets. Where medians exist for large canopy tree planting, small to medium trees on the side overhead constraints should be selected, always prioritising understorey planting.
- b.) *Streets with small nature strip and powerlines*: In streets that have small or very small nature strips, a smaller growing tree 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 theme for the street.

- c.) *Tree pruning:* In streets where footpath trees provide the only canopy, medium to large trees that can be effectively pruned around powerlines 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 powerlines.
- d.) *Underground powerlines.* Although overhead powerlines are typically more economical, they are susceptible to damage from windborne tree branches, debris, and high wind conditions from extreme weather.

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.

6. Planting patterns and species choice

Brighton East's urban forest character is quite varied, with many of the council-managed spaces having a significant amount of gum trees, while exotic species are more prominent as street trees and upon private residential land. and there will continue to be a higher population of gum trees in Brighton East. 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 Facades

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 powerlines

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 runoff 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 development, at least 20% of the site should have surfaces that can absorb water such as lawns, garden beds or permeable paving. The 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 projects.

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1



2a



2b



2c



3



4



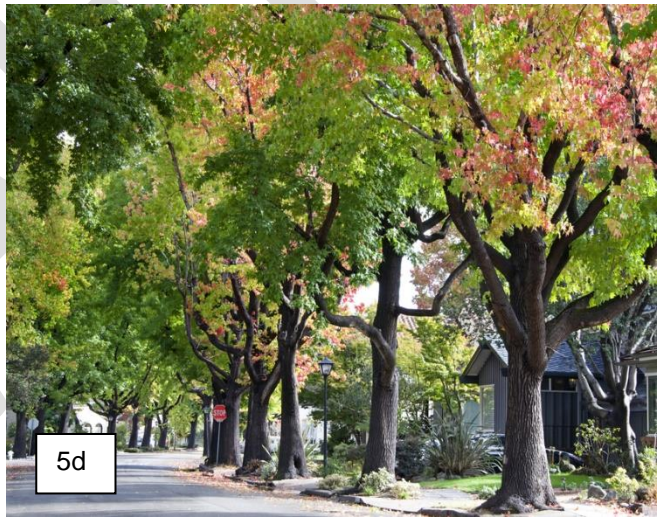
5a



5c



5b



5d



6

Appendix 2: Case Studies

The following case studies showcase high-quality landscaping that combines the use of indigenous and native vegetation and high-quality design. A precinct's landscape helps define its character in much the same way as architecture or urban design because trees and other vegetation physically define a place. Landscapes are the setting for many everyday recreational and leisure activities and help forge a sense of connection to place.

1. Milliard Grove

The avenue of English Oaks along Milliard Grove provides an excellent example of how canopy trees can be celebrated in Bayside. This established avenue of exotic tree plantings should be retained to preserve the history and character of the street. The tree-lined streetscape within Brighton East forms a distinctive part of Bayside's urban forest.



1. Milliard Grove, Brighton East

2. City of Melbourne Streetscape Biodiversity Case Study

A precinct's landscape helps define its character in much the same way as architecture or urban design because trees and other vegetation physically define a place. Landscapes are the setting for many everyday recreational opportunities such as organised sport, walking or having a picnic and therefore help forge a sense of connection to place.

The *City of Melbourne's Streetscape Biodiversity Case Study* provides an example of high-quality landscaping that focuses on utilising native species to create attractive streetscapes and biodiversity corridors. The City of Melbourne collaborated with the University of Melbourne to develop and test an understorey plant palette designed to increase streetscape biodiversity in the urban environment. In 2018, the plant palette was integrated into four streetscapes within the City of Melbourne, Clowes Street, Docklands Drive, Park Street and Arden Street. The understorey plant palette focused on predominantly native species, comprising perennial herbs, grasses and shrubs that were aesthetically attractive, low maintenance and tolerant to environmental challenges like drought. The species were also selected based on what resources they could provide to birds, bees and butterflies such as pollen and nectar. Increasing understorey planting along streets is a successful and cost-effective way to improve biodiversity, amenity and function whilst creating a more ecologically connected urban landscape. The examples provided can be replicated within Bayside by council and residents to increase vegetation and provide habitat for local fauna.



Original condition as a bitumen footpath (April 2017).



Plant installation (April 2018).



Post-plant installation (November 2018).



Post-plant installation (November 2019). Photo: David Hannah.

2. Construction and growth of the Clowes Street biodiversity planting site

Appendix 3: Brighton East Species Palette

Species Targets

A broad target for Council's future planting has been set for native, indigenous and exotic species for each precinct. These targets should only be utilised as a guide for new and replacement planting in each precinct. While it is important to strive towards these targets and diversify the urban forest, species should also be selected based on their ability to survive in certain locations, their contribution to existing landscape character and community safety as well as their ability to improve habitat. This is particularly significant for some of Bayside's parks and reserves that have unique landscape character which should continue to inform future plantings.

Suburb	Suggested Exotic	Suggested Native	Suggested Indigenous
Brighton East	60%	10%	30%

Species Palette

The following species provided are of guidance only. The Ecological Vegetation Classes (EVC) that exist in Brighton East have informed the species palette as they focus on retaining and increasing native vegetation. In the suburb of Brighton East, the EVCs found are Damp Sands Herb-rich Woodland / Grassy Woodland (719).⁷ By prioritising the listed species, emphasis will be given on restoring native vegetation, to replicate the original vegetation of the area.

The prepared species palette for Brighton East seeks to enhance the already diverse urban forest while also ensuring the species are complimentary to the EVCs found within the suburb. 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 species for planting, responsible teams should consider which species will be the least destructive to underground infrastructure. This will ensure that Council can increase vegetation cover whilst protecting existing infrastructure and reducing demand for maintenance. Bayside City Council has also developed the *Live Bayside Plant Bayside 2022* as a guide to inform all future planting on public and private land. Residents are encouraged to use the guide in conjunction with the Brighton Species Palette when undertaking planting on their private properties. The *Live Bayside Plant Bayside* Guide features a selection of plants including:

- Herbs and groundcovers
- Creepers and climbers
- Lilies, grasses and tussocks
- Small shrubs
- Large shrubs
- Trees.

Council promotes the use of indigenous plants as they occur naturally within Bayside and have adapted to the conditions within the local environment such as soil and climate and provide habitat and food for local birds, insects, and other native animals.

General Indigenous Planting List

The following list of Indigenous plants is provided as guidance only and should be considered for planting on public and private land and provides additional information as to the suitability of plants to the surrounding environment.

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.

Of the 6 EVC Mosaics modelled within Bayside, one is present in Brighton East, being the Damp Sands Herb-rich Woodland / Grassy Woodland. If available, these species can be planted where soil conditions are suitable, in representation of the EVCs that were historically present within the suburb (as per Map 10).

The indigenous list provides information on each plant regarding the approximate size at maturity, the type of environment the species are most suited to, and the EVC classification that the plant is historically within (if relevant):

- A plants are adaptable, growing well in most soil types and aspects
- C plants are for the coast – dune scrub and woodland
- D plants prefer dry, well-drained soils and can tolerate dryness once established
- S plants prefer or tolerate full shade
- H plants prefer heath or woodland
- W plants prefer or tolerate moist soils, wetness and periodic inundation.
- Where plants are suitable within several environments, all relevant letters are written (e.g HCDA)

Plants that are not readily available, difficult to source or prone to weediness are marked on the list below:

- * local to Bayside but difficult to propagate (not readily available)
- (W) local to Bayside but not propagated due to weediness.
- (S) not local to Bayside but could be available at a Sandbelt Indigenous Nursery (Greenlink Sandbelt Indigenous Nursery; Westgate Biodiversity: Bili Nursery & Landcare; Frankston Indigenous Nursery; Mornington Peninsula Indigenous Nursery - Briars Nursery.
- (N) not local to Bayside

Species Name	Common Name	Key	EVC Mosaic
Climbing Plants			
<i>Billardiera mutabilis</i> (syn. <i>B. scandens</i>)	Common Appleberry	HA	719, 3
<i>Cassytha glabella</i> (W)	Slender Dodder-laurel		892
<i>Clematis microphylla</i> var. <i>microphylla</i>	Small-leaved Clematis	HCA	919, 921
<i>Comesperma volubile</i>	Love Creeper		719, 3
<i>Galium australe</i>	Tangled Bedstraw	Scrambler	919, 921
<i>Hardenburgia violacea</i>	Purple Coral Pea	HD	
<i>Muehlenbeckia adpressa</i>	Climbing Lignum	HCDSH	
Grasses and Tussocks			
<i>Austrostipa flavescens</i>	Coast Spear-grass	50cm x 50cm CA	921
<i>Austrostipa mollis</i>	Soft Spear-grass	30cm x 30cm HA	719, 921, 3

Species Name	Common Name	Key	EVC Mosaic
<i>Austrostipa stipoides</i>	Prickly Spear-grass	1m x 1m CD	
<i>Baumea rubiginosa</i>	Soft Twig-rush	Understorey graminoid	707
<i>Caesia parviflora</i>	Pale Grass-lily	10-50cm x 10-25cm HD	
<i>Carex pumila</i>	Strand Sedge	20-80cm CW	
<i>Deyeuxia quadriflora</i>	Reed Bent-grass	15cm x 40cm HD	719, 3
<i>Dianella brevicaulis</i>	Small-flower Flax-lily	60cm x 50cm HCDSHA	919
<i>Dianella laevis</i>	Pale Flax-lily	60cm x 50cm HA	
<i>Dianella longifolia</i>	Arching Flax-lily	To 1.3m x 0.4-1m	
<i>Dianella revoluta</i>	Black-anther Flax-lily	50cm x Spreading HCShA	719, 3
<i>Dichelachne crinita</i>	Long-hair Plume-grass	20cm x 30cm HD	
<i>Distichlis distichophylla</i>	Australian Salt-grass	10cm x Spreading CA	
<i>Eragrostis brownii</i>	Common Love-grass	20cm x 20cm HA	
<i>Ficinia nodosa</i> *	Knobby Club-sedge	50cm x 50cm HCA	919
<i>Gahnia radula</i> (S)	Thatch Saw-sedge		719, 892, 3
<i>Gahnia siberiana</i> (S)	Red-fruit Saw-sedge		892
<i>Hypolaena fastigiata</i>	Tassel Rope-rush		892
<i>Juncus pallidus</i>	Rush	1m x 50cm HCA	
<i>Lachnagrostis billardierei</i> (S)	Coast Blown-grass		
<i>Lepidosperma concavum</i> *	Sandhill Sword-sedge		719, 892, 921, 3
<i>Lepidosperma laterale</i> *	Variable Sword-sedge		719, 3
<i>Lomandra filiformis</i>	Wattle Mat-rush	50cm x 30cm HDSHA	719, 3
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	1m x 1m HCDSHA	719, 707, 3
<i>Lomandra multiflora</i>	Many-flowered Mat-rush	30cm x 30cm HAD	
<i>Microlaena stipoides</i> var <i>stipoides</i>	Weeping Grass	30cm x 50cm HCA	719, 3
<i>Patersonia occidentalis</i>	Long Purple-flag	40cm x 40cm HDW	
<i>Poa labillardieri</i>	Common Tussock-grass	50cm x 50cm HA	
<i>Poa poiformis</i>	Coast or Blue Tussock-grass	50cm x 50cm CA	919
<i>Poa sieberana</i>	Tussock-grass	30cm x 30cm HA	719, 3
<i>Rytidosperma caespitosum</i> (syn. <i>Austrodanthonia caespitosa</i>)	Common Wallaby-grass	40cm x 40cm HCA	

Species Name	Common Name	Key	EVC Mosaic
<i>Rytidosperma geniculatum</i> (syn. <i>Austrodanthonia geniculatum</i>)	Kneed Wallaby-grass	15cm x 15cm HCA	921
<i>Rytidosperma racemosum</i>	Clustered Wallaby-grass	20cm x 20cm HCDW	
<i>Rytidosperma setaceum</i>	Bristly Wallaby-grass	60-70cm x 40cm HCDW	
<i>Schoenus brevifolius</i> (N)	Zig-zag Bog-sedge		892
<i>Spinifex sericeus</i>	Hairy Spinifex	30cm x Spreading CDW	
<i>Sporobolus virginicus</i>	Salt or Sand Couch	10cm x Spreading CA	
<i>Tetrarrhena juncea</i>	Forest wire-grass		719, 3
<i>Themeda triandra</i>	Kangaroo Grass	50cm x 50cm HA	719, 3
<i>Thelionema caespitosum</i>	Tufted Lily	20-90cm x 0.5-1.30cm HA	
<i>Tricoryne eliator</i>	Yellow Rush-lily	30-50cm x 30-50cm HD	
<i>Triglochin striatum</i>	Streaked Arrowgrass	10cm x 20cm CW	
<i>Xanthorrhoea minor</i> subsp. <i>lutea</i>	Small Grass-tree	50cm x 50cm HD	719, 892, 3
Groundcovers & Wildflowers			
<i>Acaena novae-zelandiae</i>	Bidgee-widgee	Prostrate x 1m CShA	
<i>Acrotriche serrulata</i>	Honey Pots	10-30cm x 0.5-1m HD	719, 3
<i>Actites megalocarpa</i>	Dune Thistle	10-60 High CD	
<i>Amperea xiphoclada</i> var. <i>xiphoclada</i>	Broom Spurge	40cm x 40cm HD	719, 892, 3
<i>Apium prostratum</i> ssp. <i>prostratum</i>	Sea Celery	20cm x 50cm CW	
<i>Arthropodium strictum</i>	Chocolate Lily	30cm x 30cm HA	
<i>Astroloma humifusum</i>	Cranberry Heath	10-50cm x 1-1.5m HD	719, 3
<i>Bossiaea prostrata</i>	Creeping Bossiaea	10cm x 50cm HD	719
<i>Brachycome parvula</i>	Coast Daisy	20cm x 20cm CW	
<i>Burchardia umbellata</i>	Milkmaids	30cm x 10cm HDW	
<i>Carpobrotus rossii</i>	Karkalla	10cm x 1m CD	921
<i>Centella cordifolia</i> (S)	Centella	understorey herb	707
<i>Chamaescilla corymbosa</i>	Blue Stars	10cm x 10cm HW	
<i>Chrysocephalum apiculatum</i>	Common Everlasting	20cm x 50cm HD	
<i>Comesperma volubile</i>	Love Creeper	Open slender vine HD	
<i>Coronidium scorpioides</i>	Button Everlasting	30cm x 30cm HD	
<i>Dichondra repens</i>	Kidney-weed	Prostrate x 1m HCA	919, 719, 921, 3
<i>Disphyma crassifolium</i> subsp. <i>Clavellatum</i>	Rounded Noon-flower	Prostrate x 1m CA	919

Species Name	Common Name	Key	EVC Mosaic
<i>Drosera whittakeri</i> subsp. <i>Aberrans</i> *	Scented Sundew		719, 3
<i>Drosera peltata</i> subsp. <i>Auriculata</i> *	Tall Sundew		719, 892, 3
<i>Einadia nutans</i>	Nodding Saltbush	20cm x 1m HCDA	
<i>Enchylaena tomentosa</i>	Ruby Saltbush, Barrier Saltbush	Prostrate - 1m x 0.5-1m CD	
<i>Epilogium billardierianum</i>	Variable Willow-herb		707
<i>Frankenia pauciflora</i>	Southern Sea-heath	10cm x 50cm CD	
<i>Geranium solanderi</i>	Austral Cranesbill	20cm x 30cm HA	719, 3
<i>Gonocarpus humilis</i> (N)	Shade Raspwort		892
<i>Gonocarpus micranthus</i>	Creeping Raspwort	Prostrate x 50cm W	
<i>Gonocarpus tetragynus</i>	Poverty Raspwort	20cm x 30cm HA	3
<i>Goodenia hummilis</i>	Swamp Goodenia	5-10cm x .5-1.5m W	919, 707
<i>Goodenia geniculata</i>	Bent Goodenia	5-10cm x 10-50cm HA	
<i>Goodenia radicans</i>	Shiny Swamp-mat	10cm x 50cm CW	
<i>Gratiola pubescens</i> (N)	Glandular Brooklime	understorey herb	707
<i>Haloragis brownii</i> (N)	Swamp Raspwort	understorey herb	919, 921
<i>Hibbertia acicularis</i>	Prickly Guinea-flower	30cm x 50cm HD	
<i>Hydrocotyle laxiflora</i>	Stinking Pennywort	10-40cm x 1-2m HDW	719, 3
<i>Isotoma fluviatilis</i>	Swamp Isotoma	Prostrate x 1m W	
<i>Kennedia prostrata</i>	Running Postman	Prostrate x 1m HCD	
<i>Lachnagrostis billardierei</i> (S)	Coast Blown-grass		919
<i>Lagenophora stipitata</i>	Common Bottle-daisy	5cm x 20cm HCA	
<i>Laxmannia orientalis</i>	Dwarf Wire Lily	5cm x 10cm HD	
<i>Lobelia anceps</i>	Angled Lobelia	Prostrate x 50cm HW	919, 921
<i>Lobelia pratioides</i>	Poison Lobelia	Prostrate x 50cm HW	
<i>Opercularia ovata</i>	Broad Stinkweed	10cm x 20cm HA	
<i>Opercularia varia</i>	Variable Stinkweed		719, 3
<i>Orndullia reniformis</i> (syn <i>Villarsia reniformis</i>)	Running Marsh flower		707
<i>Pelargonium australe</i>	Austral Stork's-bill	50cm x 50cm CA	
<i>Pelargonium inodorum</i>	Kopata	30cm x 30cm HA	
<i>Pimelea humilis</i>	Common Rice-flower	30cm x 40cm HA	
<i>Pimelea octophylla</i>	Woolly Rice-flower	0.4-1m x 20-50cm HD	
<i>Platylobium obtusangulum</i>	Common Flat-pea	40cm x 1m HD	892
<i>Platysace heterophylla</i>	Slender Platysace	30cm x 30cm HDW	










Species Name	Common Name	Key	EVC Mosaic
<i>Podotheca angustifolia</i>	Sticky-Long Heads	2 - 30cm high HD	
<i>Poranthera microphylla</i>	Small Poranthera		719, 3
<i>Pterostylis longifolia</i>	Tall Greenhood		719, 3
<i>Pteridium esculentum</i>	Austral bracken		919, 719, 892, 921, 3
<i>Sarcocornia quinqueflora</i>	Beaded Glasswort or Samphire	Prostrate x 50cm CW	919, 921
<i>Senecio minimus</i> (S)	Shrubby Fireweed	Understorey Herb	919, 921
<i>Stylidium graminifolium</i>	Grass Trigger-plant	30cm x 30cm HDW	
<i>Tetragonia implexicoma</i>	Bower Spinach	Prostrate x 1m CA	919, 921
<i>Tetragonia tetragonioides</i>	New Zealand Spinach	Prostrate x 1m CA	
<i>Thysanotus patersonii</i>	Twining Fringe-lily	0.1 - 1m HD	
<i>Thysanotus tuberosus</i>	Common Fringe-lily	15-60cm x 15-20cm HD	
<i>Tracymene composita</i>	Wild Parsnip	0.8-1.5 x 0.5-1m HD	
<i>Triglochin proceum</i>	Water Ribbons	Understorey graminoid	707
<i>Viola hederacea</i>	Ivy-leaf or Native violet	10cm x 1m HCWSh	919, 719, 921, 3
Small to Medium Trees (5m - 10m)			
<i>Acacia implexa</i>	Lightwood	8m x 4m HShA	
<i>Acacia mearnsii</i>	Black Wattle	7m x 4m HCD	719, 3
<i>Acacia melanoxylon</i>	Blackwood	8m x 5m HWA	719, 3
<i>Allocasuarina littoralis</i>	Black She-oak	8m x 3m HDSH	719, 3
<i>Allocasuarina verticillata</i>	Drooping She-oak	8m x 3m CD	
<i>Bursaria spinosa</i>	Sweet Bursaria	6m x 3m HCA	
<i>Leptospermum laevigatum</i>	Coast Tea-tree	6m x 3m CDA	919, 921
<i>Melaleuca ericifolia</i>	Swamp Paperbark	5m x 2m HCDWA	
Large trees			
<i>Banksia integrifolia</i>	Coast Banksia	15m x 6m CD	919, 921
<i>Eucalyptus camaldulensis</i>	River Red Gum	30m x 20m HA	
<i>Eucalyptus melliodora</i>	Yellow Box	20m x 10m HA	
<i>Eucalyptus ovata</i>	Swamp Gum	20m x 15m HW	707
<i>Eucalyptus pauciflora</i>	Snow Gum or White Sallee	10m x 6m HA	
<i>Eucalyptus viminalis</i> ssp <i>pryoriana</i>	Coast Manna-gum	15m x 10m HCD	919, 719, 892, 3
<i>Eucalyptus radiata</i>	Narrow-leaf Peppermint	15m x 10m HD	892
Small Shrubs (50cm - 2m)			

Species Name	Common Name	Key	EVC Mosaic
<i>Species name</i>	Common name	Key	
<i>Acacia brownii</i>	Heath Wattle	1m x 1m HD	
<i>Acacia longifolia</i>	Coast wattle		919, 921
<i>Acacia suaveolens</i>	Sweet Wattle	2m x 2m HD	
<i>Acacia ulicifolia</i>	Juniper Wattle	1m x 1m HW	
<i>Allocasuarina paradoxa</i>	Green She-oak	1.5m x 1.5m HDSH	3
<i>Aotus ericoides</i>	Common Aotus	1m x 1m HWD	
<i>Atriplex cinerea</i>	Coast or Grey Saltbush	2m x 2m CD	
<i>Bossiaea cinerea</i>	Showy Bossiaea	1m x 1m HCD	
<i>Correa alba</i>	White Correa	1m x 1m CA	
<i>Correa reflexa</i>	Common Correa	1m x 1m HShA	
<i>Daviesia ulicifolia</i>	Gorse Bitter-pea	1m x 50cm HA	
<i>Dillwynia cinerascens</i>	Grey Parrot-pea	.6-1.5m x .5-1.5m HD	
<i>Dillwynia glaberrima</i>	Heath or Smooth Parrot-pea	1m x 50cm HDSH	719, 892, 3
<i>Epacris impressa</i>	Common Heath	1m x 50cm HA	719, 892, 3
<i>Goodenia ovata</i>	Hop Goodenia	1m x 1m HCA	
<i>Gompholobium huegelii</i>	Common Wedge-pea	0.3-1m x 0.3-1m HDSH	
<i>Hibbertia fasciculata var. prostrata</i>	Stalked or Bundled Guinea-flower	50cm x 30cm HD	892
<i>Hibbertia riparia</i>	Erect Guinea-flower	50cm x 50cm HA	719, 3
<i>Hibbertia sericea</i>	Silky Guinea-flower	30-100cm x 60cm HD	
<i>Isopogon ceratophyllus</i>	Horny Cone-bush	20-60cm x 0.5-1.2m HD	
<i>Lasiopetalum baueri</i>	Slender Velvet-bush	1m x 1m CDA	
<i>Leptospermum myrsinoides</i>	Heath or Silky Tea-tree	1.5m x 1m HA	719, 892, 3
<i>Leucophyta brownii</i>	Cushion Bush	50cm x 50cm CD	919
<i>Leucopogon virgatus</i>	Common Beard-heath	50cm x 50cm HD	719, 892, 3
<i>Monotoca scoparia</i>	Prickly Broom-heath		892
<i>Myoporum petiolatum</i>	Sticky Boobiolla	1.5m x 1.5m CA	
<i>Olearia ramulosa</i>	Twiggly Daisy-bush	1.5m x 1m HD	
<i>Pimelea humilis</i>	Common Rice flower		719, 3
<i>Rhagodia candolleana subsp. candolleana</i>	Seaberry Saltbush	1m x 2m CA	919, 921
<i>Ricinocarpus pinifolius</i> *	Wedding Bush	1-3m x 1-2.5m HD	
<i>Sambucus gaudichaudiana (N)</i>	White Elderberry		919, 921

Species Name	Common Name	Key	EVC Mosaic
<i>Suaeda australis</i>	Austral Seablite	50cm x 50cm CW	
Medium to Large Shrubs			
<i>Acacia sophorae</i>	Coast Wattle	4m x 4m CA	
<i>Acacia oxycedrus</i>	Spike Wattle	4m x 3m HWA	
<i>Acacia paradoxa</i>	Hedge Wattle	3m x 2m HCA	719
<i>Acacia stricta</i>	Hop Wattle	4m x 2m HCSHA	
<i>Alyxia buxifolia</i>	Sea Box	2m x 2m CD	
<i>Banksia marginata</i>	Silver Banksia	5m x 3m HDA	719, 892, 3
<i>Cassinia aculeata</i> (S)	Common Cassinia		719, 3
<i>Cassinia longifolia</i>	Long-leaf Cassinia	2-4m x 2-3m HDSH	
<i>Exocarpos cupressiformis</i> *	Cherry Ballart		719, 3
<i>Indigofera australis</i>	Austral Indigo	2m x 1.5m HA	
<i>Kunzea leptospermoides</i>	Yarra Burgan	3m x 2m HA	
<i>Leptospermum continentale</i>	Prickly Tea-tree	3m x 2m HWA	719, 892, 707, 3
<i>Leucopogon parviflorus</i>	Coast Beard-heath	3m x 2m CD	919, 921
<i>Melaleuca squarrosa</i>	Scented Paperbark	3m x 1.5m HW	
<i>Myoporum insulare</i>	Common Boobialla	5m x 3m CA	
<i>Olearia axillaris</i>	Coast Daisy-bush	2m x 2m CD	
<i>Olearia glutinosa</i>	Sticky Daisy-bush	2m x 2m CD	
<i>Ozothamnus ferrugineus</i>	Tree Everlasting	3m x 2m HWA	
<i>Pomaderris paniculosa</i>	Shining Coast Pomaderris	2m x 1.5m CDA	
<i>Solanum laciniatum</i>	Large Kangaroo Apple	2m x 2m HCA	
<i>Viminaria juncea</i>	Golden Spray	4m x 2m HA	

Seaberry Saltbush	Rounded Noon-flower	Bower Spinach
		
Common Wallaby-grass	Beaded Glasswort	Cushion Bush
		
Knobby Club-sedge	Tangled Bedstraw	Coast Blown-grass
		

Bundled Guinea-flower	Heath Tea-tree	Common Flat-pea
 A photograph of a Bundled Guinea-flower, showing a dense cluster of small, bright yellow flowers on a green stem, growing in a rocky, leaf-littered environment.	 A close-up photograph of a Heath Tea-tree, showing several small, white, five-petaled flowers with prominent green centers, clustered together on a branch.	 A photograph of a Common Flat-pea, showing several bright yellow flowers with dark markings on their petals, growing on a stem amidst dry twigs and small stones.
Zig-zag Bog-sedge	Tassel Rope-rush	Shade Raspwort
 A photograph of a Zig-zag Bog-sedge, showing a single, upright stem with several small, green, pointed leaves emerging from a dark, segmented base.	 A photograph of a Tassel Rope-rush, showing a cluster of brown, elongated, tassel-like structures hanging from a green stem.	 A photograph of a Shade Raspwort, showing a curved stem with several small, reddish-purple flowers or buds.
Small Grass-tree	Red-fruit Saw-sedge	Broom Spurge
 A photograph of a Small Grass-tree, showing a tall, cylindrical, light-colored inflorescence (seed head) with many small, white flowers, set against a background of dry grass.	 A photograph of a Red-fruit Saw-sedge, showing a dense clump of green grass-like leaves with a prominent, dark, reddish-brown inflorescence.	 A close-up photograph of a Broom Spurge, showing a cluster of small, white flowers on a green stem, with long, narrow green leaves visible in the background.

Running Marsh-flower	Centella	Swamp Goodenia
		
Glandular Brooklime	Pithy Sword-sedge	Soft Twig-rush
		
Variable Willow-herb	Water Ribbons	Prickly Tea-tree
		

Native and Exotic Species List

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 also utilises various native and exotic plant species as part of its Annual Tree planting program, as listed in the Street and Park Tree Management Policy.

Native Species List

Botanical name	Common name
Climbers and Scramblers	
<i>Muehlenbeckia adpressa</i>	Maidenhair Vine
<i>Pandorea spp.</i>	Wonga Wonga Vine
<i>Hibbertia scandens</i>	Climbing Guinea Flower
<i>Clematis microphylla</i>	Small leaved Clematis
<i>Kennedia spp.</i>	Dusky Coral Pea
<i>Hardenbergia comptoniana</i>	Native Wisteria
<i>Cissus antarctica</i>	Kangaroo Vine
<i>Jasminum suavissimum</i>	Native Jasmine
<i>Gynochthodes jasminoides</i>	Jasmine Morinda

Botanical name	Common name
Groundcovers, Grasses <1m	
<i>Acacia SPP.</i>	Wattle
<i>Acacia spp.</i>	Prickly Wattle
<i>Allocasuarina spp.</i>	Sheoak
<i>Alyxia buxifolia</i>	Sea box
<i>Anigozanthos spp.</i>	Kangaroo Paw
<i>Aotus ericoides</i>	Common Aotus
<i>Atroplex cineria</i>	Coast Saltbush
<i>Austrostipa stipiodes</i>	Prickly spear-grass
<i>Banksia spp.</i>	Banksia
<i>Boronia spp.</i>	Boronia
<i>Brachyscome spp.</i>	Cut-leaved daisy
<i>Bursaria spinosa</i>	Sweet Bursaria
<i>Callistemon sp.</i>	Bottle Brush
<i>Calothamnus sp.</i>	One-sided bottlebrush
<i>Carpobrotus sp.</i>	Pigface
<i>Chamelaucium spp.</i>	Geraldton Wax

<i>Einadia nutans</i>	Nodding Saltbush
<i>Gompholobium huegelii</i>	Common Wedge-pea
<i>Goodenia ovata</i>	Hop Goodenia
<i>Hardenbergia spp.</i>	Purple coral pea
<i>Hibbertia fasciculata var. prostrata</i>	Bundled Guinea-flower
<i>Indigofera australis</i>	Austral Indigo
<i>Juncus pallidus</i>	Pale Rush
<i>Stylidium graminifolium</i>	Grass Trigger-plant
<i>Wahlenbergia spp.</i>	Native Bluebell
<i>Xerochrysum</i>	Everlasting Daisies
<i>Eremophila spp.</i>	Emu Bush
<i>Lechenaultia spp.</i>	Blue Lechenaultia
<i>Lomandra spp.</i>	Spiny-head Mat-rush
<i>Pycnosorus spp.</i>	Billy Buttons



Cut Leaved Daisy



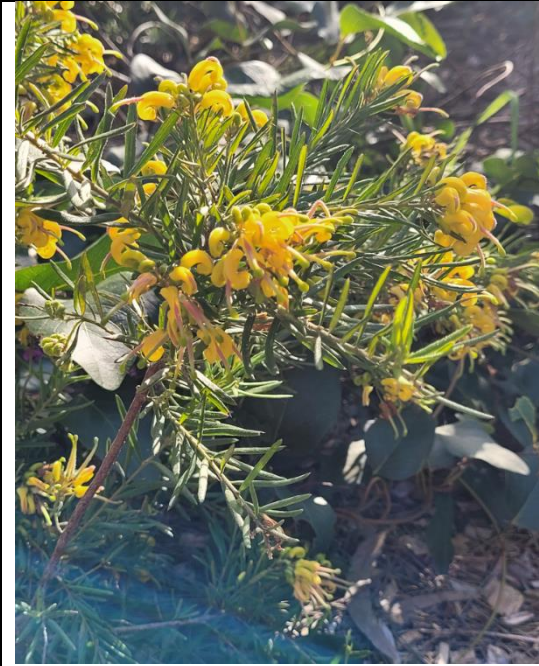
Geraldton Wax



Grevillea



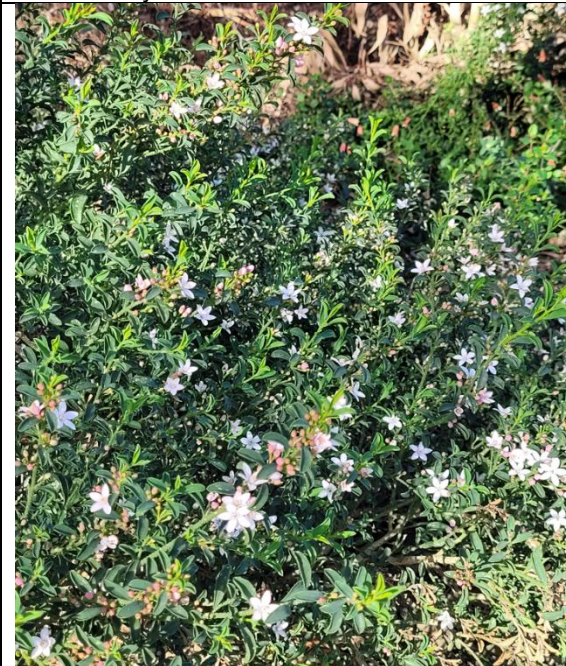
Native Fuchsia



Grevillea hybrid



One sided bottlebrush



Long Wax Flower



Sasparilla vine

Botanical name	Common name
Native plants 1m - 5m	
<i>Banksia spp.</i>	Banksia
<i>Brachychiton 'cultivars'</i>	Kurrajong or Bottletree
<i>Eucalyptus spp.</i>	Gum trees
<i>Corymbia cultivars</i>	Flowering eucalyptus
<i>Ficus microcarpa var hillii</i>	Laurel fig
<i>Ficus virens</i>	White fig
<i>Hakea spp.</i>	Needle bush
<i>Kunzea ericoides</i>	White tea tree
<i>Leptospermum spp.</i>	Tea tree
<i>Melaleuca spp.</i>	Paperbark
<i>Olearia axillaris</i>	Coast daisy bush
<i>Grevillea spp.</i>	Grevillea
<i>Tristaniopsis spp.</i>	Kanooka or Water Gum
<i>Melaleuca spp.</i>	Tea tree
<i>Correa spp.</i>	Native Fuscia
<i>Crowea spp.</i>	Waxflower
<i>Myoporum spp.</i>	Boobialla
<i>Olearia ramulosa</i>	Twiggy Daisy-bush
<i>Prostanthera spp.</i>	Mintbush
<i>Westringia spp.</i>	Native Rosemary
<i>Philotheca spp.</i>	Long leafed wax flower
<i>Buddleia spp.</i>	Butterfly bush
<i>Kunzea spp.</i>	kunzea
<i>Olearia</i>	Daisy-bush
<i>Dianella spp.</i>	Blue flax lily
<i>Aloygne spp.</i>	Native Hibiscus

Botanical name	Common name
Native trees >5m	
<i>Acacia spp.</i>	Wattles
<i>Acmena spp.</i>	Lilipilli
<i>Agathis robusta</i>	Kauri
<i>Agonis flexuosa</i>	West Australian Weeping Peppermint
<i>Allocasuarina spp.</i>	She Oaks
<i>Angophora spp.</i>	Flowering Eucalypts
<i>Araucaria spp.</i>	Australian conifers
<i>Banksia spp.</i>	Banksia
<i>Brachychiton spp.</i>	Kurrajong or Bottletree
<i>Callistemon spp.</i>	Bottlebrush
<i>Casuarina spp.</i>	She Oaks
<i>Corymbia spp.</i>	Flowering Eucalypts

<i>Cupaniopsis anacardioides</i>	Tuckeroo
<i>Elaeocarpus reticulatus</i>	Blueberry Ash
<i>Eucalyptus spp.</i>	Gum trees
<i>Ficus spp.</i>	Fig trees
<i>Flindersia australis</i>	Australian teak
<i>Geijera parviflora</i>	Wilga
<i>Grevillea hilliana</i>	Grevillea tree
<i>Grevillea robusta</i>	Grevillea tree
<i>Hymenosporum flavum</i>	Native frangipani
<i>Lophostemon confertus</i>	Qld Brush Box
<i>Lophostemon confertus Variegatus</i>	Variegated Qld Brush Box
<i>Macadamia integrifolia</i>	Macadamia
<i>Melaleuca spp.</i>	Paperbark
<i>Melia azedarach</i>	White cedar
<i>Melia azedarach 'Elite'</i>	White cedar
<i>Pittosporum spp.</i>	Australian laurel
<i>Podocarpus spp.</i>	Plum pine
<i>Stenocarpus sinuatus</i>	Firewheel tree
<i>Syncarpia glomulifera</i>	Turpentine tree
<i>Syzygium paniculatum</i>	Brush cherry
<i>Taxandria juniperina</i>	Native cedar
<i>Waterhousea floribunda</i>	lilipilli
<i>Wollemia noblilis</i>	Wollemia pine



Kurrajong cultivar



Eucalyptus



Flowering Gum



Hakea



Tuckeroo



Lemon Scented Gums



Dwarf Eucalypt



Banksia

Exotic Plant List

Botanical Name	Common Name
Ground cover & Grasses <1m	
<i>Abelia sp.</i>	Abelia
<i>Achillia spp.</i>	Yarrow
<i>Argyranthemu spp.</i>	Daisies
<i>Blechnum spp.</i>	Silver Lady – dwarf tree fern
<i>Bromeliads spp.</i>	Bromeliad
<i>Buxus sempervirens suffruticosa</i>	Dutch box
<i>Canna spp.</i>	Canna Lily
<i>Clivia spp.</i>	Bush lily
<i>Convolvulus spp.</i>	Bindweed
<i>Coprosma spp.</i>	New Zealand laurel
<i>Daphne spp.</i>	Daphne
<i>Escallonia spp.</i>	Apple Blossom
<i>Hebe spp.</i>	Emerald Green Hebe
<i>Hemerocallis spp.</i>	Daylily
<i>Liriope spp.</i>	Lilyturf
<i>Lithodora spp.</i>	Purple gromwell
<i>Nandina domestica</i>	Heavenly Bamboo
<i>Nuphar japonica</i>	Japanese Pond Lily
<i>Nymphoides indica</i>	Water Snowflake
<i>Orontium aquaticum</i>	Golden Club
<i>Phlebodium spp.</i>	'Davana'
<i>Plectranthus spp.</i>	Little Spurflower
<i>Rhaphiolepis spp.</i>	Oriental Pearl
<i>Sagittaria spp.</i>	Arrowhead
<i>Salvia spp.</i>	Sage
<i>Sedum spp.</i>	Stonecrop
<i>Senecio spp.</i>	Groundsel



Red Hot Pokers



Box



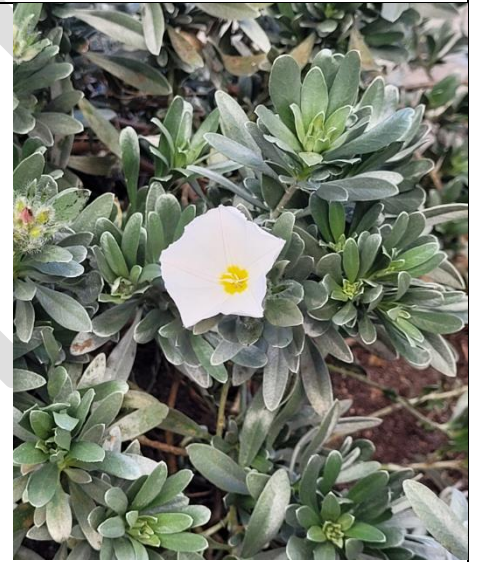
Camellia



Daphne



Liriope



Bindweed



Salvia



Indian Hawthorn



Arrowhead

Botanical Name	Common Name
Midstory Canopy 1m – 5m	
<i>Aeonium spp.</i>	Saucer plant
<i>Aloe spp.</i>	Aloe Vera
<i>Buxus spp.</i>	Box
<i>Camellia spp.</i>	Camellia
<i>Centranthus spp.</i>	Valerian
<i>Chamaemelum spp.</i>	Camomile
<i>Choisia spp.</i>	Mexican Orange Blossum
<i>Cistus spp.</i>	Rock-rose
<i>Cotinus spp.</i>	Smoke bush
<i>Cotula spp.</i>	Buttonweed
<i>Cotyledon spp.</i>	Succulents
<i>Dracaena spp.</i>	Dragon trees
<i>Echium spp.</i>	Pride of Madeira
<i>Euphorbia spp.</i>	Spurge
<i>Gardenia spp.</i>	Gardenia
<i>Helichrysum spp.</i>	Everlasting
<i>Hibiscus spp.</i>	Hibiscus
<i>Hypericum spp.</i>	St John's wort
<i>Juniperus spp.</i>	Junipers
<i>Lavandula spp.</i>	Lavander
<i>Myrtus communis</i>	Common myrtle
<i>Osteospermum spp.</i>	African Daisies
<i>Phlomis spp.</i>	Jerusalem sage
<i>Phormium tenax & cultivars</i>	Flax
<i>Phormium tenax & cultivars</i>	New Zealand Flax
<i>Pinus spp.</i>	Pine trees
<i>Rhododendron spp.</i>	Azalea & Rhododendron varieties
<i>Rosa spp.</i>	Species Roses
<i>Rosa x hybrida</i>	Hybrid Tea Roses
<i>Rosemary officinalis</i>	Rosemary
<i>Sedum spp.</i>	Stonecrops
<i>Stryletzia spp.</i>	Bird of Paradise
<i>Thymus spp.</i>	Thyme

Botanical Name	Common Name
Canopy Tree >5m	
<i>Abies spp.</i>	Fir
<i>Acca spp.</i>	Feijoa
<i>Acer spp.</i>	Maple species and cultivars
<i>Afrocarpus falcatus</i>	Common Yellow
<i>Arbutus unedo</i>	Strawberry tree

<i>Betula spp.</i>	Birch
<i>Catalpa spp.</i>	Cigar tree
<i>Cedrus spp.</i>	Cedar
<i>Celtis occidentalis</i>	European nettle tree
<i>Celtis occidentalis</i>	Common Hackberry
<i>Cercis siliquastrum</i>	Judas Tree
<i>Cupressus spp.</i>	Cypress
<i>Fraxinus spp.</i>	European Ash
<i>Ginkgo biloba</i>	Ginkgo
<i>Gleditsia triacanthos var.inermis Varieties</i>	Honey locust
<i>Jacaranda mimosifolia</i>	Jacaranda
<i>Juniperus spp.</i>	Junipers
<i>Lagerstroemia spp & cultivars</i>	Crepe Myrtle
<i>Liquidambar spp.</i>	Sweet gum
<i>Maclura pomifera</i>	Osange Orange
<i>Magnolia spp.</i>	Magnolia
<i>Malus spp.</i>	Apple
<i>Morus alba Pendula</i>	Mulberry
<i>Olea europaea</i>	Olive
<i>Phoenix canariensis</i>	Canary Date Palm
<i>Picea spp.</i>	Spruces
<i>Pinus spp.</i>	Pine trees
<i>Pistacia chinensis</i>	Chinese pistacia
<i>Platanus orientalis</i>	Oriental Plane
<i>Platanus X acerifolia</i>	London Plane
<i>Prunus spp.</i>	Plum
<i>Pyrus spp.</i>	Pear
<i>Quercus spp.</i>	Oak
<i>Sapium sebiferum</i>	Chinese Tallow
<i>Sophora japonica</i>	Princeton Upright
<i>Taxodium distichum</i>	Bold Cypress
<i>Tilia spp.</i>	Basswood
<i>Trachycarpus fortunei</i>	Windmill Palm
<i>Ulmus spp.</i>	Elm
<i>Washingtonia filifera</i>	Dessert fan palm
<i>Washingtonia robusta</i>	Mexican Fan Palm
<i>Zelkova serrata</i>	Green Vase



Maple



Honey Locust



Cedar



Ash



Maidenhair tree



Osage orange



Magnolia



Pine



Chinese pistachio

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'.⁹

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.¹⁰

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.¹¹

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.¹²

Climate change adaptation is the process of adjustment to actual or expected climate and its effects.¹³

Climate change mitigation is the human intervention to reduce the sources or enhance the sinks of greenhouse gases.¹³

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.¹³

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.¹⁴

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.¹⁵

⁹ 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>

¹⁰ 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/>

¹¹ 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>

¹² 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_140920_for_web.pdf

¹³ 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

¹⁴ Bayside Sustainable Building and Infrastructure Policy (updated 2021)

¹⁵ 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

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.¹⁶

Habitat: All the physical and biological things that collectively make up the place where a plant or animal lives.¹⁷

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.¹⁸

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 5.¹⁹

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.²⁰

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.²¹

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.²²

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.¹³

¹⁶ 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

¹⁷ 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

¹⁸ 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

¹⁹ 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

²⁰ 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

²¹ DELWP, 'Land for Wildlife' available at: <https://www.wildlife.vic.gov.au/protecting-wildlife/land-for-wildlife>

²² 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-rgz/>

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.²³

Senescence is the process by which cells irreversibly stop dividing and enter a state of permanent growth arrest without undergoing cell death.²⁴

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.²⁵

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.²⁶

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.⁶

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.⁶

Urban Heat Island Effect: The phenomenon of dense urban areas having significantly warmer air and land surface temperatures than surrounding areas.⁶

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.⁴

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.²⁷

²³ Id community, 'Demographic Resources', Available at <https://profile.id.com.au/bayside/seifa-disadvantage-small-area?WebID=10>

²⁴ CSIRO Linked Data Registry, 'Definition of Senescence', Available at <http://registry.it.csiro.au/def/keyword/nature/subjects/senescence>

²⁵ 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

²⁶ 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

²⁷ 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>

Vulnerability: Exposure to contingencies and stress, and the difficulty in coping with them. This can apply to ecosystems, trees, people, and places.²⁸

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.²⁹

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²⁸ GreenFacts, 'Vulnerability (in ecosystems)', available at: <https://www.greenfacts.org/glossary/tuv/vulnerability-ecosystems.htm>

²⁹ Melbourne Water, 'Introduction to WSUD', available at: <https://www.melbournewater.com.au/building-and-works/stormwater-management/introduction-wsud>



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