

GREENING BALACLAVA & ST KILDA EAST

URBAN FOREST PRECINCT PLAN

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EXECUTIVE SUMMARY

The purpose of this Urban Forest Precinct Plan (UFPP) is to guide tree planting and biodiversity projects to achieve the targets of the Urban Forest Strategy and to develop a healthy, biodiverse, and connected urban forest. This UFPP focuses on the Balaclava and St Kilda East neighbourhood, one of nine neighbourhoods in Port Phillip. This UFPP is a pilot and will become the template for the remaining neighbourhoods.

This plan is being developed by LatStudios and the City of Port Phillip, and incorporates analysis by Swinburne Institute of Technology researchers on walk quality – which identifies current conditions and ways to improve pedestrian accessibility, safety, and comfort including shade. The research identifies streets that are used frequently and lacking in shade, making them high priority for urban forest canopy increase.

This Urban Forest Precinct Plan for Balaclava and St Kilda East provides guidance for greening interventions responding to the existing and future neighbourhood character, urban forest principles and objectives, and address urban forest challenges specific to the neighbourhood.

This Urban Forest Precinct Plan:

- Identifies tree planting opportunities to improve equity, including shade in areas with higher heat vulnerability, along key walking and cycling routes, public transport stops and around activity centres.
- Identifies opportunities for biodiverse planting in streets and parks.
- Captures delivery options, aligning with water sensitive urban design, traffic safety and footpath renewal programs and partnering with other land holders.
- Identifies where minor uplifts can occur to existing streetscapes by infill planting filling in gaps, or gradually transitioning trees to a different species to improve canopy cover and biodiversity.
- Provides a priority implementation plan for the next 10 years.

This is the first draft of Greening Balaclava & St Kilda East - Urban Forest Precinct Plan, and we welcome your feedback before the plan is finalised in June, 2025.

Legend (adjacent diagram)

Content common to Urban Forest Precinct Plans (UFPP) across all neighbourhoods in CoPP

Content unique to this Balaclava & St Kilda East Urban Forest Precinct Plan



APPENDICES

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01 INTRODUCTION



01.1 **FOCUS AREA**

The suburbs of Balaclava and St Kilda East form one of nine neighbourhoods within the City of Port Phillip (CoPP). It is an established, predominantly residential neighbourhood with a range of street typologies that may also be common to other parts of the CoPP. The Urban Forest Precinct Plan for this neighbourhood will become a template for developing precinct plans for the remaining eight neighbourhoods in the future.

In 2023, the CoPP assessed tree canopy cover on both public and private land between 2012 and 2022. The study examined canopy cover on roads, public spaces and private properties. Over the ten-year period, the analysis revealed a slight overall decline in tree canopy cover of 0.69%. Roads had a canopy cover of approximately 26%, significantly higher than the average for innercity Melbourne. Most canopy growth came from the expansion of existing street trees, while canopy levels in parks remained largely unchanged. However, tree removals on private land reduced overall canopy cover by 1.09%. Notably, more than half of the private land canopy resulted from new plantings during this period. From this study it was revealed that the Balaclava and St Kilda East neighbourhood has an overall canopy cover of 20% - the second highest in the municipality after Elwood and Ripponlea.

Neighbourhood	Current Canopy Cover (2022)*
1 Elwood & Ripponlea	25%
2 Balaclava & St Kilda East	20%
3 St Kilda & St Kilda West	19%
4 St Kilda Road	16%
5 Albert Park & Middle Park	14%
6 South Melbourne	18%
Port Melbourne	16%
8 Montague	8%
Sandridge & Wirraway	8%

*Note that canopy cover excludes tree canopy within Albert Park. The canopy cover of Albert Park is 16%.



Figure 01: The nine neighbourhoods of the City of Port Phillip (CoPP).

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01.2 PURPOSE

URBAN FOREST STRATEGY (2024-2040)

In 2019—the hottest and driest year in Australia's recorded history—the City of Port Phillip (CoPP) declared a climate emergency. The most effective way to mitigate urban heat islands is through greening—planting trees and diverse vegetation. Greening provides additional benefits, including improved biodiversity, health and well-being, reduced air and noise pollution, and enhanced commercial areas, contributing to liveable, sustainable, equitable, and vibrant neighbourhoods.

To improve urban greening across the municipality, the City of Port Phillip (CoPP) released its second Urban Forest Strategy in 2024 (2024-2040), setting the following vision: In the City of Port Phillip, urban greening is healthy and abundant, biodiversity is valued and supported, and nature connects the community.

The Urban Forest Strategy contains five objectives:

- 1. Increased canopy cover on public and private land for a liveable, sustainable, equitable, and vibrant city.
- 2. A cooler and greener city that is resilient to more extreme weather and changes in rainfall.
- 3. An engaged community where trees and plants are valued, and partnerships are built to green the urban environment across all land types.
- 4. A well-managed urban forest, ensuring tree health and quality, pest and disease management, and succession planning for iconic species and locations.
- 5.A biodiverse urban forest with diverse species, healthy ecosystems, and habitat.

As part of the Urban Forest Strategy, CoPP has set a target to achieve 30% canopy cover on streets and a minimum of 40% canopy cover in public spaces (excluding sports field areas) by 2040, along with an increase in biodiverse planting and permeable surfaces.

GREENING BALACLAVA & ST KILDA EAST, URBAN FOREST PRECINCT PLAN

The purpose of this Urban Forest Precinct Plan (UFPP) is to guide tree planting and biodiversity projects to achieve the Urban Forest Strategy's targets and to develop a healthy, biodiverse, and connected urban forest. This UFPP focusses on Balaclava and St Kilda East, providing a template for the future UFPP's in the remaining eight neighbourhoods of the municipality. Twelve key actions to achieve the Urban Forest Strategy's objectives and targets for Balaclava and St Kilda East are listed in the adjacent table.

To ensure we are planting trees and greening where it is needed most, we have applied an equity lens to prioritise actions. In 2018, the Victorian Government undertook heat mapping across the wider Melbourne region. This mapping identified nine areas in Port Phillip that fall within the two highest categories of the 'heat vulnerability index'. We can enhance equity by focusing on key pedestrian areas to make walking, cycling, and public transport more comfortable while ensuring our parks are cool and shady.

This precinct plan focuses on actions achievable in public spaces, streets, and parks, and where we can improve equity by:

- Prioritising tree canopy in key pedestrian areas to enhance comfort, particularly for those relying on public or 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 and access to drinking water, these areas can become cool refuges during hot weather, providing pockets of high canopy cover that help cool surrounding areas.
- Implementing targeted interventions in areas with high heat vulnerability. These interventions should be tailored to specific locations and could include additional street trees, rain gardens, or the introduction of more permeable surfaces and planting.

Some streets will require greater interventions to achieve optimal canopy and biodiversity outcomes. The Design Toolkit in Chapter 6 outlines various strategies that can be implemented in streets. Streets are then prioritised based on where shade will most improve neighbourhood equity, as detailed in Chapter 7: Precinct Implementation Plan.

Following the adoption of this UFPP, the next phase will involve detailed designs for priority streets, applying appropriate greening interventions from the Toolkit. Further community engagement will take place at this stage.

We will continue tree planting programs to fill in any gaps and work with residents on streets where we can slowly change the species to improve canopy cover, and partner with other agencies to increase shade at public transport stops.

01.3 KEY ACTIONS

The following Key Actions are explained in greater detail on the following spread. The adjacent map illustrates where some of these actions may be implemented.

0	Prioritise larger tree planting for shade provision and pedestrian comfort.
0	Investigate and implement new street designs to
ß	Improve biodiverse planting and tree canopy by a sensitive urban design projects and programs.
4	Plant trees in the vacant spaces (tree plots) wher provision.
6	Gradually transition to new street tree species to
6	Develop tree replacement programs where trees
Ø	Work with State Government, neighbouring Coun and maintenance along roads, rail reserve and no
8	Develop new open spaces with 40% canopy cove when community engagement is finalised in April
9	Develop/expand community gardening opportun Hewison Reserve, Te Arai Reserve, Pakington St R
Ð	Maintain canopy cover and species diversity with
1	Increase tree planting and other greening solutio shade provision is low, partnering with other age
Ð	Carlisle St and Inkerman St are covered by two se development. Inkerman St community engageme

along key pedestrian routes to improve equity

improve canopy cover.

aligning with parks, traffic safety and water

re there are currently gaps in street tree

improve canopy cover.

are failing to thrive to improve canopy cover.

ncils and other agencies to improve tree planting on Council land.

er. Additional greening goals to be determined I 2025.

ities, including plots in open spaces such as Reserve.

tree succession planning in Alma Park.

ns at public transport stops where summer ncies.

eparate streetscape plans, both currently in ent occurred 2024, Carlisle St upcoming in 2025.





01.4 **KEY ACTIONS - EXPLAINED**

Prioritise larger tree planting for shade provision along key pedestrian routes to improve equity and pedestrian comfort.

Short-

Term

Long-

Term

Investigate and implement new street designs to improve canopy cover.

Improve biodiverse planting and tree canopy by aligning with parks, traffic safety and water sensitive urban design projects and programs.

Plant trees in the vacant spaces (tree plots) where there are currently gaps in street tree provision.

Gradually transition to new street tree species to improve canopy cover.



partnerships to deliver projects

Develop tree replacement programs where trees are failing to thrive to improve canopy cover.

Some trees throughout the neighbourhood are not thriving. Identify trees planted in the last 10 years that have failed and plan a replacement program to improve canopy cover. This action can be developed in conjunction with tree audit and infill tree planting programs.

• Identify poor performing trees and develop replacement program

• Deliver replacement program



Work with State Government, neighbouring Councils and other agencies to improve tree planting and maintenance along roads, rail reserve and non Council land.

Develop new open spaces with 40% canopy cover. Additional greening goals to be determined when community engagement is finalised in April 2025.

Develop/expand community gardening opportunities, including plots in open spaces such as Hewison Reserve, Te Arai Reserve, Pakington St Reserve.

Maintain canopy cover and species diversity with tree succession planning in Alma Park.

Increase tree planting and other greening solutions at public transport stops where summer shade provision is low, partnering with other agencies.



Carlisle St and Inkerman St are covered by two separate streetscape plans, both currently in development. Inkerman St community engagement occurred 2024, Carlisle St upcoming in 2025.



rt stops with nproves everyone. public shade and be planted, native n's urban	Inkerman and Carlisle Streets are major neighbourhood thoroughfares and commercial areas. In 2024 a new streetscape design for Inkerman St was adopted by Council. Detail design and implementation planning is underway. A Streetscape Masterplan for Carlisle St including the St Kilda library open spaces and the Town Hall forecourt is occurring with community engagement upcoming in May 2025.
blic transport port sport cernative nities where e.	 Deliver the Inkerman Street Safety Improvement Project Develop Carlisle Street Streetscape Plan
	Detailed design and delivery of Could be

Detailed design and delivery of Carlisle St Streetscape Plan as feasible. Actively identify and seek funding partnerships to deliver streetscape project

02 STRATEGIC CONTEXT



02.1 **MULTI-FUNCTIONAL ROLE OF STREETS & PUBLIC SPACES**

Streets and public spaces serve a variety of interconnected roles that extend far beyond just facilitating movement. They contribute to the overall character and sense of place, hosting a wide range of activities, from commerce to leisure.

Streets are essential for providing infrastructure, such as power lines, stormwater and waste removal. In addition to human-centric infrastructure, streets play a crucial role in supporting biodiversity, green infrastructure, and sustainable water management.

Public spaces are publicly owned lands that are primarily set aside for the purposes of outdoor recreation, nature conservation, passive outdoor enjoyment and public gatherings. Public spaces contribute to quality of life and are essential to the urban environment. Alongside greening and urban cooling, open spaces are valued as places to socialise, relax and unwind, to be outdoors and connect with nature, to play sport and exercise. They are spaces for hosting festivals and events and are spaces which protect and interpret contemporary and historical cultural values, diversity and identity and give a sense of place. Open spaces are places to enjoy the natural environment and be in contact with nature, and they offer opportunities to protect and enhance biodiversity and habitat values.

In order to deliver increased trees and vegetation, a mindful balance of the competing demands of streets and public spaces, including on street parking, with the numerous benefits of trees and biodiverse landscapes is essential.

Like other established neighbourhoods in Melbourne, streets and footpaths in Balaclava and St Kilda East can be narrow, and sometimes trees and powerpoles can restrict accessibility along footpaths. We can improve accessibility by considering tree placement during the design process and when undertaking tree replacement programs.

Trees can help to:

- · Reduce stormwater run-off and improve water quality.
- surface temperatures.
- Improve local air and soil quality.
- Reduce atmospheric carbon dioxide.
- · Provide wildlife habitats and pollination opportunities.
- Increase property values.
- Extend the life of street surfaces.
- Enhance or define the character of an area.
- Promote human well-being by strengthening the community's connection with nature.

These strategic roles and physical conditions help to inform increased canopy and biodiversity opportunities. See Appendix B for the full suite of opportunities and constraints analysis maps.



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02.3 ACCOMMODATING TREES AND VEGETATION ON STREETS



Figure 02: Inkerman Street highlights some of the key streetscape elements that influence a street's function and ability to accommodate urban forest



02.4 ENHANCING TREES AND VEGETATION IN PARKS AND RESERVES



Figure 03: Alma Park highlights some of the key functions and considerations for healthy trees and vegetation in open spaces



02.5 URBAN FOREST STATISTICS IN BALACLAVA & ST KILDA EAST

TREE DIVERSITY

A key management priority for the City of Port Phillip is maintaining a diverse range of tree species across the city and within neighbourhoods. Species diversity is essential for creating a resilient urban forest that can withstand pests, diseases, and climate change. To achieve this, the Council aims to maintain a healthy mix of tree species, genera, and families, ensuring that no single species exceeds 5-10% of the urban forest, no genus exceeds 10-20%, and no family exceeds 15-30%.

St Kilda East and Balaclava have a well-balanced tree population:

- Species diversity is good with only two tree species above 5% of the total neighbourhood tree population the London Plane (6.9%) and Kanooka (6.1%), while all other species are below 5%.
- Genera distribution in St Kilda East and Balaclava is below 10%, with the highest concentrations in the Platanus (Plane trees) and Ulmus (Elms) genera.
- Distribution in this area shows that the Myrtaceae family, which includes many native Australian trees, comprises 42.95% of the population, exceeding the upper level 30% target. However, all other tree families are below the lower 15% benchmark.

Managing the Myrtaceae family can be particularly challenging in Australian cities due to the large number of native species in this family and the community's preference for planting native trees resulting in overuse of this family. The Myrtaceae family includes over 70 genera and more than 1,500 species, encompassing iconic trees such as all Gums, Bottlebrushes, Paperbarks, and Lillypillies.

Overall, St Kilda East and Balaclava have a welldistributed mix of species, genera, and families, with the Myrtaceae family being the exception as it accounts for an unproportionately large percentage of trees in the neighbourhood.

Trees in some streets are not performing well, including some of the Desert Ash (Fraxinus) trees. In consultation with community, streets can be slowly transitioned to a new species when trees are at the end of their useful life expectancy.

TREE AGE

Maintaining a balanced range of tree ages is a crucial aspect of urban forest management, supporting the health, resilience, and long-term sustainability of ecosystem services. A diverse age range ensures that the Council can effectively manage both young and old trees, which often is the most costly periods of their life cycle (site preparation, planting and formative pruning for young and removals for older trees).

Council currently has a young urban forest across St Kilda East and Balaclava, with approximately half (47%) of all trees being 20 years old or younger. The young St Kilda East and Balaclava urban forest is predominantly due to the increased efforts by council to increase the number of tree planted annually over the past two decades, and the high level of maintenance pruning of urban trees lowering the expected lifetimes of most species.

A mix of young, mature, and old trees provides several benefits:

- Continuous canopy cover: Helps mitigate sun and heat exposure across the city.
- Reduced risk of widespread tree loss: Ensures that tree losses occur gradually over time rather than all at once.
- Enhanced carbon sequestration: Older trees store more carbon and provide more shade, contributing to the environment and habitat.
- Urban forest succession: Young trees play a key role in regenerating the urban forest over the long term.
- Cost-effective management: A balanced tree age profile spreads out maintenance costs and helps prevent large expenses in short time-frames.

When an urban forest is dominated by trees of similar ages, it becomes more vulnerable to disease and pest outbreaks, particularly if there is an over representation of mature or old trees. By staggering tree ages, the Council can ensure more manageable maintenance schedules and reduce the risk of rapid, widespread tree loss.

Older trees tend to be more resilient to climate extremes, but younger trees are vital for adapting to future environmental conditions. By planning for a range of tree ages, the Council can foster a stable, sustainable urban forest that will thrive for future generations.

The adjacent info graphics break down some of the key metrics regarding the existing urban forest in Balaclava and St Kilda East.

TREE AGE DIVERSITY IN BALACLAVA & ST KILDA EAST



TREE SIZE DIVERSITY IN BALACLAVA & ST KILDA EAST

Note that this is the tree species' projected mature size in ideal growing conditions, which may not be achieved in street planting.





CITY OF PORT PHILLIP







TREE SPECIES DIVERSITY IN BALACLAVA & ST KILDA EAST

Graph ID	Tree Species Botanical Name	Tree Species Common Name	Tree Species Distribution (%)
	Platanus X acerifolia	London Plane	6.92%
	Tristaniopsis laurina	Kanooka	6.13%
	Ulmus parvifolia	Chinese Elm	4.54%
	Zelkova serrata 'Green Vase'	Green Vase Japanese Elm	4.46%
	Corymbia maculata	Spotted Gum	3.58%
	Melaleuca linariifolia	Narrowleaf paperbark	3.32%
	Callistemon salignus	Willow Bottlebrush	2.93%
	Pyrus calleryana	Callery Pear	2.92%
	Lophostemon confertus	Brush Box	2.82%
	Syzygium smithii	Lilly Pilly	2.44%
	Other		59.94%

TREE GENUS DIVERSITY IN BALACLAVA & ST KILDA EAST

C I	Graph D	Tree Genus	Tree Genus Distribution (%)
		Platanus	7.85%
		Ulmus	7.70%
		Eucalyptus	7.33%
		Corymbia	6.99%
		Melaleuca	6.95%
		Tristaniopsis	6.10%
		Zelkova	5.07%
		Callistemon	4.72%
		Pyrus	4.26%
		Fraxinus	3.47%
		Other	39.54%

TREE FAMILY DIVERSITY IN BALACLAVA & ST KILDA EAST

Graph ID	Т
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Tree Family	Tree Family Distribution (%)
Myrtaceae	42.95%
Ulmaceae	12.82%
Platanaceae	7.88%
Oleaceae	4.82%
Rosaceae	4.63%
Other	27.17%

03 METHODOLOGY



03.1 **URBAN HEAT ISLAND**

The urban heat island (UHI) effect refers to the phenomenon where urban areas experience significantly higher temperatures than surrounding rural areas due to human activities and built environments.

This occurs because materials like concrete, asphalt, and buildings absorb and retain heat, while a lack of vegetation reduces natural cooling through shade and evapotranspiration. UHI is measured by comparing temperature differences between urban and rural areas, analysing land surface temperatures, and assessing contributing factors such as building density, impervious surfaces, and vegetation cover.

The effect is more pronounced at night when heat stored in urban infrastructure is released, keeping temperatures elevated for longer periods. Mapping UHI hotspots allows planners to prioritise areas most in need of cooling interventions, ensuring that urban greening efforts effectively lower temperatures, enhance biodiversity, and improve overall liveability, particularly for vulnerable communities.



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03.2 HEAT VULNERABILITY

In 2018, the Victorian Government developed a heat vulnerability index (HVI) for Melbourne. Heat vulnerability refers to the extent to which individuals and communities are at risk of adverse health impacts due to extreme heat events. It is assessed based on three key factors:

- Exposure, which considers environmental conditions like urban heat islands and lack of shade;
- Sensitivity, which includes demographic and healthrelated factors such as age, pre-existing medical conditions, and socio-economic status;
- Adaptive capacity, which reflects the ability of individuals and communities to cope with heat, including access to cooling infrastructure, green spaces, and financial resources.

The HVI rating of each area is on a scale of 0 (low vulnerability) to 5 (high vulnerability).

Areas with high heat vulnerability often experience increased health risks, including heat stress, dehydration, and heat-related illnesses, particularly among vulnerable populations like the elderly, children, and low-income groups.

Understanding heat vulnerability is essential for prioritising interventions that enhance urban resilience. Tree planting, green roofs, and shaded public spaces can significantly lower surface and air temperatures, reducing the intensity of urban heat islands. High-risk areas, can be prioritised for actions to maximise cooling benefits, improve public health outcomes, and create more liveable, climate-adaptive neighbourhoods.

03.3 WALK QUALITY

Port Phillip has partnered with the Walk Quality project to improve walkability with a multi-factor evidence-based approach. The Walk-Quality Project is a collaboration with Swinburne University of Technology and the University of Melbourne, aiming to enhance urban walkability by developing a design platform that evaluates and improves pedestrian experiences. Funded by the Australian Research Council (ARC) Linkage Grant and industry partners, the project focuses on key urban design elements such as pedestrian accessibility, slope, thermal comfort, risk, and pollution. A significant aspect involves assessing the impact of shading on walkability. Using advanced 3D modelling techniques, the team has created detailed models of municipal areas to evaluate shading and overshadowing effects.

Shade maps are integrated with pedestrian catchments to evaluate walking routes. In the Balaclava and St Kilda East neighbourhood focal point including shopping strips and community hubs were used to map key pedestrian routes. By simulating pedestrian routes under defined sun exposure limits, the tool identifies priority streets for shade improvements, such as tree planting or infrastructure upgrades. This approach quantifies shade coverage and visualises its impact on pedestrian behaviour, enabling targeted interventions to enhance urban walkability.

03.4 SPATIAL DATA & POLICY ANALYSIS

A detailed spatial analysis in GIS was undertaken to systematically map and assess key streetscape features, to inform the recommended actions of the Urban Forest Precinct Plan.

The analysis utilised QGIS and Google Earth to assess data such as existing tree canopy coverage, footpath and verge width, road reserve dimensions, overhead utilities, land use zoning, planning overlays, street alignment, parking configurations, parking controls and topographic conditions. By overlaying these datasets, the complexity of urban forest interventions was evaluated, identifying both constraints and opportunities for implementation of urban forest increases.

To further refine this assessment, a matrix classification was developed to categorise data into three key groups:

- Prioritisation: a combined dataset to indicate which streets may have the greatest need for increased canopy, combining measurables such as areas with high urban heat exposure and low existing tree cover.
- Achievability: a combined dataset to highlight streets with more favourable conditions for planting, combining attributes such as wider verges and unrestricted parking controls.
- Ongoing Review and Unknowns: a data list of attributes which are either unknown, beyond the current project scope, or requiring further investigation in detailed design phases, such as soil quality and long-term maintenance feasibility. On the ground inspections identified streets with vacant tree plots and where species changes could occur.

Alignment with Objectives

Some data is used to help determine which streets should be prioritised to meet equity and Urban Forest Strategy objectives.

Some data can be used to help determine which streets may have more favourable conditions for planting trees.

Ongoing Review

Some data can be used to help improve ongoing maintenance, biodiversity and planning strategy.

Sco be

This structured approach ensures that tree canopy expansion is prioritised strategically, aligning with the broader goals of the UFPP and Council policy.

Unknowns

Some data is unknown at this stage, or not feasible to be considered within the scope of this project.

Some data may be relevant to determining ability to increase canopy coverage, however the data may be complicated to measure, or difficult to abstract for the purpose of making decisions.

This data may need to be considered during more detailed design phases.

WHAT HAS BEEN CONSIDERED?

DATA MAPPING

The accumulated opportunities and constraints data was reviewed to determine a short-list of key attributes which have a clear link towards delivering increased tree canopy.

Each street was scored against this list to help determine an overall priority to guide Council's future actions. Note each item on this attributes list was given an equal weighting in calculating the corresponding score.

For a full list of considered data, refer to Appendix E.

DOCUMENT REVIEW

A review of existing Council strategies and reports and similar projects in other locations was undertaken to inform the UFPP. These documents helped identify Councils aspirations for the functionality and hierarchy of streets and their various attributes. For example, whether streets were identified as active travel corridors or potential biolinks, where the most substantial changes in residential density are forecast, and which streets have already been identified as being a priority for additional street tree planting. Some of the key implications from these documents have been summarised over the following pages.

Unknowns

Some data is unknown at this stage, or unfeasible to be considered within the scope of this project.

On-the-ground knowledge of existing trees (GIS data is a few years out of date and needs review).

Underground utilities locations.

Detailed costing of chosen interventions for each street.

Community and stakeholder support.

Cultural sensitivity and potential for heritage significance in underground locations.

Geotechnical information and soil conditions.

03.5 MOVEMENT NETWORK

The movement and placemaking functions of streets is an important factor in determining where and how increased tree planting can occur. Trees add shade and shelter that make streets more comfortable for walking, cycling and catching public transport.

Several projects within the precinct are improving movement corridors, including Westbury Street, where pop-up bike lanes are being trialled; Carlisle Street, which currently has a streetscape plan under development to guide future upgrades to the street and public realm (consultation occurring later in 2025); and Inkerman Street, where designs for the Inkerman Safe Travel Corridor project, between St Kilda Road and Orrong Road, Glen Eira Road, were released for community feedback in 2024.

To assess pedestrian movement through the neighbourhood, the Walk Quality project created detailed models of the neighbourhood to evaluate shading and overshadowing effects from buildings and trees. The analysis integrated shade maps with pedestrian catchments to evaluate walking routes factoring in urban design elements such as pedestrian accessibility, slope, thermal comfort, risk, and pollution.

The tool developed by the Walk Quality project calculates walking access catchments while factoring in shade quality within a comfortable ten-minute walk. By simulating pedestrian routes to key destinations under defined sunexposure limits, the tool identifies priority streets for shade improvements, such as tree planting or infrastructure upgrades. Key destinations modelled include activity centres at Carlisle St, Orrong Road, Inkerman Street, Chapel Street Windsor, Ripponlea Shopping Strip, and Windsor, Balaclava and Ripponlea train station, as well as Alma Road Community Centre. This innovative approach not only quantifies shade coverage but also visualises its impact on pedestrian behaviour, enabling targeted interventions to enhance urban walkability.

The streets identified as priorities for closing gaps in the shade network through the Walk Quality analysis were: Alma Rd, Nelson St, Camden St, Glen Eira Ave, Oak Grove, William St, Inkerman St and Carlisle St as a high priority, with Lansdowne Rd, Westbury St, Marlborough St, Rosamond St and Nightingale St as medium priority streets to improve walkability.

Map ID	Plan Feature	Urban Forest Precinct Plan Implications	Source
	Public Transport Network	Streets will need to maintain adequate space for functionality of trams and buses. No network route changes are planned for the study area. The property parcels which contain train infrastructure generally are designated Transport 1 Zone, and are owned by VicTrack. For the purposes of the UFPP, this may mean Council will need to play more of an advocacy role to increase canopy in these locations (instead of an implementation role).	CoPP Integrated Transport Strategy (pg 49) VicPlan Zoning – Transport Zone 1
\leftrightarrow	Existing Bicycle Network	Many existing streets already have clearly marked bicycle lanes or bicycle priority. These existing routes are also reflected in CoPP's Integrated Transport Strategy (Page 43).	Nearmap Aerial Imagery 2024 Integrated Transport Strategy (Page 43)
(••)	Planned Bicycle Network	CoPP's Integrated Transport Strategy also identifies additional cycle route formalisation and expansions in several streets. The numbered notations identify implementation processes underway to improve the cycle network.	CoPP Integrated Transport Strategy (Page 43)
	Pedestrian Priority Streets	Priority Accessible Walking Routes have been identified within the Carlisle Street Activity Centre Plan. The guidance for these streets is general in nature, but broadly encourages these streets to enable safe, comfortable and seamless movement for pedestrians and mobility limited users. It is important to note that the study area for the Activity Centre Plan does not capture the whole of the study area for the UFPP, so aspiring for higher pedestrian experience should not necessarily be limited to the streets marked on this map.	Carlisle Street Activity Centre Structure Plan (page 46)
\Leftrightarrow	Major Vehicle Network	There are several major roads which are managed by the Department of Transport and Planning (DTP) within the study area. This requires Council to play more of an advocacy role to increase street canopy (instead of an implementation role).	VicPlan Zoning - Transport Zone 2
0	Carlisle Street Major Activity Centre (MAC)	The Carlisle Street Major Activity Centre has a focus on the local community, with a diverse mix of retail, commercial, civic and community services (west of Chapel Street) and leisure and living opportunities. Notably in Clause 11 of the Planning Scheme is the goal of "designing development to be self-sufficient in on-site car parking and providing on-site car parking" to reduce parking pressure on streets and encourage waking. Any future guidance within the UFPP report should consider the increased walking, outdoor dining and retail needs of this area.	Clause 11.03-1L-03 - Carlisle Street Major Activity Centre
2	Carlisle Street	A new streetscape plan for Carlisle Street is under development to guide future upgrades to the street and the public realm. This plan will provide more detailed analysis and direction of Carlisle St including increasing canopy cover and biodiversity.	Advice from CoPP
3	Inkerman Street Local Activity Centre (LAC)	The Inkerman Street Local Activity Centre is smaller in scale and does not have the same level of access to public transport when compared to the Carlisle Street MAC. This centre is encouraged to "support convenience retailing, and personal / business services roles" for the area. Like Carlisle Street, Inkerman Street LAC guidance should be cognisant of the increased pedestrian activities in this area.	Clause 11.03-1L-04 - Inkerman Street Local Activity Centre, St Kilda East.
4	Inkerman Street	Concept designs for Inkerman Safe Travel Corridor between St Kilda Road and Orrong Road were made public for community feedback. Subsequently Design Option B was chosen. This street configuration creates opportunities for additional kerb build-outs for tree and understory planting. Given this project will consider implementation to a greater detail than the UFPP, consideration of canopy coverage of Inkerman Street could defer (or collaborate) towards the outcomes this project.	https://haveyoursay.portphillip.vic. gov.au/help-improve-road-safety- inkerman-street
6	Westbury Street	Pop-up bikes lanes have been installed along Westbury Street as part of the DTP Pop-up Bike Lanes Program to support more people to ride bikes across Melbourne. DTP have now confirmed that original road configurations will be reinstated due to community feedback. Whilst the implementation of bike priority in Westbury Street is unresolved, it remains a focus of the Integrated Transport Strategy and therefore the UFPP should still consider appropriate urban forest interventions that enable a pleasant cycling experience.	CoPP: https://www.portphillip. vic.gov.au/about-the-council/ projects-and-works/department- of-transport-s-pop-up-bike-lane- program Department of Transport and Planning
	Walk Quality Shade Priority Streets	The Walk Quality analysis by Swinburne University ties into the movement network by illustrating where there are gaps in the provision of shade for walking catchments from key activity nodes, thus identifying the priority streets for shade improvements. These priority Walk Quality streets were identified as: Alma Rd, Nelson St, Camden St, Glen Eira Ave, Oak Grove, William St, Inkerman St and Carlisle St as a high priority, with Landsdowne Rd, Westbury St, Marlborough St, Rosamond St and Nightingale St as medium priority streets to improve walkability.	Swinburne University Walk Quality Assessment

Legend

ONG ROAD

 Balaclava and St Kilda East
 Train route and stop
 Tram route and stop
 Bus route and stop
 Existing cycle network
 Planned cycle network
 Pedestrian priority street (Carlisle Street Structure Plan, 2009)
 Walk Quality shade focus area
 Major vehicle network
 Activity centre boundary
 Refer to separate commentary
 Open space

03.6 GREEN AND BLUE FUNCTION

The background document review revealed several key strategic considerations for the ecological and hydrological functions of streets and open spaces in Balaclava and St Kilda East. Alma Park is the most ecologically significant open space in the neighbourhood, featuring areas of remnant Plains Grassy Woodland and significant remnant eucalypts and other mature trees. It is important to consider the location and role of both existing and future open spaces and how the urban forest can integrate into this open space network to create shaded, walkable streets and enhance habitat connectivity.

The Bothwell Street Biolink project is another significant consideration, with understorey planting and a Woody Meadows project currently underway. See Chapter 05 for detailed analysis of all existing and planned open spaces in the neighbourhood.

Map ID	Plan Feature	Urban Forest Precinct Plan Implications	Source
•	Existing Trees	Based on Council-provided data, this layer identifies locations and 'crown size' of existing trees as recorded in 2022. This dataset provides insight towards areas of higher or lower canopy coverage and assists in determining canopy intervention priorities across the study area.	GIS shapefile layer 'all_council_ trees' (2022) provided by CoPP.
⇔	Green Link	The 'Greenline' is a community-proposed idea of a heavily landscaped shade and habitat corridor running north-south along the rail. This concept is well supported by the community, however its implementation is complex with varied land ownerships, soil contamination and other constraints. The UFPP can support the vision by delivering elements in part. As suggested in the Public Space Strategy, advocate to, and partner with, VicTrack to beautify a small portion of the Green Line from Balaclava Station down to the rail bridge, including planter boxes and public artwork to test and trial future use and inform future investment over time.	'Greening Port Phillip - Urban Forest Strategy Stage 1B Engagement Findings Report' and Green Line Proposal (Greenline Alliance) community-initiated report. https://pecan.org.au/ projects/
	Street Tree Focus	Within the Carlisle Street Activity Centre Structure Plan there are several streets that have been identified for 'proposed or potential / new street planting / greening' which potentiality supports a higher prioritisation within the UFPP.	Carlisle Street Activity Centre Structure Plan (page 40)
-	Improve Avenue-Style Street Tree Planting	Streets in the area bound by Alma Road, Inkerman Street, Chapel Street and Hotham Street are identified for additional street trees where feasible to increase canopy cover and improve pedestrian amenity. Many local streets south of Carlisle Street have also been identified for additional street trees where feasible to increase urban greening and shading to improve the pedestrian experience and connections from Balaclava Walk.	Public Space Strategy, 2022-2032 (page 18)
$ \Longleftrightarrow $	Bothwell Street Biolink	The Biolink is a part of the Greening Port Phillip Strategy that envisions CoPP as having a "healthy and diverse urban forest that uses innovative greening solutions to enhance the community's daily experience, ensuring environmental, economic, cultural and social sustainability for future generations." The improvements for Bothwell Street are under construction. The endemic EVC of Bothwell Street is the endangered Grassy Woodland (EVC 175). This is a variable open eucalypt (or occasionally sheoak) woodland over a diverse ground layer of grasses and herbs. The shrub component is usually sparse. It occurs on sites with moderate fertility on plains or undulating hills on a range of geology. Larger landscaping interventions within the study area could also consider replicating this EVC species mix.	https://www.portphillip.vic.gov.au/ about-the-council/projects-and- works/bothwell-st-biolink Draft Foreshore and Hinterland Vegetation Management Plan 2023 (Practical Ecology)
	Existing Public Open Space	There are opportunities to review the existing canopy, design, function of these open spaces to identify potential canopy uplift. The UFPP should support the Public Space Strategy's suggested open space planting actions (listed on pages 250-251) where possible.	Public Space Strategy - Technical Report (pages 231-251).
	Restricted Open Space	Semi-public areas such as the Cemetery and parking areas play a role in delivering urban forest. The UFPP can advocate for consideration of these spaces.	
	Newly Aquired Land for Public Space	There are current initiatives being considered by the CoPP to improve the quality or coverage of open spaces across the study area offering opportunities to deliver more tree canopy.	Places for People - Public Space Strategy vol. 3 (page 18) and email advice from CoPP.
	Elevation / Topography Hillshade	Elevation data has been shown because it is relevant to consider in parallel with overland water flow and flood prone areas. This provides high-level guidance on slope across the site and how individual streets can contribute towards the overall integrated water management (IWM) of the study area.	GIS shapefile layer '50cm Contours Reprojected' (date unknown) provided by CoPP.
	Flood Prone Areas (SBO)	Flood-prone areas have been mapped to show which streets may experience stormwater accumulation, or experience stormwater flows. This information may hold implications for tree species selection or design intervention choices in UFPP. Water Sensitive Urban Design (WSUD) interventions in flood-prone streets (such as permeable pavements, rain gardens, and bio-retention systems) could help absorb and manage stormwater locally, easing pressure on stormwater infrastructure. The UFPP could also consider tree species which are more resilient when experiencing flooding or extended dry conditions.	VicPlan Overlays - Special Building Overlay (SBO)

Legend

Balaclava and St Kilda East **HOH** Train route and stop Existing tree (based on 2022 data) 47m Elevation (above sea level) 3m Flood-Prone Area (SBO Overlay) Public open space Restricted open space Newly Aquired Land for Public Space Green Line (community proposal) Street Tree Focus (Carlisle Street Structure Plan, 2009) Improve Avenue-Style Street Tree Planting (Public Space Strategy, 2022-2032) Bothwell Street Biolink

03.7 PLACEMAKING, LAND USE & DEVELOPMENT

The Balaclava and St Kilda East neighbourhood is an established, predominantly residential area located at the eastern edge of the City of Port Phillip. The most notable non-residential variations in land use are within the Carlisle Street Major Activity Centre, a traditional Melbourne strip shopping area centred around Balaclava Train Station, running from St Kilda Road in the west to Orange Grove in the east. The Carlisle Street Major Activity Centre includes pockets of public use zones for key facilities such as the St Kilda Town Hall and Library, mixed-use zones to the south and north-west of Carlisle Street, and one of the few remaining industrial zones along William Street.

There is also a smaller Local Activity Centre located on Inkerman Street. Several areas, including blocks on Chapel Street, those surrounding the Inkerman Street Aldi Shopping Centre, and the Balaclava Woolworths and Coles, have been earmarked for substantial change under the City of Port Phillip's Housing Strategy (2024-2039).

Map ID	Plan Feature	Urban Forest Precinct Plan Implications	Source
0	Carlisle Street Major Activity Centre (MAC)	 The Carlisle Street Major Activity Centre is a traditional Melbourne strip shopping centre. The existing Carlisle Street strip is zoned Commercial Zone 1 and extends from St Kilda Road in the west to Orange Grove in the east. To the south-west of the strip is an area zoned for Public Use (either PUZ2 or PUZ6), which accommodates the St Kilda Town Hall and the St Kilda Primary School, with the St Kilda Library also zoned PUZ6. South of Carlisle Street is a mixed-use zone along Chapel Street, predominantly featuring a multi-unit residential development alongside older factory buildings. This area is also designated for substantial change in the City of Port Phillip's recent Housing Strategy, 2024-2039. An Industrial 3 zone (IN3Z) is located to the south of Carlisle Street along William Street, which is the only remaining area of industrially zoned land in St Kilda. To the north-west of Carlisle Street, the commercial zone (CIZ) continues up the eastern edge of St Kilda Road. This area includes office uses as well as highway-based retail establishments. Behind this commercial frontage on St Kilda Road, encompassing Inkerman, Pakington, and Martin Streets, is a mixed-use zone featuring new commercial/residential development, alongside some remaining factory buildings. This area is also designated for substantial change in CRZ1) at the southern end of Chapel Street - currently an Australia Post warehouse and car park - that has been designated for substantial change in CoPP's Housing Strategy. The Woolworths and Coles buildings and car parks at the centre of the MAC have also been designated as areas for substantial change. 	City of Port Phillip Housing Strategy, 2024- 2039 Carlisle Street Urban Design Framework (2009) VicPlan / VicData
2	Inkerman Street Local Activity Centre (LAC)	 There is a local commercial area or Local Activity Centre (LAC) on Inkerman Street between Sebastopol Street to the west and Chusan Street to the east. This pocket is commercial one zoned (C1Z), and includes a collection of restaurants, retail shops, mechanics, and the Inkerman Hotel – all in older single to two storey buildings and warehouses. Hewison Reserve interfaces the strip to the south-west. 	VicPlan / VicData
3	Substantial Change Areas	 CoPP is currently finalising updated zoning which will guide levels of change in different areas of the UFPP study area. This spatial layer will highlight streets that may experience substantial or minimal population change. There are a range of corresponding implementation opportunities and constraints arising from this, for example: encouraging consolidation of properties may unlock opportunity to plant trees on adjacent streets, streets experiencing minimal change may provide certainty around parking needs and therefore canopy interventions. It is worth noting that the Housing Strategy, 2024-2039 identifies areas of substantial, moderate, incremental, and minimal change, however the report does not detail what this change may look like. As designated in the City of Port Phillip's Housing Strategy, 2024-2039, there are several areas marked for substantial change. Mid- and high-rise apartment buildings, as well as mixed-use developments (as outlined in the relevant adopted structure plan), are generally suitable for these areas. These areas all fall within the boundary of the Carlisle Street Major Activity Centre. They include: Three blocks of mixed use zone (MUZ) South of Carlisle Street along Chapel Street, predominantly featuring a multi-unit residential development alongside older factory buildings. Three blocks behind St Kilda Road, encompassing Inkerman, Pakington, and Martin Streets, featuring new commercial/residential developments, such as the Aldi development, alongside some remaining factory buildings. A small pocket of residential growth zone (RGZI) at the southern end of Chapel Street - currently an Australia Post warehouse and car park. The veolworths and Coles buildings and car parks at the centre of the Carlisle Street MAC. The rest of the Carlisle Street MAC that can be considered residential land is marked for moderate change. The rest of the Balaclava and St Kilda East neighbourhood is marked for eit	City of Port Phillip Housing Strategy, 2024- 2039

04 STREET TYPES & OPPORTUNITIES

04.1 **STREET TYPES & OPPORTUNITIES**

The streets of Balaclava and St Kilda East are arranged around a grid of boulevards and high streets with local streets and lanes connecting between. Through analysis, they have been grouped into 10 typologies based on their physical attributes and movement functions.

These include:

- overall width (property boundary to property boundary)
- footpath width
- number of vehicle lanes
- verges and verge planting
- bicycle infrastructure
- car parking
- infrastructure (powerlines, public transport modes)
- existing canopy coverage
- street function (through street, one-way, commercial strips, local streets).

Narrow Streets, Typical Streets, and Green Streets are the most common street types across the study area, accounting for around 65% of all streets.

This typological approach to the streets within the study area enables the development of a system of potential streetscape interventions-presented in the following 'Interventions Toolkit' chapter—that can be scaled up or down to apply to multiple street types without requiring an individual design for each street.

ACCESS LANEWAYS (3.0 - 5.0m Wide)

There are approximately 10 Access Laneways in the study area. They generally only serve as access to residential buildings, with most back fences and buildings directly interfacing the edge of the laneway. Some apartments are set back from the laneway with open car parking. There are no street trees in these laneways, the only canopy cover comes from large trees in back gardens.

Footpaths	None
Bike Lanes	None
Traffic Lanes	1 traffic lane the width of the laneway
Parking Arrangement	None
Verges	None
Existing Trees	None - only trees in the private realm
Powerlines	None
Lighting	None
Building Interfaces	Typically fences and buildings built to the boundary, directly interfacing the laneway

Figure 08: All of the Access Laneways in the neighbourhood, shown in dark grey.

Figure 07: An example of an access laneway in Balaclava.

Figure 09: An example of an access laneway in St Kilda East.

CITY OF PORT PHILLIP

MICRO STREET (10.0m Wide)

There are nine Micro Streets which typically cater to slow-moving local traffic moving in both directions, with a central shared lane that requires one of the passing vehicles to pull into the parking area. Existing canopy cover is generally low (less than 10%) with some streets (such as Stuart and Young Streets) not having any street trees.

Footpaths	Typically 1.3-1.5m wide on both sides, often impeded by signs and poles
Bike Lanes	None
Traffic Lanes	1 lane (~3.1m)
Parking Arrangement	Parallel parking both sides of street (2m each side)
Verges	None
Existing Trees	Occasional, sometimes located in parking zones or on footpath Some streets without street trees.
Powerlines	One side
Lighting	One side (same poles as powerlines)
Building Interfaces	Buildings setbacks typically range from 2-4m

Figure 10: Jervois Street in St Kilda East is an example of a Micro Street.

Figure 12: All of the Micro Streets in the neighbourhood, shown in red.

Figure 11: A typical cross section of a Micro Street.

a

NARROW STREET (12.0 - 12.5m Wide)

There are 27 Narrow Streets within the study area. They generally accommodate local traffic in both directions, however there is often the need for one vehicle to pull into the parking area to allow another vehicle to pass if cars have parked on either side of the road. The existing canopy cover is generally low at less than 10%.

Footpaths	Typically between 1.4m-1.7m wide on both sides
Bike Lanes	None
Traffic Lanes	1 wide lane (approx 3.9m+)
Parking Arrangement	Parallel parking both sides of street (2.1m each side)
Verges	None
Existing Trees	Most streets with semi-regular trees, sometimes located in road or footpath
Powerlines	One side
Lighting	One side (same poles as powerlines)
Building Interfaces	Buildings setbacks typically range from 2-4m

Figure 13: King Street in St Kilda East is an example of a Narrow Street.

Figure 14: A typical cross section of a Narrow Street.

Figure 15: All of the Narrow Streets in the neighbourhood, shown in orange.

TYPICAL STREET (14.5 - 16.0m Wide)

There are 26 Typical Streets within the study area. They generally accommodate local residential traffic but may also cater to through-traffic in combination with higher-order roads. Their existing canopy cover varies, with some low (5-10%), some medium (10-20%) and some with high canopy coverage, such as Graylings and Glenmark Avenues.

Footpaths	Typically 2.4-2.5m on both sides, with tree cutouts or planted 1m verges further reducing this width in some streets.
Bike Lanes	None
Traffic Lanes	2 lanes (approx 5.8m - 6.5m trafficable width)
Parking Arrangement	Parallel parking both sides of street (Approx 2.3m each side)
Verges	Mixed (some inconsistent narrow 1m grass verges)
Existing Trees	Generally regular trees located within cutouts on footpath
Powerlines	One side
Lighting	One side (same poles as powerlines)
Building Interfaces	Setbacks typically range from 3-7m with mature, medium-scale landscaping (including trees) in front gardens.

Figure 16: Gourlay Street in Balaclava is an example of a Typical Street.

Figure 17: A typical cross section of a Typical Street.

Figure 18: All of the Typical Streets in the neighbourhood, shown in purple.

a

GREEN STREET (15.0 - 15.5m Wide)

There are 24 Green Streets within the study area. They generally accommodate local residential traffic, with unmarked roads that provide enough width for parking on both sides and two directions of traffic movement in one central shared lane. Existing canopy cover is generally high, with many of the Green Streets having an existing canopy of over 40% coverage.

Footpaths	Typically between 1.6-1.7m wide on both sides
Bike Lanes	None
Traffic Lanes	1 wide lane (~3.5-3.8m)
Parking Arrangement	Parallel parking both sides of street (2.1m each side)
Verges	Planted verges on both sides, typically 2.0-2.1m
Existing Trees	Very consistent trees, many are very well established
Powerlines	One side
Lighting	One side (same poles as powerlines)
Building Interfaces	Setbacks typically range from 3-7m with mature, lower scale landscaping in front gardens. This is potentially due to the shade provided by street trees.

Figure 21: All of the Green Streets in the neighbourhood, shown in light green.

Figure 19: Holroyd Avenue in St Kilda East is an example of a Green Street.

CONNECTOR BOULEVARD (18.5 - 21.0m Wide)

There are eleven Connector Boulevards. These streets accommodate local traffic and through traffic and the majority of dedicated bicycle movements. These streets generally have low to medium canopy cover, although some streets (such as Alma Road, Grosvenor and Nightingale Streets) have higher canopy and well-established mature trees.

Footpaths	Typically between 1.3-1.7m wide on both sides	
Bike Lanes	~1.6m each side	
Traffic Lanes	2 marked lanes (approx 6.2m trafficable width)	
Parking Arrangement	Marked parallel parking both sides of street (2.3m each side)	
Verges	Planted verges consistent on both sides, width varies from street to street, either 1m or 2m wide.	
Existing Trees	Regular trees on both sides located in verge.	
Powerlines	Typically 1 side, with some poles on opposite for distribution.	
Lighting	Alternating sides	
Building Interfaces	Building setbacks vary (2.5m-12m) with good levels of landscaping. One some street corners buildings have no setbacks. More frequent low-rise apartment buildings.	

Figure 24: All of the Connector Boulevards in the neighbourhood, shown in dark green.

Figure 22: Alma Road is an example of a Connector Boulevard.

Figure 23: A typical cross section of a Connector Boulevard.

HIGH STREET (19.5 - 21.0m Wide)

There are two High Streets in the study area, Carlisle Street and Chapel Street. They are similar in scale to the Connector Boulevards; however, they are destination streets connecting the major activity centres of the area. This means they are busy with all modes of transport – including trams. They have low canopy cover (6-8%) and are managed by the State Government.

Footpaths	Typically 2.4-2.7m on both sides, with tree cutouts or planted 1m verges further reducing this width in some streets.	
Bike Lanes	Varies, ~1.6m each side	
Traffic Lanes	2 marked lanes (approx 6.5m trafficable width), shared with trams	
Parking Arrangement	Marked parallel parking both sides of street (2.3m each side)	
Verges	Carlisle Street generally features no verges, Chapel Street has an inconsistent 1m planted verge.	
Existing Trees	Generally regular trees on both sides located in footpath zone	
Powerlines	Power and lighting typically both sides of the street, which help with tram overhead infrastructure	
Lighting	Alternating sides or both sides	
Building Interfaces	Buildings in several areas have minimal or zero setbacks, particularly in activity areas. Elsewhere setbacks can be as large as 12m with well-sized front gardens. More frequent low-rise apartment buildings.	

Figure 27: The two High Streets in the neighbourhood, shown in yellow, are Carlisle Street and Chapel Street.

Figure 25: Carlisle Street in Balaclava is an example of a High Street.

Figure 26: A typical cross section of a High Street.

MOVEMENT CORRIDORS

There are three Movement Corridors in the study area: Hotham Street, Dandenong Road and Nepean Highway. The difference is to do with the scale of movement and scale of the streets. Hotham Street carries heavy traffic within four lanes which reduces to 2 lanes when parallel parking is allowed outside of clearway times. The two highways accommodate eight lanes of traffic, as well as a tram line. Hotham Street has very low existing canopy cover, whereas Dandenong Road and Nepean Highway - particularly the former - have low-moderate existing canopy cover, with regular mature trees in the verges at the sides of the roads and in central medians either side of the tram lines.

	Moderate Movement Corridor (20.5 Wide)	Major Movement Corridors (60m Wide)
	Hotham Street	Dandenong Road and Nepean Highway
Footpaths	Typically ~3m	Typically ~1.5-1.8m
Bike Lanes	None	Nepean Hwy - Yes, Dandenong Rd - No.
Traffic Lanes	4 lanes (2 of which are clearways at specified times of the day, and parking otherwise) (~14.4m total carriageway)	3-4 lanes each direction
Parking Arrangement	Yes, during specified times of the day.	Dandenong Rd has no parking, Neapean Hwy parallel parking on its service road.
Verges	Some verges adjacent to Cemetery. Generally not elsewhere.	Generally large verges (varies significantly)
Existing Trees	Generally regular trees on both sides located in footpath zone	Consistent trees in both verges on the side of streets and in the central medians, many are very well established
Powerlines	Power typically 1 side of the street, lighting alternates sides sharing power poles and free-standing poles on the other side	Power and lighting typically both sides of the street
Lighting	Alternating sides	Both sides
Building Interfaces	Setbacks generally are moderate ranging between 3-7m with good landscaping in front gardens	Setbacks generally are moderate ranging between 3-7m with good landscaping in front gardens.

Figure 30: Hotham Street is a moderate Movement Corridor.

Figure 29: Dandenong Road is a major Movement Corridor

Figure 28: Nepean Highway is a major Movement Corridor.

UNIQUE STREETS

There are seven Unique Streets in the study area that do not fit into the typologies. These are: Bothwell Street, Dickens Street, Cardigan Street, William Street, Grosvenor Street, Pakington Street and the northern stretch of Alexandra Street that runs alongside the St Kilda Cemetery.

Bothwell Street, a back street in Balaclava, is classified as a Unique Street as it is currently being transformed into a 'Biolink' project. It has a wide central median strip with mature eucalypts, beneath which a biodiverse understorey is being developed, along with a gravel walking trail, rock seating nodes, bird baths, and other elements to enhance its ecological function. At the Chapel Street end of Bothwell Street, there is also a pilot Woody Meadows project featuring a diverse range of woody mid-storey shrubs. Similarly, Dickens Street is a Unique Street because it is temporarily functioning as a pop-up park next to St Kilda Primary School. The former cul-de-sac car park now includes bike lanes connecting to Nepean Highway, seating and play equipment, a basketball hoop, and raised planters.

Cardigan Street, William Street, Grosvenor Street, and Pakington Street are also considered Unique Streets for similar reasons. Each is a wide street approximately 20 metres—with angled parking on one side. They also feature traffic-calming measures such as chicanes and corner buildouts, which allow trees to be planted closer to the centre of the road.

Finally, the northern stretch of Alexandra Street within the study area, where it runs alongside St Kilda Cemetery, is considered a Unique Street. It is a wide street with angled parking, and presents an opportunity for increased planting (which has been highlighted by the local community in several Council reports).

Figure 33: Bothwell Street Biolink central median strip

Figure 34: Woody meadows pilot project at the end of the Bothwell Street Biolink

Figure 35: All of the Unique Streets in the neighbourhood, shown in pink.

Figure 32: Cardigan Street (shown above), William Street, Grosvenor Street, and Pakington Street are Unique Streets with angled parking

Figure 36: The Dickens Street pop-up park is a unique, temporary open space

Figure 37: Alma Park (photo by City of Port Phillip)

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