



Urban Forest Strategy

2024 to 2040

Healthy, biodiverse, connected.



Acknowledgement of Country

Council respectfully acknowledges the Traditional Owners of this land, the people of the Kulin Nation. We pay our respect to their Elders, past and present. We acknowledge and uphold their continuing relationship to this land.



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1. Executive Summary

Council's vision

In the City of Port Phillip, urban greening is healthy and abundant, biodiversity is valued and supported, and nature connects community.

Our urban forest principles

Informed by the Port Phillip community, we have five shared principles that guide our priorities for urban forest action.

Collectively with Council, community and industry partners:

1. We retain trees first, respecting established character, and adapt by adding more **resilient** plant species where they are most needed to reduce heat and flood vulnerabilities.
2. We work **together** to value, protect, grow and care for healthy and sustainable greening everywhere.
3. We prioritise **biodiversity**, supporting healthy ecosystems and creating habitat.
4. We invest in thriving **integrated** urban greening in streetscapes, buildings, parks and gardens.
5. We value the urban forest as a long-term asset that is critical to the health and wellbeing of our community and to our City's character and function, through **quality** design, construction and maintenance.

What is the urban forest?

The urban forest is all the trees and plants on public and private land throughout our city. Collectively, these green spaces enhance the sustainability and liveability of the City of Port Phillip.



Front and back gardens



Balconies, green roofs and walls



Community gardens and plots



Street trees



Boulevards



Trees in parks and reserves



Activity centres



Biodiversity links



Street gardening



Cultural sites



Heritage sites



Iconic planting



Foreshore and hinterland



Schools



State Government land (rail, roads etc)



New developments

Why is it important?

Plants and trees are critical infrastructure – like roads and buildings – and deliver significant benefits to our people, nature and economy.

People in greener cities are happier, healthier, more active and more connected. In greener cities, water is cleaner and flood risks are lower. Air is cleaner, and temperatures cooler. Biodiversity, habitat and local food production are supported. House prices increase, energy and infrastructure costs reduce, local businesses thrive, and jobs are created. Carbon is sequestered, and climate change risks are mitigated.

Cities with ample greening are more resilient, prosperous, and enjoyable places to live.

City of Port Phillip’s urban forest today

The City of Port Phillip attracts millions of visitors each year to its historic parks, iconic foreshore, and tree-lined boulevards. Notable trees include the culturally significant Ngargee Tree, historic Canary Island Date Palms along the foreshore, and London Plane Trees shading wide boulevards. The urban forest includes precious remnant vegetation on the foreshore and hinterlands, new biodiversity links, nature strips, productive community gardens and private gardens, all enriching the city’s ecological, cultural and heritage value.

Understanding our urban forest now, and how it is changing over time, guides our principles, objectives and actions. In 2022, Port Phillip had a tree canopy cover of 17.17%, down by 0.69% from 17.86% in 2012. Canopy is not evenly distributed among the city’s nine neighbourhoods, as illustrated below.

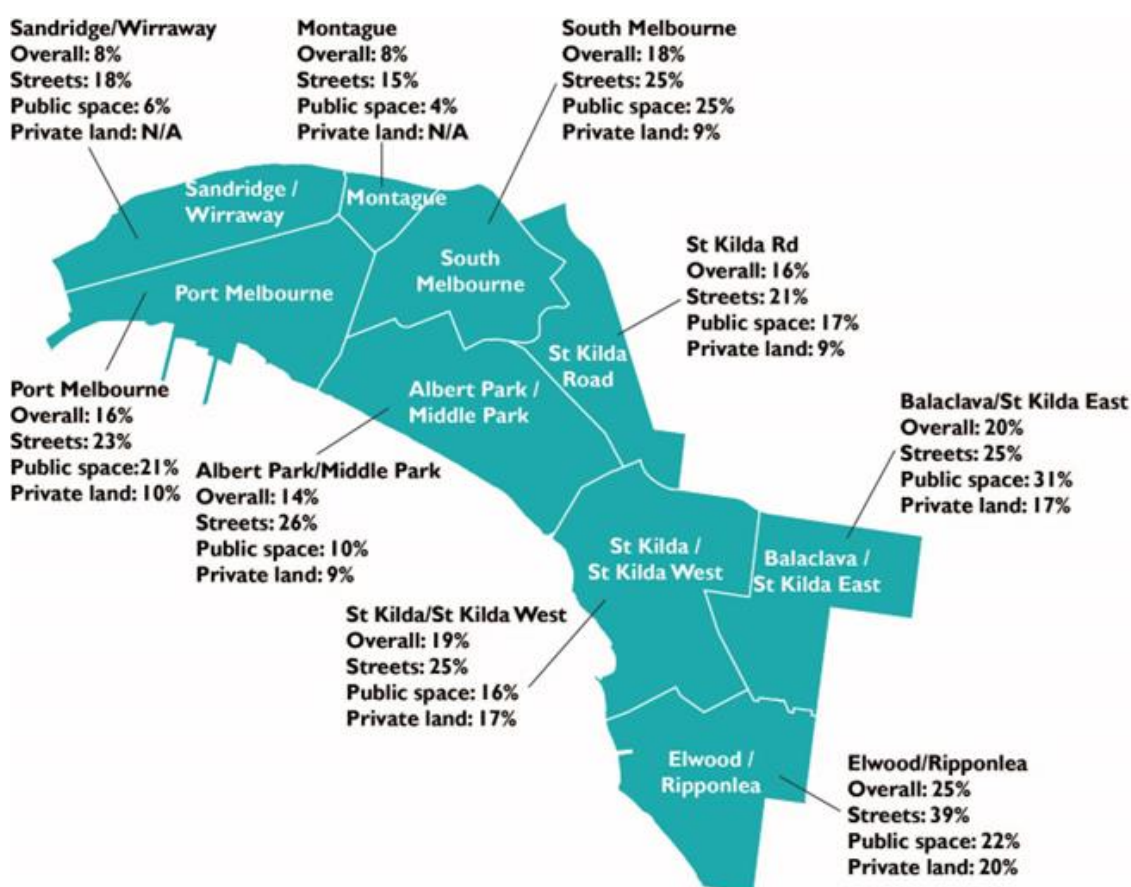


Figure 1: Canopy cover distribution across the nine neighbourhoods of the City of Port Phillip, 2022.

The City of Port Phillip manages approximately 46,000 trees, 75% of which are street trees. Overall tree diversity is generally good, but there are known risks to some of the city’s most iconic species, including English Elms, Canary Island Palms and London Plane Trees.

The biodiversity values remaining in the City are significant and require protection and enhancement. There are six remnant vegetation sites, including Coastal Dune Scrub and Grassy Woodland Plains ecosystems. There are over two thousand indigenous flora and fauna species, including many rare and threatened species. Little Penguins, Rakali (water rats), Puff Ball and Green-staining Coral fungi, Murnongs (yam daisies) and Hairy Spinifex are among the flagship species in the city.

What are we aiming to achieve together?

Our urban forest contributes to Council’s vision of a **Sustainable Port Phillip**. Our community benefits from living in a bayside city that is green, cool, clean and climate resilient.

Key challenges for the urban forest in Port Phillip are climate change, population growth and higher density living, constrained spaces, urban forest health and biodiversity loss. We understand these challenges, and our actions are designed to minimise their impacts.

Effective urban forest management is a shared responsibility, involving residents, schools, community groups, businesses, developers, industry, and all levels of government. By working together, we will get the best result for our urban forest’s future.

We want to protect the greening we already have, help it thrive, and take practical action to expand our urban forest within the complexities of our urban environment.

The objectives of this strategy are:



Increased canopy cover on public and private land for a liveable, sustainable, equitable and vibrant city.



A cooler and greener city, which is resilient to more severe weather and changes in rainfall.



Our community is engaged, trees and plants are valued, and we build partnerships to green our urban environment across all land types.



A well-managed forest, including healthy trees and tree quality, pest and disease management and succession planning for iconic species and locations.



A biodiverse urban forest with diverse species, healthy ecosystems, and habitat.

Actions and implementation

The Urban Forest Strategy gives Council an integrated, long-term framework to guide the ongoing planning, provision, protection, integration, and management of the urban forest across Port Phillip, so it can grow and thrive into the future.

Timeframes

This strategy builds on existing work and ongoing actions that contribute to the 2040 vision and introduces new actions to be completed by 2030. Our objectives and actions are nested under the 2040 vision and principles, in three five-year cycles. Our first action cycle is 2024-2029. We will review progress every five years to ensure continued alignment with our vision and current challenges.

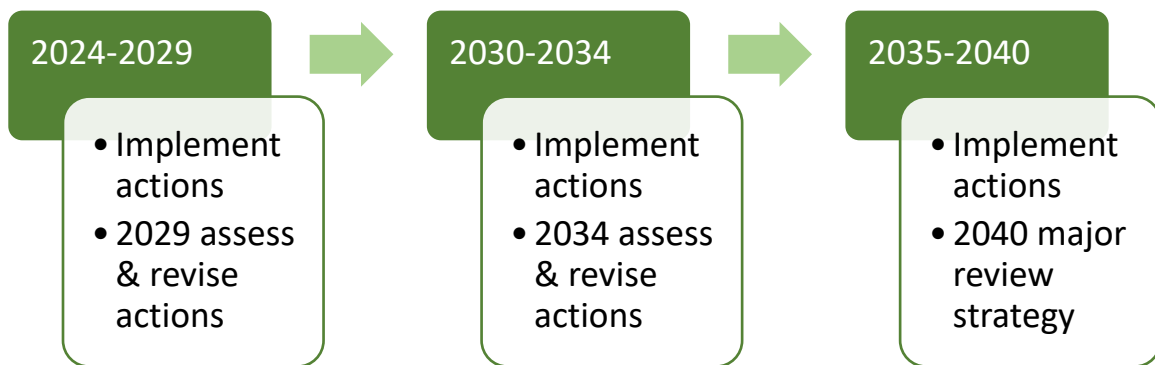


Figure 2: Urban Forest Strategy will be implemented with five year cycles of action reviews.

Resourcing

Implementation of the strategy is dependent on annual budgeting processes.

Monitoring

Council will monitor and report its progress in delivering this strategy every year. Tree canopy, biodiversity and urban heat data will be collected and reported every five years, and other measures will be monitored and reported annually. Targets for the first action cycle (2029) are:

Objective	Measure	2029 Target
Increased canopy cover	% canopy cover – overall	18 %
	% canopy cover – streets	26 %
	% canopy cover – private land	Maintain
	% canopy cover – public space	30 %
	% canopy cover – neighbourhoods	Increase
	# new canopy trees planted per year	Increase to 1,500/year
	# vacant street tree plots	Decrease
Cooler & greener	% high heat vulnerability areas with cooling and greening interventions	100 %
	m ² increase in permeable surfaces	Add 19,000 m ²
Engaged community	# case studies of community-led initiatives	Ongoing
	# and type of Council-supported community activities	Ongoing
Well-managed	Diversity rating of public tree species	Good to Fair
	% Council trees assessed as healthy	85 %
	% survival rate of new trees (at 2 years old)	85 %
	% Date Palm Management Plan actions on track	90 %
Biodiverse	# biodiverse plantings per year	50,000
	m ² native vegetation sites	Add 8,200 m ²
	# remnant flora sites	Maintain 6

What actions will we deliver?

Priority actions are essential to achieving our 2040 vision, and are aligned to the key challenges facing our city now. Our 21 new and 21 ongoing actions are summarised below.

- Plant more street trees and find more space to green streets, including by repurposing and depaving roads, enlarging tree plots and expanding nature strips
- Develop urban forest precinct plans for all neighbourhoods, prioritising equity and heat resilience
- Future-proof the urban forest, using succession planning and a new planting palette that ensures resilient and diverse species selection; and develop specific management plans for iconic Palm and Plane trees.
- Work with State Government to enhance greening in Albert Park, Fishermans Bend, along main roads, and in other State managed spaces
- Protect canopy by bundling electrical cables where possible
- Map and expand biodiversity and habitat corridors, with a focus on planting locally indigenous species and linking up corridors
- Protect and enhance greening on private land through planning tools, guidance, incentives, and partnering with developers
- Leverage capital works to deliver more greening, including over pedestrian and bike links, parks and reserves and streetscape upgrades
- Increase permeability and optimise irrigation and water use
- Use plants to remediate contaminated soil
- Enhance weed management
- Strengthen responses to vegetation vandalism
- Keep supporting community gardens, nature strip gardening and home gardening
- Keep contributing to research projects, planting trials and citizen science projects
- Improve young tree care and vegetation maintenance
- Annually monitor and treat Council tree health and condition, with proactive pest and disease management
- Proactively manage the health of iconic species, Date Palms and Plane Trees and plan for the future of these species
- Set research-based canopy targets
- Regularly collect data to monitor tree canopy and inventory, biodiversity and urban heat

2. Introduction

The City of Port Phillip has had an Urban Forest Strategy since 2010. This has led the delivery of greening action, investment, research and planning to integrate greening into Council plans and operations. This new Urban Forest Strategy responds to the current context of key challenges and opportunities and implements best practice.

Urban forestry and urban greening are now recognised globally as a means to manage Urban Heat Island (UHI), water and water quality, to improve health and wellbeing outcomes, and as an important contributor for biodiversity, ecosystems and habitat. There has been an increasing focus on biodiversity and bio-links, more understorey plantings, engineered solutions for passive watering, increased soil volume for trees, greening on buildings, community-led projects and nature strip gardening.

Collectively, all trees and plants on public and private land make up our urban forest.

The urban forest offers a multitude of benefits to people, economies, and nature in cities. In greener cities, happiness, health, physical activity, and community connectedness are improved. Water use, stormwater management costs and flood risks are reduced. Air quality is better, and neighbourhoods are cooler. Soil productivity, local food security, and biodiversity improve. Urban forests sequester carbon, reduce emissions, and mitigate climate change risks.

We work in an urban context, and Port Phillip has an established urban forest. This comes with its own challenges - a growing population, higher density housing, powerlines, pollution, large vehicle movement, urban heat island, heat radiation, hard surfaces and shrinking backyards. All these things make it more difficult to grow an urban forest.

Protecting existing vegetation is just as critical as efforts to plant more. We have wonderful assets to build on, with established street canopy, passive watering, biodiverse corridors, nature strips, productive gardens, and significant community passion and involvement.

There are opportunities as we plant more trees and vegetation to make improvements to biodiversity, to address the effects of climate change including urban heat, to limit flooding, and to grow the canopy of our trees.

Informed by the Port Phillip community, this Strategy has set a shared vision for what we want to achieve for the urban forest in our City by 2040, and the principles, objectives and actions that will guide the work and decision-making of the City of Port Phillip for next five years to 2030.

In recent years, our **community has consistently raised greening as a major priority** for the City. Strong collaboration between Council, community, State Government and other stakeholders will be essential for success. Greening on private land will need to play a greater role in increasing the urban forest.

By delivering this plan together, we will work towards a healthy, biodiverse and connected urban forest. **There is still room to grow, and we will need to work together to green the City.**



3. What is the urban forest?

Collectively, all trees and plants on public and private land make up our urban forest. This includes trees, shrubs and groundcovers, in home gardens, on green roofs, walls and facades, on nature strips, medians and roundabouts, in parks and reserves, and in shopping strips, car parks, and industrial areas.

Taken together, these green spaces provide an essential balance to the highly urbanised environment of the City of Port Phillip and contribute to the liveability of the city in the long-term for residents and visitors alike.



Trees



Vegetation



Biodiverse planting



Green infrastructure – roofs, walls, WSUD

Urban forest management considers the role of both public and private vegetation in our urban city. It recognises that plants (especially trees) are critical infrastructure, providing a range of services in the same way as grey infrastructure, like buildings, roads, foot and bike paths, utilities, open spaces and activity centres.

The urban forest is the responsibility of the whole community. Council takes the lead in our municipality, while other stakeholders have an important role to play including residents, schools, community groups, developers, businesses, industry and State and Federal Governments. Working together, we will get the best result for our urban forest's future.

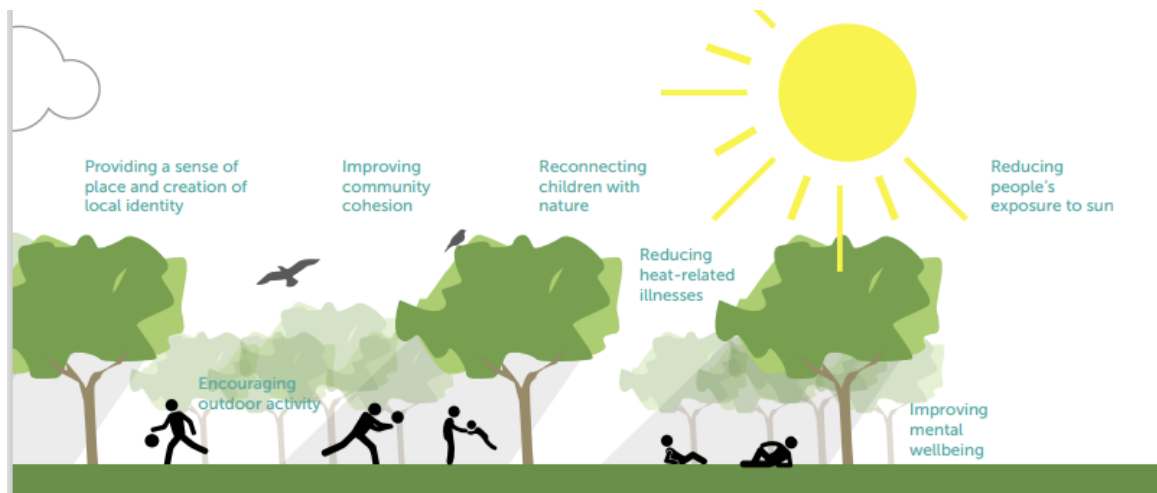
We want to protect the greening we already have, help it thrive, and take practical action to expand our urban forest within the complexities of our urban environment.

4. Why is the urban forest important?

Our diverse green spaces provide an essential balance to our highly urbanised environment. The urban forest directly impacts the City's liveability now, and into the future. There is a well-established body of evidence confirming the urban forest offers a multitude of benefits to people, economies and nature in cities.

Green cities promote greater happiness, health, physical activity, and community connectedness. Water is used as a valuable resource, and stormwater management costs and flood risks are reduced. Air quality is improved, urban heat is reduced, and there are more comfortable microclimates. Soil becomes more productive, and locally sourced food is produced. House prices increase, energy, and infrastructure costs are lowered, local businesses thrive, and jobs are created. Biodiversity is supported through the provision of habitat. Carbon is sequestered, greenhouse gas emissions are reduced, and climate change risks are mitigated.

Cities with ample greening are more resilient, prosperous, and enjoyable places to live.



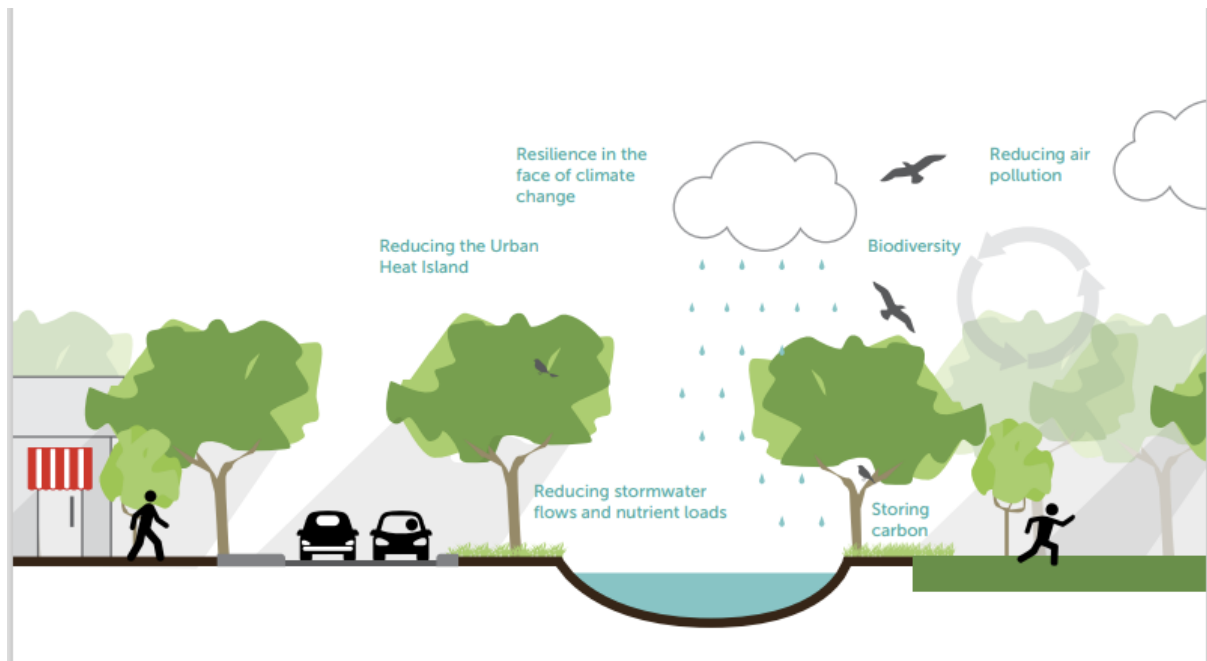


Figure 3: Benefits of urban forests

Importantly, urban forests have been recognised as the most cost-effective way to mitigate against localised risks from climate change. The latest Intergovernmental Panel on Climate Change (IPCC) report found that urban greening has been effective in reducing flood risks and urban heat.

Urban areas are hotter than surrounding rural areas because hard surfaces that are exposed to the sun absorb and radiate more heat. This 'urban heat island effect' exacerbates heat-related costs, mortality and other health impacts.

In 2018, the Victorian Government developed a heat vulnerability index (HVI) for Melbourne, to map the vulnerability of populations to extreme heat events. The HVI rating of each area is on a scale of 0 (low vulnerability) to 5 (high vulnerability), and is determined by three components: heat exposure; sensitivity to heat due to land cover, population density and age; and adaptive capacity (for example, socioeconomic advantage or disadvantage). The image below shows the index for Port Phillip.

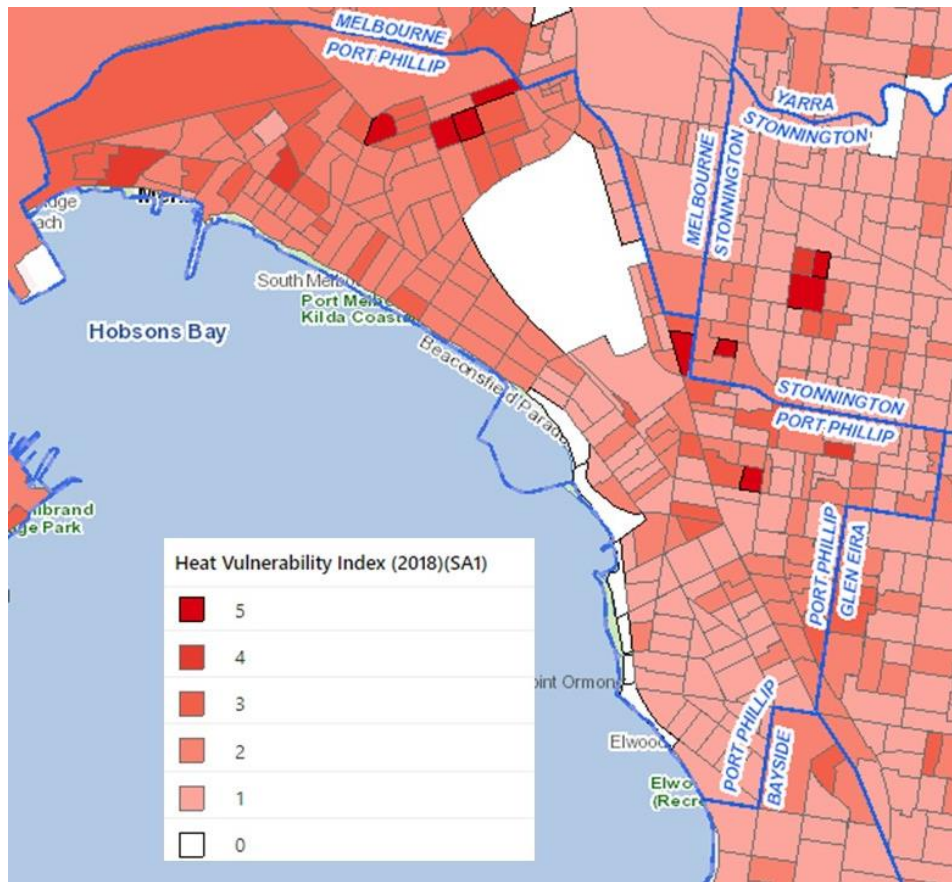


Figure 4: Heat Vulnerability Index, 2018 SA1 level. 5= higher vulnerability, 0= lower vulnerability (source: Department of Transport and Planning)

5. Urban Forest Strategy

5.1. What is an Urban Forest Strategy and why do we need it?

The Urban Forest Strategy 2024-2040 provides the strategic framework and policy context for the development and management of all greening across the municipality.

The Urban Forest Strategy is our vision and blueprint for enhancing our urban forest while mitigating the challenges it is facing. The strategy will inform ongoing planning and investment for the growth and longevity of our city's urban forest.

It is underpinned by Council's sustainability objectives in the Council Plan and has strong links to the *Places for People: Public Space Strategy 2022-2032*, the *Act and Adapt: Sustainable Environment Strategy 2023-28* and the *Places to Live: Port Phillip Housing Strategy*.

The strategy will be delivered over 15 years, through five-year action plans as follows:

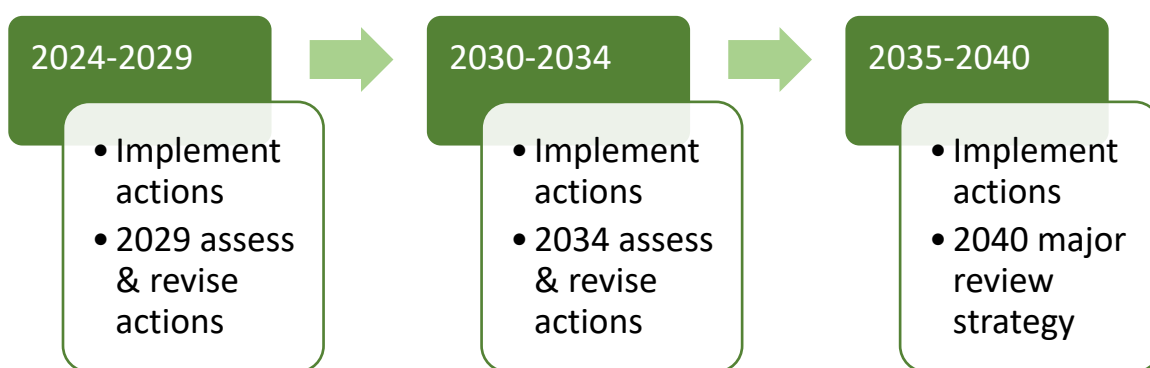


Figure 5: Urban Forest Strategy will be implemented with five year cycles of action reviews.

5.2. Strategic context

Urban greening has become well-integrated in local, regional, state, and global strategies and policies. These strategies include the United Nations Sustainable Development Goals, the Victorian Government's *Climate Change Act 2017*, *Biodiversity 2037 (2017)*, *Open Space for Everyone (2021)* and *Plan Melbourne 2017-2050*, and the City of Port Phillip's *Council Plan 2021-31*, *Places for People: Public Space Strategy 2022-32*, *Act and Adapt: Sustainable Environment Strategy 2018-28*, and *Move, Connect, Live: Integrated Transport Strategy 2018-2028*. They all seek to maximise the positive impact of urban greening through coordinated and strategic planning and management.

6. Current State of Our Urban Forest

A variety of green spaces contribute to the sustainability and livability of our City, including heritage parks, Botanical Gardens, tree lined streets, biodiversity areas, community gardens, private gardens and foreshore hinterlands.

Our urban forest varies across the municipality, with leafy green boulevards of London Plane Trees in Elwood and Middle Park, the conversion of former industrial areas in Fishermans Bend, the smaller street trees of Balaclava, the iconic heritage parks of St Kilda, the significant biolink in South Melbourne, and the Canary Island Palms of the foreshore.

Private gardens make up half of our urban forest. They play an essential part, contributing tree canopy, biodiversity and habitat, and providing amenity and other benefits to homes and neighbourhoods.

We have an active community interested in our urban forest including many environmental groups, naturalists and gardeners. These groups and individual community members are an important part of developing and maintaining the urban forest in Port Phillip.

Our urban forest is made up of:



Front and back gardens



Balconies, green roofs and walls



Community gardens and plots



Street trees



Boulevards



Trees in parks and reserves



Activity centres



Biodiversity links



Street gardening



Cultural sites



Heritage sites



Iconic planting



Foreshore and hinterland



Schools



State Government land (rail, roads etc)



New developments

6.1. Evidence base

The following reports and engagement have informed the development of this Strategy:

- *Background and Benchmarking Report 2023* - A detailed evidence base and context for our urban forest, including a summary of relevant research. Includes the strategic and policy context, community values, benefits of urban greening, a description of Port Phillip's urban forest, benchmarking against recent urban forest strategies, identification of best practice and emerging focus areas, and guidance on urban forest indicators and targets.
- *Canopy Mapping & Analysis 2012-2022* – Image processing technology using artificial intelligence has been used to map canopy now and establish a foundation for monitoring and improvement in future.
- *Vegetation in the Private Realm Report 2022*
- *Biodiversity Study and Action Plan Background Research Paper 2020*
- *Community engagement* – Working directly with key community stakeholders, advisory groups and the broader community
- *Traditional Owner conversations with the Bunurong Land Council.*

Engagement with Traditional Owners and the community will be ongoing, as we continue to deliver, review and improve our urban forestry.

6.2. Canopy

A common high-level indicator of the urban forest is tree canopy cover. Canopy cover creates benefits including improved amenity, urban cooling, carbon capture, stormwater benefits, and improved air quality.



Figure 6: Left: Canopy cover mapped across Elwood (Source: Tree Ledger 2022 canopy map). Right: Bird's eye photograph of Port Phillip's canopy.

Data

In 2023, the City of Port Phillip commissioned an assessment of both the current and historic tree canopy on private and public land from 2012 to 2022. The analysis measured tree canopy cover on roads, public land (parks and reserves managed by Port Phillip), Albert Park, and private land.

The study showed in the ten-year period of 2012 to 2022:

- A slight decline in canopy cover of 0.69%.
- Roads have a canopy cover of about 26%, well above the average for inner city Melbourne
- Most canopy gain was the growth of existing street trees
- Canopy in parks did not significantly change
- Tree removals on private land reduced the overall canopy cover by -1.09%
- More than half the canopy on private land was from new plantings over the 10 year period.

Canopy data in City of Port Phillip in 2022

- Overall tree canopy cover of the City of Port Phillip was 17.17% in 2022 (down from 17.9% in 2012)
 - public space 17% public space managed by Port Phillip makes up 12% of the land area of Port Phillip
 - streets 25%, streets make up 27% of the land area of Port Phillip
 - private land 12% private land makes up 49% of the land area of Port Phillip
 - Albert Park 16%.
- Canopy cover is not evenly distributed across neighbourhoods or land types
- The neighbourhood of Elwood/Ripponlea has the highest overall canopy cover at 25%
- Sandridge/Wirraway and Montague both have 8% canopy cover
- Private land makes up almost half the land area in Port Phillip but has the lowest level of canopy cover.

Australian researchers have found in numerous studies that a canopy cover of at least 30% results in higher health benefits.

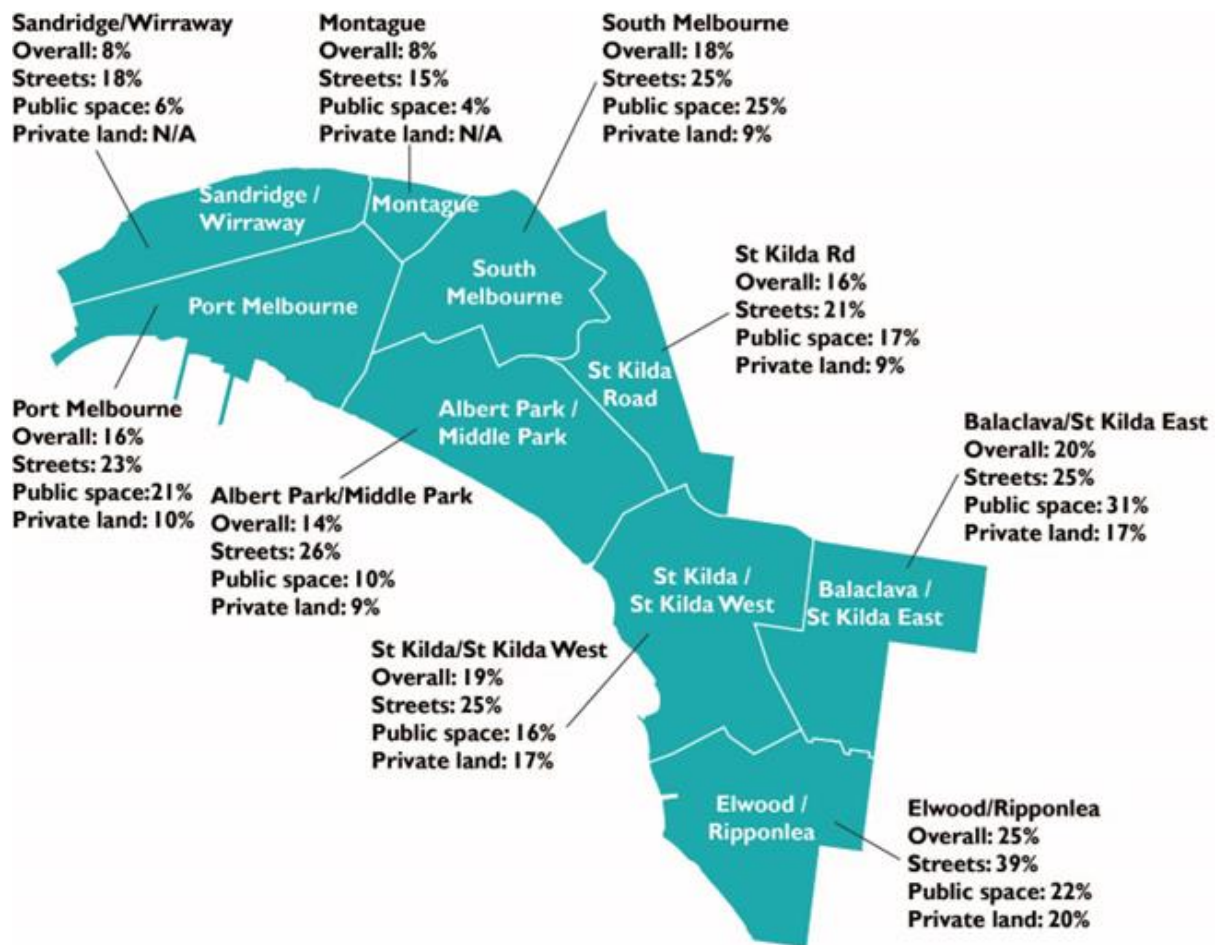


Figure 7: Canopy cover distribution across the nine neighbourhoods of the City of Port Phillip, 2022.

6.3. Species Diversity

In the public realm, the City of Port Phillip manages approximately 46,000 trees, 75% of which are street trees.

Having diverse tree species is important for a resilient urban forest. High diversity provides functional habitat and limits large loss of plants due to pests, diseases, or climate change. Urban forest health and survival can be at risk long-term if trees are not managed for ‘defensive diversity’ through a good mix of species and other factors.

Urban street trees planted in avenues are particularly susceptible to pests and diseases but are valued highly for their uniform look.

Getting the species diversity mix right is a balance between future proofing our urban forest, maintaining existing healthy trees, respecting heritage, and retaining a pleasant look and feel to the City.

The US Forest Service recommends a ‘good to fair’ diversity range of no more than 5-10% of a single species, 10-20% of a single genus and 15-30% of a single family.

Species diversity in City of Port Phillip in 2022:

- Species and genus diversity in the public tree population is generally good.

- Only one species, the London Plane Tree (*Platanus x acerifolia*), is above 5% of the total population.
- There are **34 native vegetation sites** (including bio-links).
- **There are six remnant vegetation sites** in the City.

London Plane Trees (*Platanus X acerifolia*) dominate the public realm, making up 9% of street and park trees. The next three most common species are the Queensland Brush Box (*Lophostemon confertus*), Coastal Banksia (*Banksia integrifolia*), and Drooping Sheoak (*Allocasuarina verticillata*) (each making up 4% of the street and park tree population).

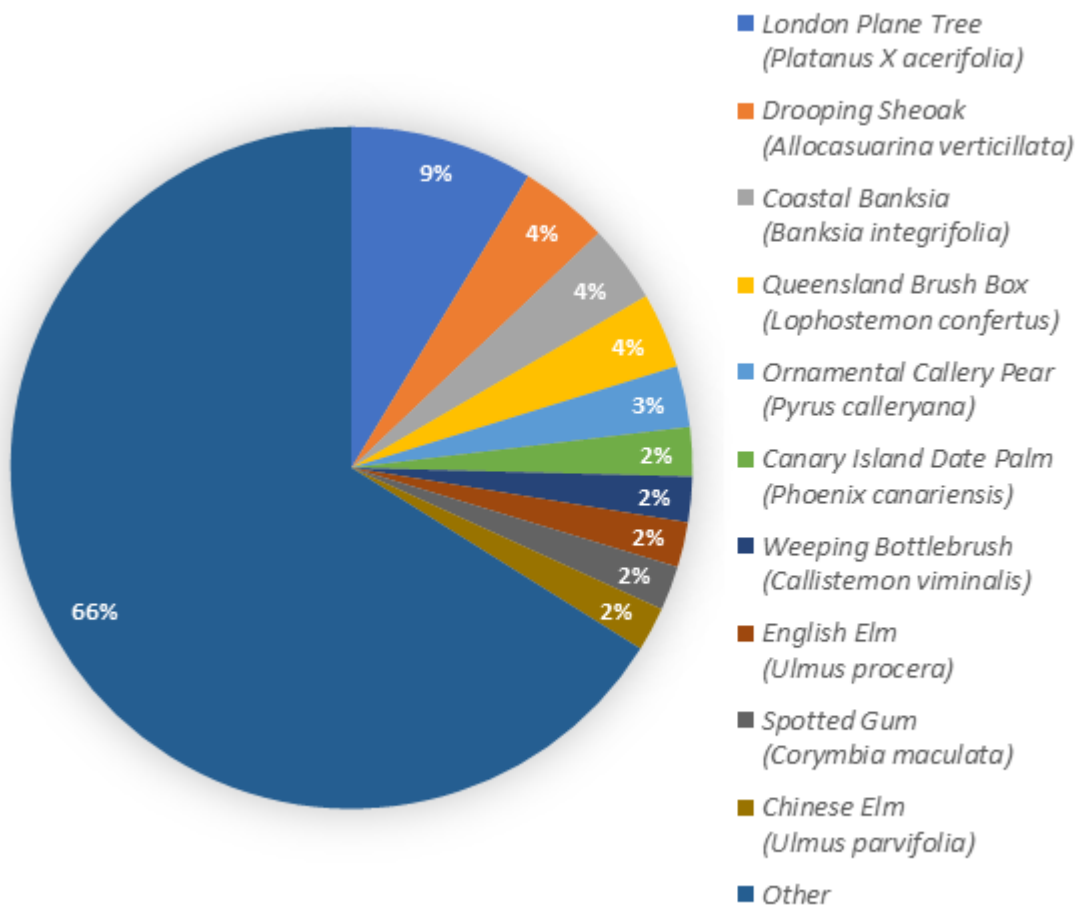


Figure 8: Diversity of tree species in the City of Port Phillip, 2022 (Source City of Port Phillip).

6.4. Ecosystems and biodiversity

Biodiversity is the variety of all plants, animals and microorganisms, their genes, and the ecosystems they live in across our land, rivers, and coast.

Biodiversity values within the City of Port Phillip are significant, albeit highly modified through urban development. Within the highly urbanised environment there is remnant native vegetation persisting, primarily restricted to the foreshore and a small number of parks and reserves. In these areas the biodiversity values remaining are quite significant and warrant protection and enhancement for future generations.

There are 34 sites with native and indigenous vegetation across Port Phillip. There are six sites with high value remnant vegetation classed as Coastal Dune Scrub and Grassy Woodland Plains:

- Sandridge Beach, Port Melbourne
- First Point, Port Melbourne
- West Beach, St Kilda
- Point Ormond Reserve, Elwood
- Elwood Foreshore
- Tea Tree Reserve, Elwood

Point Ormond Reserve in Elwood is particularly significant, as one of the last surviving indigenous remnants of Coastal Dune Scrub in urban Melbourne. In addition, HR Johnson Reserve, St Kilda Botanic Gardens, the Canterbury Road urban forest, Alma Park and Elwood Canal are highly modified sites with important indigenous vegetation values.

Through its ecological functions, biodiversity provides many benefits to the municipality. These include air and water purification, flood protection, coastal protection (eg. stabilising sand dunes), carbon sequestration, habitat and food for native animals, pollination, productive soils, natural pest control, and improved amenity.

This strategy aims to improve biodiversity values across the municipality, reversing the long-term downward trajectory.



Figure 9: Biodiverse sites across the City of Port Phillip

6.5. Community

When it comes to urban greening, the Port Phillip community is passionate, well-informed, highly engaged, and active on-ground. It is clear that, since Greening Port Phillip was released in 2010, parts of the community have increased their support for and expectations of urban greening, and have a high level of ambition to green the City. They also highly value the ability to proactively engage in improving the public realm through greening. They are a strength of the City and offer an opportunity for community partnerships to deliver common goals.

Community engagement to inform this strategy included community workshops in May and October 2023, and broader engagement in July and August 2023. Participants directly contributed to the vision, principles and actions in this Strategy. A further final broad community engagement was held in June and July 2024 to gain final feedback on the draft strategy.

Key themes raised in consultation as community priorities include:

- Supporting **community stewardship** or ‘mobilisation’ (including tree planting events, community gardens and nature strip gardening)
- Increasing permeability and becoming a **water sensitive city**
- Mitigating **urban heat**, using more shade trees
- Providing **more trees and vegetation**, including tree-lined streets, maximising greening in existing public space, and setting aside more land for public green space
- Enhancing **biodiversity**
- Increasing Council influence on **private realm** greening, including ensuring that housing provides for nature and gardening
- Balancing **on-street car parking provision** with tree planting
- Ensuring tree canopy is **equitable**, recognising that tree canopy differs between neighbourhoods and different approaches are needed to create more equitable canopy coverage
- **Planting trees** as fast as possible to establish canopy cover sooner
- Providing adequate **budget** allocations to support urban greening

There are diverse views and experiences of urban greening. In some cases, people feel differently about greening depending on its context – whether it is in their yard, the local park, or on their street.

During consultations, concerns regarding greening were also raised including:

- Impacts of roots – entering broken pipes or lifting footpaths
- Shading of solar panels
- Impacts of debris – fruits, flowers, leaves and pollen
- Risk of branch drop
- Impacts on views
- Differing feelings on aesthetics
- Tree and vegetation vandalism
- Impacts of greening on carparks, footpaths and bike lanes.

7. The challenges we face

Port Phillip's urban forest is diverse, and there is variation in canopy cover and biodiversity between neighbourhoods. The vision of a healthy and abundant urban forest requires action to increase canopy cover in some areas while maintaining excellent cover in others, and increasing biodiversity. There are some core challenges to overcome to ensure our urban forest flourishes everywhere and that all residents and visitors have access to the benefits the urban forest provides. The challenges our urban forest is facing fall under five themes:

- Climate change
- Population growth and higher density living
- Constrained space
- Forest health
- Biodiversity loss

These themes are explored below.

7.1. Climate change

The City of Port Phillip declared a climate emergency in 2019, recognising that everyone must play their part in addressing this global challenge. The City is already experiencing the impacts of climate change, and projections show increased risk of flooding, storm damage, foreshore inundation, water supply issues, and extreme heat. As the climate continues to change, cities are getting hotter. These effects interact with existing urban stresses such as air pollution, soil compaction and heat island effects.

Greening is an important tool to prepare our communities for these changed conditions, especially through urban cooling and flood risk reduction. Greening also plays a crucial role as a climate solution, by drawing down greenhouse gases from the atmosphere, providing comfortable streets to make walking and public transport use more enjoyable.

Urban Heat Island

It is hotter in metropolitan areas than in surrounding rural areas. This condition is called the urban heat island effect (UHI). UHI is greatly influenced by impermeable surfaces such as concrete, brick and asphalt that are exposed to the sun for extended periods, absorbing large amounts of heat. This can lead to higher temperatures (day and night), higher air pollution levels, increased electricity costs (e.g., air-conditioning) and heat related illnesses.

Urban areas are about 4 degrees (C) hotter than rural areas.

In the City of Port Phillip, the UHI effect is felt more in areas where there is limited tree canopy, large areas of impermeable surfaces, less vegetation and minimal chance of cooling breezes from the Bay. This applies to both the public realm and private property, with increased development also increasing the UHI.

Flooding and permeability

As a coastal municipality, Port Phillip is particularly vulnerable to the impacts of coastal inundation and flooding because of climate change. The rising sea levels, coupled with intensified rainfall and greater frequency of storm surges could have a substantial impact on the future development of Port Phillip. This particularly affects low-lying urban renewal areas like Fishermans Bend and

established regions like South Melbourne, Port Melbourne, Albert Park, Middle Park, St Kilda, Balaclava, and Elwood.

Susceptibility to climate change

Environmental changes will affect the ability of species to adapt and evolve, reside within ecosystems and migrate to more suitable environments. It is suspected that the drying climate will be challenging for the survival of some canopy tree species, others will be impacted by rising sea levels (above and below ground) through inundation and greater salinity in groundwater.

As foreshore habitats become too hot or inundated with flooding, some fauna may not survive as they will be unlikely to be able to migrate further inland due to the presence of existing buildings and infrastructure.

Trees are long-lived assets, so tree populations need to be diverse and well-managed to resist extreme heat, drought, pests and diseases. As climate change intensifies, young trees and plants may take longer to reach maturity, and trees and vegetation may become increasingly stressed. Stressed trees require more care. Managing tree health is critical, and Port Phillip will continue to develop climate ready species selection and management practices in response.

Water management

A key element in the success of tree growth is the amount of water the tree receives in its first few years of establishment. After that, the tree should have well-developed roots and be self-sufficient. Trees can also require supplementary water in prolonged droughts or if stressed, for example during a disease outbreak.

Other vegetation types including shrub beds and turf have higher water requirements, and many plants indigenous to Port Phillip require more water, as the city used to have significant floodplains prior to urban settlement.

Water management includes strategies to reduce water use, use recycled and non-potable water where possible, and prioritise water where it is needed.

7.2. Population growth and higher density living

The City of Port Phillip continues to be the most densely populated local government area in Victoria with a population density of 5,029 people per square kilometre.

High density apartments, with three or more storeys, make up 55.5 per cent of our housing stock, four times that of greater Melbourne. 35.5 per cent of our housing stock is medium density (semi-detached, row or terrace houses, town houses and 1-2 storey flats or apartments). Separate houses make up just 7.7 per cent of the housing stock. Almost all housing development approvals in 2021 (99 per cent) were for new apartments.¹

By 2036 we expect our population to grow significantly by another 43,510 people. As more people live in apartments, parks are replacing backyards, and public spaces are becoming the 'living rooms' where people meet and interact. Streets and parks will increasingly become central to the City's identity and character, with increased demand for opportunities for relaxation, recreation, social connections, and individual connections with nature. Streets and public spaces need to be accessible for all people of all abilities, and green spaces will need to work harder and be maintained more frequently (including nature strips and community gardens), increasing maintenance costs.

Over the past 10 years, as the city has continued to grow and densify, tree canopy cover on private land has decreased. This loss can be partly attributed to development pressure and the lack of vegetation protection overlays and orders within Port Phillip's Planning Scheme².

Tree canopy loss can occur on public and private land due to housing development. On private land, trees can be removed to make space for housing. Trees that have yet to reach the defined size for a significant tree (150cm trunk circumference, 1m above ground) are particularly at risk. Currently, significant trees on private land are protected under the Community Amenity Local Law No.3. If a resident wants to remove a significant tree or to cut, trim, prune or anything else that may result in the health of the significant tree being compromised, a permit from council must be obtained.

Charging an amenity valuation, for trees in streets and other public spaces that need to be removed to facilitate construction, was introduced in Port Phillip's first urban forest strategy Greening Port Phillip (2011). The value factors in the tree's biological, functional, and aesthetic characteristics within an urban landscape context. Any tree that is removed to facilitate development incurs a cost to cover the tree's removal and the purchase, planting and establishment costs of a replacement tree. The amenity value is only charged if a development requires the removal of a tree on public land with a diameter at breast height above 5cm. There are a range of options that can be considered for increased protection of vegetation within the private realm³. These include:

Statutory Options

- Policy
- Permit triggers
- Local Law

Non-regulatory Options

- Community Education & Awareness
- Internal processes
- Enforcement
- Data collection & monitoring
- Advocacy

Powerlines and other infrastructure located in the street may need be upgraded to supply higher density housing developments, and these upgrades can additionally affect trees. For example, if additional powerlines are required, the volume of space for tree canopy on streets is reduced and existing street trees need to be pruned or removed accordingly.

Many of Port Phillip's biodiverse areas are along the coastline. Port Phillip's coastal environment with wind, salt and exposure make it more difficult to establish vegetation on the foreshore. Trees and greening along the foreshore are also more likely to be opposed by residents, as they block views to the Bay. Trees along the foreshore are subjected to vandalism more than in any other area within the municipality. Urban development and aesthetic preferences have direct impacts to biodiversity with vegetation removal and habitat modification. Biodiversity can be further damaged by indirect impacts associated with pressures from human activities (e.g. trampling of dune vegetation), wildlife disturbance and predation by pet dogs and cats, weed and pest animal invasions (notably foxes) and litter including dog litter.

Many residents recognise greenery as the defining visual character of their neighbourhoods and see the great environmental benefits from trees and vegetation, from ground level gardens to green walls and roof top gardens and want to support improvements to biodiversity. Trees and plants need

soil, water, nutrients, space, air and light to grow and thrive. These can be hard to get in a dense inner urban environment.

7.3. Constrained urban spaces

Port Phillip has some of the most extensive heritage areas in Melbourne, with some of the earliest European settlement patterns and development. Our heritage and neighbourhood character are highly valued by our community and contributes to our sense of place. As an older municipality, a lot of streets in Port Phillip are narrow, have narrow footpaths, have no nature strip or narrow nature strips. The constrained space in some Port Phillip streets, particularly in St Kilda, East St Kilda and Balaclava are challenging to retrofit. Trees, nature strips, accessible footpaths, adequate road space, car parking and bike lanes **cannot** always be accommodated with smart streetscape design.

Planting trees in streets presents a variety of challenges. Given the varied development patterns throughout the City of Port Phillip a site-specific approach is required to deliver successful planting.

Site-specific challenges include:

- **Powerlines and tram lines:** Over half of Port Phillip's street trees are pruned around above ground power and communication cables. Council has legislative clearance requirements for trees around powerlines (*Electricity Safety (Electric Line Clearance) Regulations 2005* (Energy Safe Victoria)). This requires regular clearance pruning to attain required clearance distances.
- **Tree root management:** The conflict between tree roots and infrastructure and building foundations is pervasive in urban areas. A range of strategies need to be considered such as species selection and site assessment, root pruning and barrier placement to avoid or manage tree root conflicts with infrastructure.
- **Compacted, contaminated and poor soils:** Compacted and low-quality soils common within the urban environment, can severely impact tree growth. Much of the soil in Port Phillip is contaminated and poor quality due to imported fill as the area was developed. A range of treatments can be used to improve soils, manage contamination, and protect soils from future compaction.
- **Carparking and narrow streets:** In many urban streets it is not possible to increase planting without removing carparking. Sometimes on-road planting between car spaces is possible by locating trees in areas such as no standing zones and adjacent to crossovers. Any planting in streets needs to consider road safety and protection from vehicles.
- **Accessible footpaths:** The *Australian Disability Discrimination Act 1992* requires all public spaces to be accessible. Street trees can impact on accessibility where there is fruit drop, narrow footpaths, or where roots become invasive and interfere with footpaths.
- **Street safety:** Street trees are managed for safety and are pruned to ensure people can walk, drive and ride on streets safely. In line with the Local Law, residents are responsible for ensuring that pedestrian access to paths and traffic sight lines are not blocked by trees and vegetation on private property.
- **Underground utilities:** Underground utilities beneath roads, footpaths and parks include electrical, water and gas lines, communications cabling and drains, and electric vehicle charging stations. Trees can interfere with underground utilities and various regulations require offset distances between new tree planting and lines and service pits.

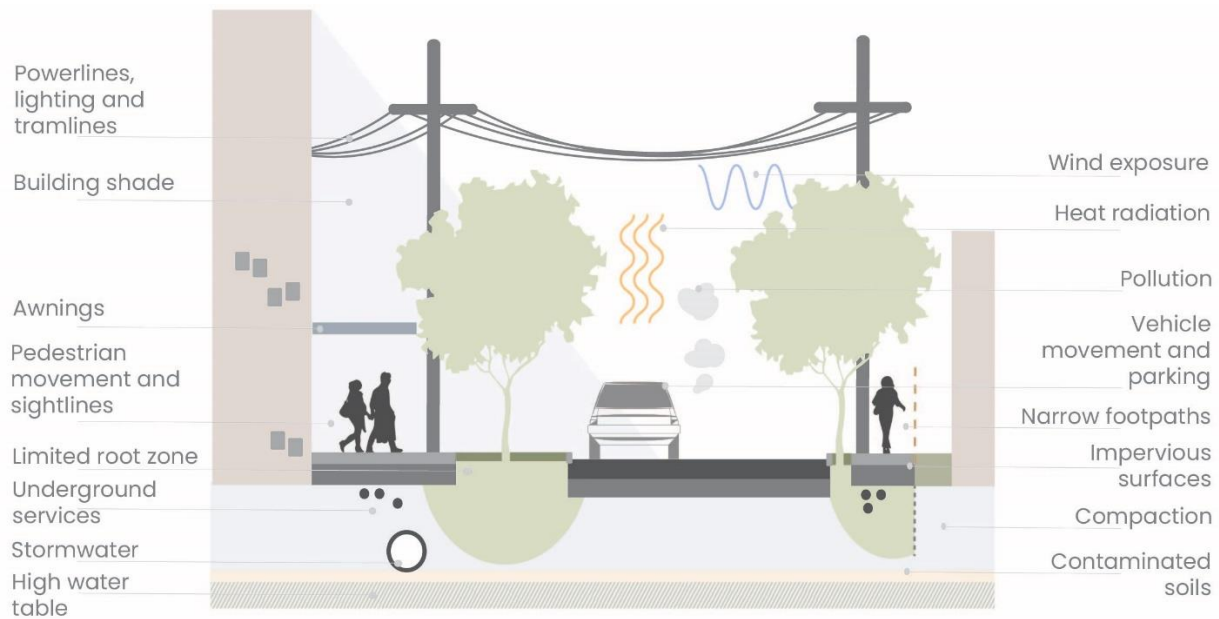


Figure 10: Common constraints for trees in the City of Port Phillip.

7.4. Forest and tree health

Urban forests need proactive management including good design, species selection, site and soil preparation, passive irrigation, young tree care, health audits, pest treatments, risk management, and other ongoing maintenance. Ensuring a mixture of species, age, sizes and functions, called ‘defensive diversity’ is also critical for urban forests to thrive as the mix means the forest is less susceptible to disease and climate threats, and tree replacement is gradual when trees come to the end of their useful life expectancy.

Tree diversity in Port Phillip is generally good, but there are a few areas which are at risk.

Tree life spans

As living infrastructure, trees take a long time to grow, and benefits peak once trees mature. Most of the costs are incurred early in the tree’s life, and when it reaches the end of its life. A healthy forest has trees of all ages and spreads out costs and management activities so they don’t all need to happen at once. While a key principle is to retain trees first wherever possible, mature tree replacement is an unavoidable part of managing living infrastructure. Succession planning for trees approaching the end of their useful life expectancy is prioritised to maintain and replace trees and the canopy cover they provide in streets, parks, and public space.

Tree management

Tree management is one of the key issues within public space from both an ecological perspective and from a public safety standpoint. Reasonable care is taken to manage the risks associated with hazardous trees. A tree risk management program provides a systematic process for scheduling and inspecting trees, enables the prioritisation of works based on perceived risk, and allows judicious use of community resources.

Threats to specific tree species

Various threats pose risks to some of Port Phillip's most iconic species. As the climate changes to warmer conditions, some species, like the English Elms planted in some parks, may struggle to cope and go into decline. Other species, including Canary Island Palms and London Plane Trees that contribute significantly to the character of Port Phillip's neighbourhoods, have more specific threats. Canary Island Palms line Beaconsfield Parade and the St Kilda foreshore and feature in Catani Gardens, areas loved as Melbourne's playground hosting local residents and visitors.

Plane Trees provide a green, leafy character, lining most streets in Elwood, and other some other avenues in the city including along St Kilda Road, Brighton Road, Williamstown Road, Richardson Street, Raglan Street and Barkly Street.

Serious management challenges exist for both species, and it is timely to consider how we manage their population to retain the iconic character and benefits these trees bring to our neighbourhoods. The challenges include disease, drought stress, infrastructure damage from tree roots, and electric line clearances impacting on the longevity of trees and integrity of avenue plantings. The future of these iconic species is linked strongly to the character of several neighbourhoods, and we will work with those local communities to find a way forward.

7.5. Biodiversity loss

The City of Port Phillip is heavily urbanised, with remnant native vegetation and biodiversity now largely restricted to the foreshore and a few parks and reserves. The State Government's *Protecting Victoria's Environment – Biodiversity 2037* report recognises that 'all Victorians enjoy the benefits of biodiversity, relatively few are fully aware of its importance, or are prepared to share the cost of – and responsibility for – sustaining it'. Biodiversity loss happens over time and therefore can be difficult to notice. The immediate cost of removing vegetation, like loss of species and habitat, is often hidden and the impacts are often thought to be a future concern. Climate change and population growth are realities in Port Phillip and are expected to exacerbate existing threats and bring new challenges for biodiversity.

Climate change

Climate change threatens Port Phillip's biodiversity in several ways:

- Rising sea levels, coastal inundation, flooding, and erosion will cause challenges for biodiverse coastal areas and rising ground water with increased salinity will impact on plant establishment and growth.
- Harsher environments with more warm days and heat waves, more storm events and different rainfall patterns will affect trees and vegetation and will result in more time and cost to establish and maintain plants (especially trees).
- Climate change will continue to affect native insects and fauna with changes to habitat and food sources, disease outbreaks and stresses from extreme weather events.

Human impacts

Humans are responsible for biodiversity loss. Most of the City of Port Phillip is highly modified from the floodplains, woodlands and coastal dune systems that existed prior to colonisation. Urbanisation results in novel urban ecosystems with indigenous, native and exotic plants, animals, insects and fungi and other microorganisms. Urban environments can be rich in biodiversity, but some challenges persist including:

- Significant soil modification and contamination throughout Port Phillip resulting in pockets with poorer soil health affecting vegetation growth and management.
- Population growth and increased density reduce space for private gardens and larger trees, increase use of public space, and constrain space for larger biodiverse areas. This reduces biodiversity corridors and links, making it harder for fauna to move between habitats. Higher pet dog and cat populations can impact on wildlife and dog litter can affect soils and spread disease.
- Urban coastal environments are highly modified and affect biodiversity on land and in the bay. Increased development and vegetation removal, tree vandalism, and formal monoculture planting styles reduce habitat opportunities, and coastal development and stormwater runoff can impact the marine environment.
- Exotic plants and animals can reduce biodiversity. While some weedy flowering plants can provide food and shelter supplementing indigenous and native plants, they can become invasive. Cats, foxes and Indian Myna birds also pose wildlife problems in Port Phillip.
- Pollution including car exhaust, noise and light pollution, and soil and groundwater contamination impact plants, insects and animals and prevent them from thriving.

8. Council's vision

Informed by the Port Phillip community, this strategy has a shared vision and five principles that guide our direction and priorities for urban forest action.

To keep our work on track towards our 2040 vision, our objectives and actions are nested under the vision and principles in three five-year blocks. Our first action cycle in 2024-2029, and we will review progress in 2030. We will use short- and long-term targets and measures to track our progress and achieve our 2040 vision.

8.1. Our 2040 vision

In the City of Port Phillip, urban greening is healthy and abundant, biodiversity is valued and supported, and nature connects community.

8.2. Our shared principles

Collectively with Council, community and industry partners:

1. We retain first, respecting established character, and adapt by adding more **resilient** plant species where they are most needed to reduce heat and flood vulnerabilities.
2. We work **together** to value, protect, grow and care for healthy and sustainable greening everywhere.
3. We prioritise **biodiversity**, supporting healthy ecosystems and creating habitat.
4. We invest in thriving **integrated** urban greening in streetscapes, buildings, parks and gardens.
5. We value the urban forest as a long-term asset that is critical to the health and wellbeing of our community and to our City's character and function, through **quality** design, construction and maintenance.

8.3. Objectives

The objectives align to the key challenges facing our city now.

Each objective has measures, target(s) and existing and new actions. Elements of urban forest management are intrinsically linked, and there is overlap between the objectives. Please refer to the table in section 10.1 for summary of how the targets and actions work together.

Our Objectives:

Increased canopy cover on public and private land for a liveable, sustainable, equitable and vibrant city.

Cooler and greener city which is resilient to more extreme weather and changes in rainfall.

Our community is engaged, trees and plants are valued, and we build partnerships to green our urban environment across all land types.

A well-managed forest, including tree health and quality, pest and disease management, and succession planning for iconic species and locations.

A biodiverse urban forest with diverse species, healthy ecosystems, and habitat.



9. Actions for growing our urban forest

Excellence in urban forest management requires a range of actions contributing to the same vision. This chapter details the actions that will be taken against each of the objectives, with measures and targets identified, linked to key principles and challenges that the actions are designed to address.

The actions in this strategy are developed to target areas of urban forest growth, management and maintenance that are essential to achieve our 2040 vision and objectives.

The strategy includes both actions underway now, and new actions to be completed between 2024 and 2030 financial years. The actions and objectives will be reviewed every 5 years to ensure we stay on track to deliver our 2040 vision.

Actions are a combination of:

- Direct on-ground greening (eg. expand habitat corridors)
- Enabling (eg. incentives for planting on private land)
- Policy and advocacy (eg. aerial powerline bundling, developing planning scheme amendments)
- Supportive (eg. review and improve establishment process for new vegetation),
- Strategic (eg. develop precinct plans to improve street tree planting outcomes).

This strategy builds on existing work and ongoing ‘business as usual’ activities that are crucial to achieving the vision. Examples include annual tree planting, the ongoing de-paving program, citizen science programs and ongoing tree and vegetation maintenance. Other crucial elements, such as water and public space management, are directed by other strategic documents and not covered here.

All actions are summarised in the Implementation Plan in section 10.

9.1. Increase canopy cover

Increased canopy cover on public and private land for a liveable, sustainable, equitable and vibrant city

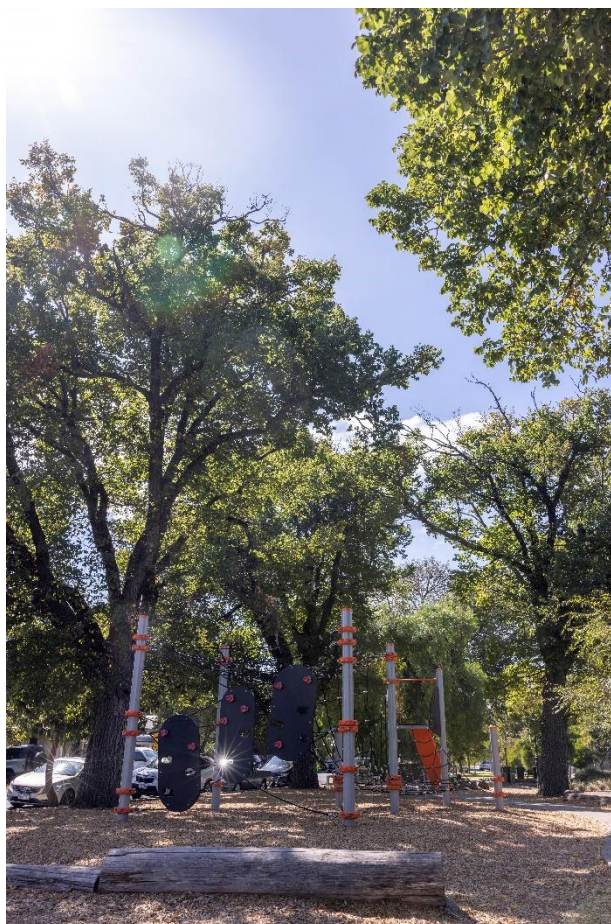
Strategic principles in planning for increased canopy cover		
Integrated	Resilient	Together

A common high-level indicator of the urban forest is tree canopy cover. Canopy cover creates benefits including improved amenity, urban cooling, carbon capture, stormwater benefits, and improved air quality.

Detailed canopy analysis was undertaken in 2023, using 2022 high-definition aerial photography. In 2022, 17.17% of Port Phillip was covered by canopy from trees that are greater than 3 metres in height. Tree canopy cover is not evenly spread across the city. There is a general north west to south east transition from 8% through to 25%

As outlined in Section 5.2, from 2012 to 2022 there has been a slight decline in canopy cover from around 17.9 percent to 17.2 percent.

We acknowledge there are gaps in the distribution of greening across our City, and we aim to achieve improved tree canopy in each neighbourhood and where we need it most. This may not look the same everywhere. Tree planting should address greening for climate adaptation and social equity, prioritising areas with lower access to public open space, heat vulnerability, lower canopy coverage, higher population density, key pedestrian and bike links, school walking routes, public transport, and activity centres. Greening approaches need to respond to different street spaces, soils, microclimates, and neighbourhood character to ensure long-term survival and optimised benefits from new plantings. In addition, we must work with developers on private land and other land holders to ensure canopy cover is improved throughout our city.



Due to influences outside the full control of Council and the need for more data, we are not in a position to set a specific target for overall canopy cover at this stage. However, we are targeting a canopy cover increase in each key measurement period on streets, public land and private land (around every 5 years).

Private land

The decline in canopy cover from 2012 was largely driven through a 1.1 per cent reduction in canopy cover on private land which comprises around 49% of total land area in the municipality. The data showed now there are sections of private space above 20% current cover. Efforts to increase coverage on public land were not sufficient to offset this.

On private land, building envelopes, built form and lot size will influence the availability of space to plant trees. Port Phillip has a prevalence of small lots, small garden areas and apartment buildings which restrict space for tree planting.

Arresting this decline through better protection of existing trees and encouraging new planting on private land is a key focus area. Some initiatives already in train include entering into a memorandum of understanding with the City of Melbourne to use their Green Factor Tool to guide the use of, and requirements for green roofs and walls in private developments where tree planting is not feasible and joining the My Smart Garden program to deliver a series of gardening workshops for residents in 2024

Streets

Overall, streets in Port Phillip have a canopy cover of about 26%, well above the average for inner city Melbourne, making street trees a fantastic asset of the city. Roads in Port Phillip make up about 27% of the total land area and contribute about 44% of total canopy cover.

To increase tree canopy cover on streets we need to plant more trees than we remove and ensure our trees have good early maintenance and remain healthy. We have set an aspirational target to grow our canopy cover on roads to 30% per cent – this requires further testing of feasibility which will be completed over the next 12 months.

When investigating targets for canopy cover, we need to consider how many trees we need to plant to reach a canopy target, and where there is space for additional tree planting. When planting on streets, considerations need to be given for driveways, narrow road reserves and footpaths and infrastructure. Powerlines also provide a barrier to protection of existing canopy and growth of canopy particularly given Electrical Line Clearance requirements.

Through smart planning and advocacy there is opportunity to grow canopy cover on our streets, including those managed by the State, through reducing the number of empty street plots and identifying opportunities for new planting.

Public space

Port Phillip has excellent canopy cover in many parks and reserves. While the overall canopy coverage of parks and reserves sits at 17.22%, that calculation includes sports fields and areas of open space that cannot be planted. When sports fields and other functional wide-open spaces like areas along the foreshore are excluded, canopy cover of public open space is 29%, with many public spaces exceeding 40% canopy coverage. *Places for People: Public Space Strategy (2022-2032)* proposes new public open spaces, including exploring land acquisition opportunities across Port Phillip and a Public Space Acquisition Plan is guiding land purchases.

However, there are opportunities to grow canopy cover on non-sports field public space including:

- new tree planting in parks and reserves and planning for tree removals and replacements
- as part of regeneration and renewal of existing public spaces
- on State controlled public spaces such as Albert Park Lake
- the smart development of new public spaces as part of our Public Space Acquisition Plan.

State Government Managed Land

There are large areas of State Government managed land that plays a role in enhancing canopy and greening across the municipality. This includes Albert Park Lake, Transport corridors (including Brighton Road, Beaconsfield Pde, tram and trainlines), Schools and the transformation of Fishermans Bend. This can be achieved through education, advocacy, policy, guidance, engagement initiatives and partnerships.

9.1.1. Measures, baselines, and targets

Canopy measurement is planned to take place around every five years (with the next captured in 2028, analysed in 2029) to inform development of each new five-year action plan. Annual reporting of lead measures such as number of new canopy trees planted will supplement canopy mapping.

Measure	Baseline (2022)	Target Short-term (2029)	Target Long-term (2038)
Percentage canopy cover - overall	17.17%	18%^	TBC #
Percentage canopy cover - streets (27% of all land)	25.53%	26%^	30%
Percentage canopy - private land (49% of all land)	12.45%	No reduction	No reduction
Percentage canopy cover - public space (17% of all land)	29.0%	30%^	40% canopy cover, no net loss of canopy at any individual park or reserve.
Percentage of neighbourhoods with improved canopy cover	From 2022 baseline	Increased from Baseline	Increased from 2033
Number of new canopy trees planted by Council per annum (annual measure)	800	1500*	TBC #
Number of street tree plots that are vacant (annual measure)	Establish in 2024 and set targets	Decreased from Baseline	Decreased from 2033

^ Initial canopy growth is slow as new trees take time to establish and grow.

*Tree planting numbers to be tested for potential extension after yr2.

Targets will be set alongside the development of the Urban Forest Precinct Plans.

9.1.2. Actions

Actions to achieve targets and objectives

	Action	Status
1	Improve delivery of Council's street and park tree replacement and infill tree planting program to better protect and increase canopy cover	Underway
2	Improve and increase Council's annual additional tree planting program to increase canopy cover [subject to \$]	Underway
3	Develop urban forest precinct plans for all neighbourhoods within the municipality to increase canopy and biodiversity (2-3 per annum)	New
4	Update Council's street tree planting guide to identify new planting locations prioritising heat vulnerability, areas with lower canopy coverage, population density, key pedestrian and bike links, access to schools, public transport, and activity centres, in line with the Public Space Strategy. Incorporate sites into urban forest precinct plans and annual tree planting program	Underway
5	Continue implementation of Council's Tree Canopy Protection Program including engineered solutions such cable bundling in response to Electrical Line Clearance regulations	Underway
6	Advocate to the Victorian Government to ensure appropriate consideration of canopy cover in Electrical Line Clearance Regulations and for funding to support engineered solutions that address safety while reducing negative impacts on canopy coverage	Underway
7	Advocate to Victorian Government and Parks Victoria to increase canopy coverage and biodiversity in Albert Park	New
8	Advocate to Victorian Government, including the Department of Transport, Parks Victoria, VicTrack, Southern Metropolitan Cemeteries Trust, and other agencies to increase maintenance, canopy coverage and biodiversity on state managed land in the municipality	New
9	Work with the Victorian Government and the City of Melbourne to develop and fund a greening strategy for Fishermans Bend	New
10	Undertake a spatial canopy and tree inventory analysis to measure canopy and identify areas of low canopy and underperforming tree stock, to be repeated every 5 years. In line with Act and Adapt Strategy	New
11	Undertake feasibility study to set a research-based canopy target to achieve on streets by 2040, with 30% canopy the ideal. Set overall tree canopy targets for 2040 as urban forest precinct plans are developed for each neighbourhood.	New
12	Prioritise greening, biodiversity and canopy trees in the development of newly acquired public space.	New
13	Develop processes to improve planning advice for trees and vegetation on development applications in accordance with statutory requirements.	New
14	Facilitate increase of canopy trees, and other type of innovative and resilient urban greenery in private developments via planning tools.	New
15	Protect significant trees and vegetation in private realm that are valued by communities, including large canopy trees and indigenous vegetation via suitable planning tools and develop clear guidelines for Significant Tree Removal applications under the Local Law.	Underway

Case Study

Street Tree Program

Between 2017 and 2022 over 5000 new trees were planted in areas with low canopy cover.



9.2. Cooler and greener city

Cooler and greener city which is resilient to more extreme weather and changes in rainfall.

Strategic principles in planning for a cooler and greener city		
Resilient	Biodiverse	Quality

By greening and cooling our municipality we are working to reduce the impacts of heat, protect and enhance biodiversity and improve the enjoyment of our open spaces. All this leads to a more liveable city.

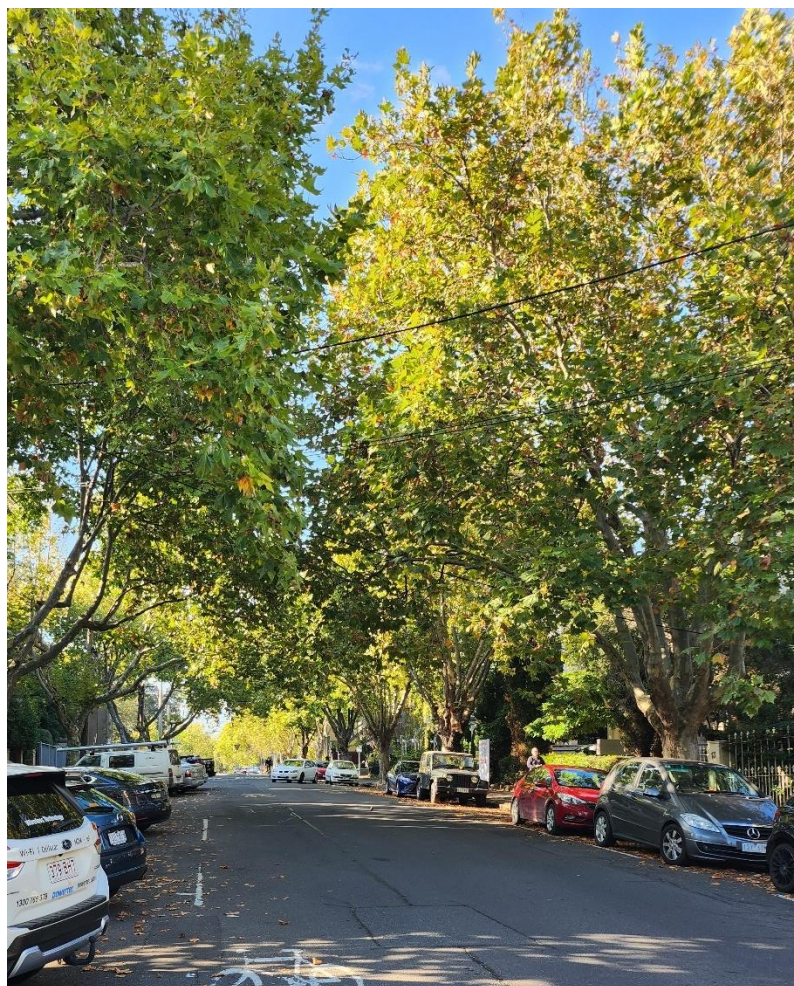
Port Phillip is already experiencing the impacts of climate change, and projections show increased risk of flooding, storm damage, foreshore inundation, water supply issues, and extreme heat. Focusing on the interrelationships between greening, water and temperature will help us to achieve a cooler, greener city where greening is equitable and is included where we need it most.

Urban Heat Island

In 2018 the State Government undertook heat mapping across the wider Melbourne region. This mapping shows that Port Phillip has nine areas which are rated in the two highest categories on the 'heat vulnerability index'. To mitigate urban heat, greening and cooling should be prioritised in areas where it will address the key factors of surface temperature (heat exposure), more vulnerable members of society (vulnerability to heat), and areas with high pedestrian activity (behavioural exposure).

Social justice is a critical greening issue because higher levels of disadvantage are generally correlated with lower levels of greening and higher levels of urban heat. As tree canopy mapping has improved, Councils have increasingly been overlaying social vulnerability and urban heat data on canopy data to better understand the priority areas to target more greening. In Port Phillip, our hotspots are generally around our public and social housing estates. We can provide greater equity by focusing on key pedestrian areas, to make walking, cycling, and catching public transport comfortable and to ensure our parks are cool and shady.

For targets, we want to focus on streets and parks as they are the areas where Council has most control and improve greater equity by:



- Focusing our tree canopy on key pedestrian areas so people can walk with comfort, particularly people who rely on public transport, who use community transport and for children along key school walking routes.
- Ensuring our neighbourhoods have cool, shady areas in parks and reserves. With good management including tree and vegetation planting, irrigation, and access to drinking water, these areas have the potential to become cool refuges during hot weather.
- Providing targeted interventions in areas with high heat vulnerability. Interventions need to be tailored to the area and could include additional street trees, rain gardens or introducing more permeable surfaces and planting.

Prioritising tree canopy and biodiversity

Implementing our actions under the Tree Canopy and Health and Biodiverse Urban Forest objectives will assist with addressing urban heat Island and supporting a cooler and greener city. However, there is an opportunity to amplify this through targeting initiatives towards integrated water management, increasing areas of green public open space and maintaining urban heat data.

Water and irrigation management

Water is a valuable resource and essential to the growth and health of an urban forest. An urban forest also plays an important part in managing storm water, filtering out pollution and reducing flooding risks.

Trees require regular watering to establish well. After their initial establishment trees should be self-sufficient and only rarely require supplementary watering, for example when under stress or during prolonged drought periods. Increasing the use of non-potable water, using passive irrigation in design and developing a new irrigation strategy are critical to ensuring Council's long term water management.

Permeability

Permeable surfaces allow water to infiltrate into the soil, reduces the amount of pollutants and runoff into the bay and waterways, reduces the flood risk and improves soil moisture critical for plant health and urban cooling.

Port Phillip is highly urbanised and as a result has a lot of impermeable surfaces both on public and private land. We can improve permeability by investigating areas where roads and footpaths can be reduced to include more permeable surfaces and greening. For example, by building on current footpath renewal programs to decrease asphalt and concrete and introduce new nature strips. The community is an important partner in this process, as they become custodians of these spaces.

Capital Projects

Every year the annual open space and recreation capital works program designs and delivers upgrades to playgrounds, parks, recreation reserves and other public space. Adopting an integrated approach where urban greening is embedded into our capital works programs across open space and recreation and other projects where applicable offers opportunities to improve the quality and quantity of open space, to improve biodiversity and canopy cover and to save costs through combined project management and construction.

9.2.1. Measures, Baselines and targets

We use heat mapping and a heat vulnerability index developed by the Victorian Government to track and assess urban heat within our municipality. This data provides a standardised dataset for all of Melbourne. Our measures are focused on taking action and tracking interventions we can make to alleviate the broader effects of urban heat using greening solutions.

Measure	Baseline	Target Short-term (2029)	Target Long-term (2039)
% of high heat vulnerability SA1 areas with cooling and greening interventions	Port Philip has 9 high heat vulnerability (level 4 and 5) SA1 areas	100% of high heat vulnerability areas have an intervention	Re-baseline in 2029
Deliver permeable surfaces through Council's (capital/ footpath) program (report annually)	Record meters squared for future target development	De-pave 19,000sqm of non-permeable surfaces	To be set in line with Act & Adapt

9.2.2. Actions

Actions to achieve targets and objectives

	Action	Status
16	Investigate locations where roads can be repurposed to increase greening, particularly in areas with lower canopy cover and where there are gaps in the public space network in line with the Public Space Strategy	Underway
17	Develop a new irrigation strategy to guide decision making on optimising potable water use for irrigation in parks, gardens, reserves, and for trees. In line with the Public Space Strategy and Act and Adapt	New
18	Plan for integrated water management and deliver projects that increase use of non-potable water, in line with the Public Space Strategy	Underway
19	Work towards improving permeability through capital projects; leveraging footpath renewal program to develop new nature strips where appropriate, increasing nature strip planting (including developing standard designs and processes) and enlarge street tree plots; and developing permeable targets in line with Act and Adapt.	Underway
20	Maintain heat mapping and solar analysis data in line with Act and Adapt .	New
21	Consider the delivery of urban forest outcomes in the scope and budget for all open space and recreation outdoor capital works programs, especially provision for nature play, planting around playgrounds, near seating and BBQ areas. Action to include the development of associated project target and tracking tools.	New

Case Study

Moubray Street Community Park

This community park was once a road. First established 2013 this popular park is now being transformed into a permanent reserve. The new park includes an additional 855m² of permeable surfaces and 14 new trees which when grown will achieve 33% canopy cover. The park will provide greening, cooling and amenity for the community.



9.3. Engaged Community

Our community is engaged, trees and plants are valued, and we build partnerships to green our urban environment across all land types.

Strategic principles in our engaged community		
Together	Resilient	Biodiverse

Greening can be complex in urban environments, and combined, coordinated and innovative approaches will facilitate better outcomes.

Residents and landholders play a critical role in greening neighbourhoods in Port Phillip through actions to green their own gardens, balconies, and nature strips. Local environmental advocates and groups care for green spaces and contribute to maintaining our coastal ecosystems for the benefit of the whole community. A range of Friends of groups, community gardens and groups planting in public spaces undertake valuable roles in promoting, improving, maintaining, and monitoring our urban green spaces. Partnerships with volunteers, groups, and organisations are critical in achieving our shared urban forest vision.

Supporting community action and providing public data assists with having an active engaged community who can participate in climate action through various means including citizen science, advocacy and activism, maintaining private gardens and balconies and participating in greening public space. Port Phillip currently supports community greening activities by:

- Having a community greening officer role to support and develop community greening opportunities and resources
 - Providing education including online and in person workshops and video recordings
 - Supporting community led nature strip planting
 - 5 community gardens and 7 plots in public space for community gardening opportunities
 - 11 community planting days for indigenous and biodiverse planting each year
- Supporting the Port Phillip EcoCentre with resourcing to develop and deliver citizen science and biodiversity projects

Partnerships with developers and other stakeholders to support greening, biodiversity and permeability will lead to better urban forest outcomes on public and private land. In addition, joining research collaborations help ensure we are tapping into current best practice, and enabling us to contribute to the development of better green outcomes in Port Phillip and beyond.



Gardening in Lyall Iffla Reserve (source CoPP)

Together we can build a healthy, biodiverse, and more connected city.

9.3.1. Measures, Baselines and Targets

Measure	Baseline	Target Short-term (2029)	Target Medium-term (2034)	Target Long-term (2039)
Case studies of urban forest initiatives by residential home owners and renters, developers, and community groups	Develop case studies	Continue to report	Continue to report	Continue to report
Number and type of community greening activities supported by Council	Set baseline in 2024	Continue to report	Continue to report	Continue to report

9.3.2. Actions

Actions to achieve targets and objectives

	Action	Status
22	Support the community to implement the Nature Strip Guidelines (2022) and Community Gardens Assessment Guidelines (2021) and continue to provide community gardening support to promote sustainable gardening and biodiversity in public spaces.	Underway
23	Deliver annual community activities to educate, incentivise and build greening capacity to improve the urban forest including resources for home gardeners and investigate ways to support home and community gardening.	Underway
24	Provide resources to educate residents and provide guidance to developers on planting, biodiversity, and sustainable gardens to enhance the urban forest on private property	Underway
25	Partner with developers to support greening, permeability, biodiversity and stormwater detention in public and private spaces in line with Act and Adapt and the Public Space Strategy .	Underway
26	Provide information and case studies to monitor and showcase community greening on the website about the urban forest and climate change, tree species, tree removal, maintenance, retention, replanting and challenges such as allergies, solar panel shading and leaf drop.	Underway
27	Investigate the feasibility of a public facing portal with tree and vegetation data including tree species, health and lifespan, new tree planting, tree removals and maintenance schedules	New
28	Partner with urban forest industry specialists and researchers on research projects, planting trials, citizen science projects and other new initiatives.	Underway

Case Study

Community gardens and plots in open space.

There are many types of community gardens across City of Port Phillip including 5 formally managed community gardens, raised planter boxes in 7 parks and reserves for communal use and other community spaces where residents can engage in gardening.

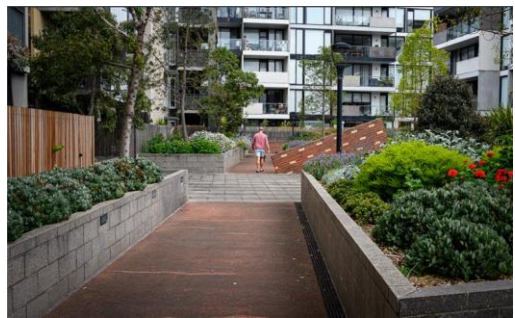


Case Study

Greening on private land.

Public and private partnerships achieve excellent greening outcomes for private space. Inkerman Oasis, Greeves St, St Kilda demonstrates how vegetation is incorporated amongst of 240 private and community dwellings including a large basement car park. Developed in 2005, the development shows the resulting established vegetation in a high-density development.

More recently 10 Patterson St, South Melbourne by Mills Gorman Architects and Clancy Constructions demonstrates the use of green roof, green wall and balcony planters on a site with minimal setbacks. Developed in 2022 the green infrastructure is establishing well.



9.4. A well-managed forest

A **well-managed forest**, including tree health and quality, pest and disease management, and succession planning for iconic species and locations.

Strategic principles in planning for a well-managed forest	
Resilient	Quality

Tree health is a suitable indicator for overall quality of urban forest maintenance and management. The health, structure and useful life expectancy of trees in our forest provides crucial information so we can best manage our urban forest.

Healthy urban forests support local cooling, absorb stormwater, improve amenity and provide health and wellbeing benefits. Healthy forests are also safer, greener and require less maintenance.

There are currently over 46,000 trees within the municipality. These trees and all vegetation in the municipality are inspected and maintained through various programs and contracts. Previous data demonstrates we can expect poor health and short life expectancy in some of our trees, likely around 10-12%.

Urban environmental factors have ongoing impacts on the health of our urban forest with some of the key challenges being contaminated soil, higher density development and constrained urban spaces and damage, including vandalism. A diverse forest with a range of tree species ensures forest resilience, so that overall the forest can withstand pest and disease outbreaks, heatwaves and flood events. Our forward planning and maintenance programs are the main tools we have to combat these challenges.



Diversity

Urban forests need good mixture of species, age classes, structural sizes, species suitability and functional diversity (eg. habitat, shade, flowering) for overall forest health. Diversity in the urban forest reduces risks from pests, diseases and climate change.

Diversity of tree species is an important contributor to the health and longevity of an urban forest.

High levels of diversity are recommended to avoid the loss of a significant portion of our tree stock to any one outbreak of pest or disease. A diverse urban forest is more resilient to change in climatic conditions.

Many urban streets, especially boulevards, are lined with single species, often all planted at the same time. These kinds of tree populations are most at risk, especially when the species is not suited to the changing climate.

Overall, current tree diversity in Port Phillip is good. Only one species, the London Plane, is above 5% of the total tree population (at 9%).

Various threats pose risks to some of Port Phillip's most iconic species. As the climate changes to warmer conditions, some species, like the English Elms planted in some parks, may struggle to cope and go into decline. Other species, including Canary Island Palms and London Plane Trees that contribute significantly to the character of Port Phillip's neighbourhoods have more specific threats.

Canary Island Palms line Beaconsfield Parade and the St Kilda foreshore and feature in Catani Gardens, areas loved as Melbourne's playground hosting local residents and visitors.

Plane Trees provide a green, leafy character, lining most streets in Elwood, and other some other avenues in the city including along St Kilda Road, Brighton Road, Williamstown Road, Richardson Street, Raglan Street and Barkly Street.

Serious management challenges exist for these species, and it is timely to consider how we manage their population to retain the iconic character and benefits these trees bring to our neighbourhoods.

Challenges for tree health include disease, drought stress, infrastructure damage from tree roots and electric line clearances impacting on the longevity of trees and integrity of avenue plantings. Future-proofing our forest by forward planning for when trees come to the end of their lifespans in parks, reserves and streets and developing species specific management plans will ensure we can maintain the integrity of our urban forest and address these challenges. The future of these iconic species is linked strongly to the character of several neighbourhoods, and we will work with those local communities to find a way forward for these iconic trees and avenues.

Maintenance and Management

Trees are long lived assets and have different needs throughout their lifecycle. Management and maintenance considerations include soil health, plant selection, site preparation, proper planting techniques, establishment and young tree care, integrated water management, regular inspections, risk management, pest treatments, and ongoing care.

A focus on forest management means we ensure our trees have the best start and are managed to perform for the urban environment in streets, parks and foreshore areas, for the character of our neighbourhoods, amenity, urban cooling and biodiversity.

Other actions which will improve the health of our urban forest include annual health audits, forward planning (including succession planting, decision making tools to inform 'which tree where'), clear responses to vandalism and the development databases for pests/diseases. Improvements to data collection and maintenance programs will also assist.

9.4.1. Measures, Baselines and Targets

These measures and targets track the health of our urban forest.

Measure	Baseline (2022)	Target Short-term (2029)	Target Long-term (2039)
Public tree species diversity rating	Good to Fair	Good to Fair	Good
Percentage of Council trees assessed as healthy	To be established 2024	Minimum 85%*	90% healthy*
Percentage survival rate of new Council tree plantings at 2 years old	To be established 2024	Minimum 85% survival rate	90% survival rate
Percentage of Palm Tree Management Plan actions completed or on-track (annual)	New	90%	90%

*Targets subject to initial benchmarking

9.4.2. Actions

Actions to achieve targets and objectives

No	Action	Status
29	Conduct annual tree audits to assess health and condition of Council owned trees and implement refinements to guidelines and practices to improve health.	Underway
30	Future proof the urban forest through forward planning for when trees come to the end of their lifespans in parks, reserves, and streets. Consider heritage trees and biodiversity/habitat requirements and aligning with conservation management plans where they exist.	Underway
31	Develop and implement a Plane Tree Management Plan with our community including issues of species dominance, succession planning, and disease management.	New
32	Refine and implement our Palm Tree Management Plan to respond to the presence and spread of disease focusing first on key boulevards and foreshore reserves.	Underway
33	Develop a tree palette and planting matrix to ensure species diversity and climate resilience for tree species selection.	Underway
34	Develop a pest and disease database matched to Port Phillip's tree species to evaluate the risk to the current urban forest and evaluate future planting and management practices.	New
35	Address soil contamination, managing soil on site where possible and using plants and other sustainable methods to remediate contaminated soil, in line with the Public Space Strategy	Underway
36	Update the response to greening vandalism including inspections, incident response and developing community education programs	New
37	Review the establishment and maintenance programs and policy guidelines for trees and vegetation to improve plant health and canopy cover and where specific species management is required, such as Norfolk Island Hibiscus (<i>Lagunaria patersonia</i>)	New
38	Review and update processes and IT systems to improve data collection, reporting and work programs to optimise forest management.	New

Case Study

Cruikshank Street, Port Melbourne

Several years ago sunflowers were used on this street to address contamination in the soil. Since the sunflowers remediated the soil, trees have successfully established, and a succession of bulbs and other understorey plants have thrived.



9.5. A biodiverse urban forest

A biodiverse urban forest with diverse species, healthy ecosystems, and habitat.

Strategic principles in planning for a biodiverse urban forest		
Biodiverse	Resilient	Together

Biodiversity is the variety of all plants, animals and microorganisms, their genes, and the ecosystems they live in across our land, rivers, and coast.

While few areas of remnant vegetation remain in Port Phillip, the biodiversity values within the city are still significant in their highly modified forms. Biodiversity is valuable in and of itself and it provides additional benefits mitigating against effects of climate change, ecological functions, improved amenity and connection with nature.

A biodiversity study of the municipality in 2020 showed that there are over 2000 flora and fauna species and 34 native vegetation sites. While these sites are protected, they are under pressure from population growth, constant and increasing development, pets and climate change (particularly on the foreshore).

As our municipality becomes more urbanised biodiversity becomes more difficult to maintain and therefore it is important to have specific actions established to identify, protect, and grow these areas.



The Foreshore and Hinterland Vegetation Management Plan (2023-2028) has been developed to manage our native and indigenous vegetation areas. These sites are managed for their ecological and habitat values and are surveyed every five years.

Fragmentation of vegetation is one of the main contributors to biodiversity decline in urban areas. Linking biodiverse landscapes creates corridors or connections for safe movement and refuge for resident wildlife and helps maintain species richness with the movement of seeds and pollinators. Residents fostering biodiversity at home is critical to support biodiversity, strengthening corridors and supporting ecological values within our city.

Mapping our current and future biodiversity corridors, including connections with regional networks, will assist in ensuring we protect our current ecosystems and consistently improve them and assist in developing urban forest precinct plans. We can do this by engaging with Traditional Owners, addressing habitat gaps, including biodiverse planting in new projects, weed and pest management, vegetation maintenance practices, and through partnerships with local environmental groups, neighbouring councils and supporting our engaged community.

9.5.1. Measures, Baselines and Targets

Measure	Baseline (2022)	Target Short-term (2029)	Target Long-term (2039)
Average Number of plantings per annum that support biodiversity (annual)	32,000	50,000	TBC
Area of native vegetation sites	261,997m ²	270,197 m ² (Additional 8,200m ²)	TBC #
Quality of remnant indigenous flora sites	6	6(report health in 2031)	6

this target will be set as biodiversity and habitat corridor mapping occurs

9.5.2. Actions

Actions to achieve targets and objectives

No	Action	Status
39	Implement the Foreshore and Hinterland Vegetation Management Plan (2023-2028) to maintain and improve key native and indigenous vegetation sites, in line with the Act and Adapt Strategy	Underway
40	Undertake a biodiversity study every five years (2030) to monitor progress and identify new opportunities to expand biodiversity and habitat, in line with the Act and Adapt Strategy	New
41	Revise and enhance weed and nuisance plant species management practices to improve urban forest health, biodiversity and maintain amenity. Provide updated weed information as a community resource.	New
42	Map, protect and expand biodiverse and habitat corridors with focus on planting locally indigenous selections, reviewing land management practices, and linking key biodiversity corridors. This work will be done with the involvement of the Traditional Owners of the land of Port Phillip, in line with the Public Space Strategy	New

Biodiverse streets

In 2022, works commenced on the Bothwell St Biolink. Large patches of grass were replaced with indigenous plantings in a diverse woody meadow. A community planting day in October 2022 encouraged local residents to join in, with signs continuing to raise awareness about the benefits.



10. Implementation Plan

The accountability for implementing this strategy is assigned across the City of Port Phillip resources. The primary responsibility sits with the Open Space, Recreation and Community Resilience division through Council's Annual Business Plan and Budget over the next five years. Collaborative partnering projects with other sections of Council, relevant organisations and community groups will be actively sourced.

	Action	Year 1	Year 2	Year 3	Year 4	Year 5	Team
canopy	1 Street tree replacement planting program						P, OS
	2 Council's additional tree planting program						P, OS
	3 Develop urban forest precinct plans						OS
	4 Update Council's tree planting guidelines						OS
	5 Continue Tree Canopy Protection Program including cable bundling						P, PM
	6 Advocate for greening outcomes in Electrical Line Clearance Regulations						Ad, OS
	7 Advocate to increase canopy and biodiversity in Albert Park						Ad, P, OS
	8 Advocate to increase maintenance, canopy and biodiversity on state managed land						Ad, P, OS
	9 Work with State Govt to develop and fund a greening strategy for Fishermans Bend						Ad, OS, StP
	10 Canopy and tree inventory analysis every 5 years						OS
	11 Undertake feasibility for canopy target to achieve on streets by 2040, aiming for 30%						OS
	12 Prioritise greening and biodiversity in newly acquired public space						OS, PM
	13 Improve planning advice for trees and vegetation on development applications						P, SP, CD
	14 Increase urban greening in private developments via planning tools						StP, OS
15 Protect significant trees and vegetation via suitable planning tools						StP, SP	
cooler	16 Investigate locations to repurpose roads for increased greening						T, S, OS, PM
	17 Develop irrigation strategy to optimise potable water use						S, P, OS
	18 Plan for integrated water management and increase recycled water use						S, P, OS

	Action	Year 1	Year 2	Year 3	Year 4	Year 5	Team
	19 Improve permeability and increase nature strips through capital projects						A, PM, CD
	20 Maintain heat mapping and solar analysis data						DTS, S
	21 Consider urban forest outcomes in all open space capital works programs						PM
community	22 Support sustainable community gardening in public spaces.						OS
	23 Deliver community activities to educate, incentivise and build greening capacity.						OS, S
	24 Provide resources to residents and developers on sustainable gardens						SP, OS, CD, P
	25 Partner with developers to support greening outcomes						SP, CD, StP, OS, P
	26 Provide information on the website about the urban forest and climate change						OS, S, P
	27 Investigate a public facing portal with tree and vegetation data						DTS, A
	28 Partner on research, planting trials, citizen science and other new initiatives.						PM, OS
well-managed	29 Conduct annual tree audits						P
	30 Forward planning for Council owned trees.						P, OS
	31 Develop and implement a Plane Tree Management Plan						OS, P
	32 Refine and implement a Palm Tree Management Plan						P, OS
	33 Develop a tree palette and planting matrix for diversity and climate resilience						OS
	34 Develop a pest and disease database						P
	35 Address soil contamination						PM, P
	36 Update the response to greening vandalism						LL
	37 Review the establishment and maintenance programs for trees and vegetation						P
	38 Review processes and IT systems to improve urban forest management						DTS, A
biodiverse	39 Implement the Foreshore and Hinterland Vegetation Management Plan						P
	40 Undertake a biodiversity study every five years						OS
	41 Enhance weed and nuisance plant species management						P
	42 Map, protect and expand biodiverse habitat corridors	M					OS, P, PM

Table: Implementation Plan for new actions by Year Teams: OS=Open Space Recreation and Community Resilience, P=Parks and Trees, StP=Strategic Planning, SP= Statutory Planning, A=Assets, DTS= Digital and Technology Services, CD=City Design, LL=Local Laws, CP=City Permits, PM=Project Management, Ad=Advocacy, T=Transport, Sustainability=S

11. Monitoring

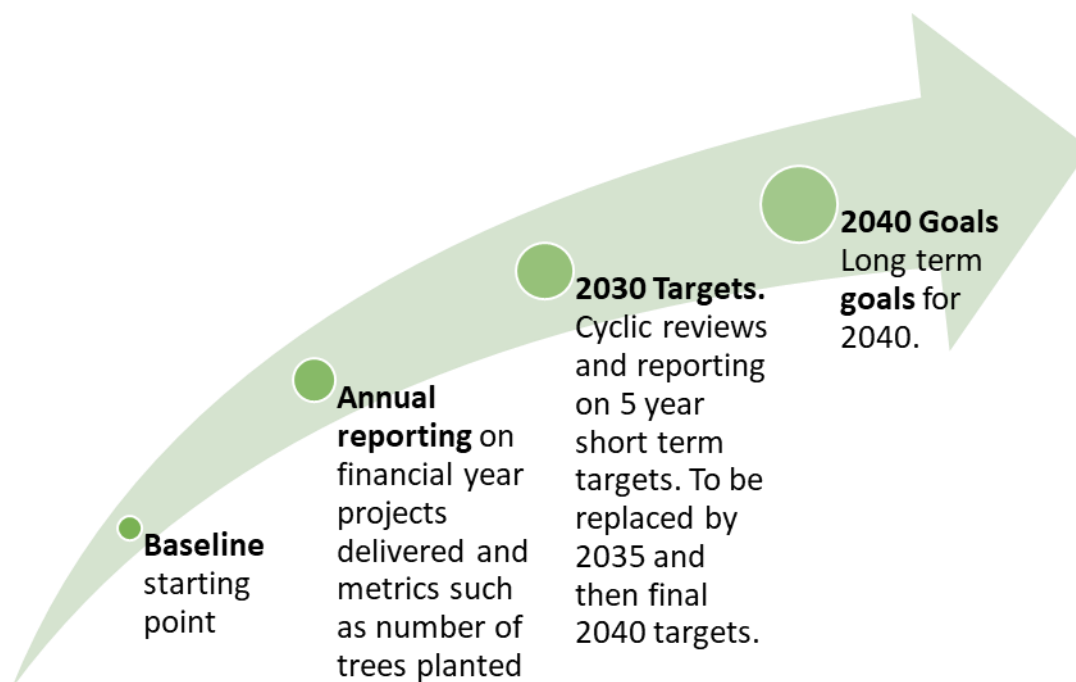
Objectives, measures, targets, and actions are crucial to track progress towards our vision, to support adaptive management, and demonstrate commitment to improving our urban forest. The City of Port Phillip is committed to an evidence based approach to urban forest management and has developed a number of measures and targets to track success over time.

2040 is a long term vision well suited to urban forests with long lived and slow growing trees. For practical delivery, the strategy has been focused on a 5-year action plan. For adaptive management every five years there will be a detailed review of progress and update for the next five years of actions and targets to match the ongoing commitment to 2040. This cyclic, stepped process will include 5 yearly monitoring updates of canopy cover change detection and biodiversity monitoring. Actions required for this monitoring and reporting have been included within the action and implementation plan.

Data from a range of sources was gathered, analysed and tested to create practical, evidence-based targets covering both quantity (eg. canopy cover) and quality (eg. tree health).

Baseline data ensures we can set realistic stretch targets and measure progress from an agreed starting point. In a couple of instances there is no baseline data available, so a target estimation is set, and baseline gathering is either underway or an early action in 2024/2025. As improvements are made to data collection, auditing and asset management functionality our ability to track our progress and set new targets will progress.

In between this five yearly tracking of progress towards our vision and long-term outcomes, we will produce an annual implementation to Council and the Community on delivery of actions and annual measures to give an indication of progress (eg number of trees planted). In combination this creates a time stepped approach to monitoring as set out in figure below:



Pathway to achieving 15 year goals includes evidence based actions with annual reporting, baseline data capture, 5 year targets and 15 year goals.

11.1. Outcomes, Measures, Baselines and Targets

Our goals and measures and targets have been nested to align with the five strategic principles, enabling us to track the quantity and quality of progress towards our vision.

Environmental systems are complex and many of the actions provide direct or indirect contributions towards multiple targets. Below is a matrix table of actions against targets to show this relationship.

Matrix table of actions against target measures to show direct and indirect alignment.

	#	Action	Target Measure														
			Canopy Cover Overall	Streets Canopy	Private Land Canopy	Public Space Canopy	New Trees Planted	High Heat Area Interventions	Increase permeable sqm	Case Studies	Number initiatives supported	Species Diversity	Tree Health	Young Tree Survival	Palm Tree Management	Number biodiverse plantings	Area native vegetation
Increase Canopy Cover	1	Street tree replacement planting															
	2	Council's additional tree planting															
	3	Develop urban forest precinct plans															
	4	Update tree planting guidelines															
	5	Continue Tree Canopy Protection Program including cable bundling															
	6	Advocate for greening outcomes in Electrical Line Clearance Regulations															
	7	Advocate to increase canopy and biodiversity in Albert Park															
	8	Advocate to increase greening outcomes on state managed land															
	9	Develop a greening strategy for Fishermans Bend with State Gov															
	10	Canopy and tree inventory analysis every 5 years.															
	11	Undertake feasibility for canopy target to achieve on streets by 2040, aiming for 30%															
	12	Prioritise greening and biodiversity in newly acquired public space.															
	13	Improve planning advice for trees and vegetation on development applications.															
	14	Increase urban greenery in private developments via planning tools.															
	15	Protect significant trees and vegetation via planning tools.															
Cooler and Greener City	16	Investigate locations to repurpose roads for increased greening															
	17	Develop irrigation strategy to optimise potable water use															
	18	Plan for integrated water management															
	19	Improve permeability and increase nature strips through capital works															
	20	Maintain heat mapping and solar analysis data															
	21	Consider urban forest outcomes in all open space capital works															

Key	Directly contributes to target	Supports target	New action (in bold)
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	#	Action	Target Measure														
			Canopy Cover Overall	Streets Canopy	Private Land Canopy	Public Space Canopy	New Trees Planted	High Heat Area Interventions	Increase permeable sqm	Case Studies	Number initiatives supported	Species Diversity	Tree Health	Young Tree Survival	Palm Tree Management	Number biodiverse plantings	Area native vegetation
Engaged Community	22	Support sustainable community gardening in public spaces.															
	23	Deliver community activities to educate, incentivise and build greening capacity															
	24	Provide resources to residents and developers on sustainable gardens															
	25	Partner with developers to support greening outcomes															
	26	Provide website information about the urban forest and climate change															
	27	Investigate a public facing portal with tree and vegetation data															
	A Well Managed Forest	29	Conduct annual tree audits.														
30		Forward planning for Council owned trees.															
31		Develop and implement a Plane Tree Management Plan.															
32		Refine and implement the Palm Tree Management Plan.															
33		Develop a tree planting matrix for diversity and climate resilience															
34		Develop a pest and disease database															
35		Address soil contamination															
36		Update the response to greening vandalism															
37		Review the establishment and maintenance programs for trees and vegetation															
38	Review processes and IT systems to improve urban forest management.																
Biodiverse Urban Forest	39	Implement the Foreshore and Hinterland Vegetation Management Plan															
	40	Undertake a biodiversity study every five years															
	41	Enhance weed and nuisance plant species management															
	42	Map, protect and expand biodiverse habitat corridors															

Key	Directly contributes to target	Supports target	New action (in bold)
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12. Glossary

Biodiversity / biodiverse

The variety of all plants, animals and microorganisms, their genes, and the ecosystems they live in.

Baselines and Measures

Measures related to our outcomes have been developed for monitoring and to keep the focus of resources on action implementation. Baseline data from 2023 provides a point to track measures and targets against. Baseline data is included in section 8.

Canopy

The upper level of a tree or trees. In cities this is typically measured for trees tall enough to provide functional shade for people (3m+).

Ecosystem

A community of living organisms interacting with each other in their habitat.

Green space

Vegetated land or water in an urban area including parks, gardens, sporting ovals, bike and walking paths, and urban landscaping.

Green Infrastructure

Natural and designed greening urban elements like parks, trees, garden beds, sand dunes, watercourses, raingardens, hedges, green walls and green roofs.

Grey Infrastructure

Human-engineered structures like roads, buildings, footpaths, carparks and drainage systems.

Habitat

Food, water, shelter and space that supports plant or animal life.

Impervious surface

A hard surface (such as a road or building) that prevents infiltration of water into the ground, causing water to run off the surface.

Integrated water management

Collaborative planning and management of stormwater, wastewater and fresh water to deliver water security, public and environmental health, and urban amenity.

Objectives

Statement of the outcome that we are aiming to achieve in order to fulfil the Greening Port Phillip vision, linked to key principles and challenges it will address.

Sustainable

Responsibly managing our current needs without compromising the ability of future generations to meet their needs. This includes social, financial and environmental resources.

Statistical areas level 1 (SA1)

The Australian Bureau of Statistics has statistical geographical boundaries designed so that each statistical area remains as consistent as possible over time. The Statistical areas level 1 (SA1) include areas of population between 200 and 800 people and are designed to maximise geographic detail available for Census of Population and Housing data while maintaining confidentiality⁴.

Targets

Targets are included to track our progress against, and to set measurable aims to achieve our 2040 vision.

Remnant Vegetation

Patches of native trees, shrubs and grasses still left which have not been cleared since European settlement.

Resilient

Able to survive, adapt and thrive no matter what kind of chronic stresses and acute shocks are experienced.

Urban forest / greening

All trees and plants on public and private land.

Urban heat island

The effect of metropolitan areas being hotter than rural areas due to heat absorption and retention in hard surfaces (eg. buildings and pavement).

Understorey

Small and young trees, shrubs and low plantings between the tree canopy and the ground.

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- ¹ City of Port Phillip (2024) Places to Live: City of Port Phillip Housing Strategy (draft for consultation)
- ² City of Port Phillip, 2022, Protecting Vegetation in the private realm Discussion Paper and Options.
- ³ City of Port Phillip, 2022, Protecting Vegetation in the private realm Discussion Paper and Options.
- ⁴ Australian Bureau of Statistics (2022) Census geography glossary ([Census geography glossary | Australian Bureau of Statistics \(abs.gov.au\)](https://www.abs.gov.au/census-geography-glossary))