

# Macquarie Park Innovation Precinct

## Public Domain Master Plan

Prepared for Department of Planning & Environment, in collaboration with Allen, Jack + Cottier Architects

# Acknowledgement of Country



We pay our respects to the Traditional Custodians of Country throughout Australia, their Elders and ancestors, recognising their rich heritage and enduring connection to Country and acknowledging the ongoing sovereignty of all Aboriginal and Torres Strait Islander Nations.

We recognise the profound connection to land, waters, sky and community of the First Nations peoples, with continuing cultures that are among the oldest in human history. We recognise that they are skilled land shapers and place makers, with a deep and rich knowledge of this land which they have cared for, protected and balanced for millennia.

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## Quality Assurance

Macquarie Park Innovation Precinct Public Domain Master Plan Prepared for Department of Planning & Environment Project Number 020-0096-00-U-00-RP01

### Revisions

Issue	Date	Description	Prepared By	Reviewed By	Project Principal
01	29/05/2023	MPIP PDP Draft Report [WIP]	SP	AL	YX
02	29/06/2023	Tranche 1 Comments Report Update	TR	AL	YX
03	03/07/2023	Tranche 1 Comments Report Update	TR	AL	YX
04	11/07/2023	Tranche 2 Comments Report Update	TR	AL	YX
05	13/07/2023	Tranche 2 Comments Report Update	TR	AL	YX
06	10/10/2023	Updated Materplan	TR	AL	YX

# 1. Executive Summary

This Public Domain Plan forms part of a suite of documents which supports the urban design work stream for Stage 1 of the rezoning phase of Macquarie Park Innovation Precinct, Commissioned by NSW Department of Planning and Environment (DPE).

This Public Domain Plan is to be read in conjunction with Urban Design Framework prepared by AJC, the Design Guidelines and the suite of supporting technical reports, listed on the following pages.

Macquarie Park has well recognised landscape qualities which the Public Domain Plan accentuates, celebrates and maximises as key elements to inform and shape the future public domain streetscapes and open spaces.

- Respond to topography and to the experience of the local land form
- Respect and emphasise local Blue Green Grid. Building upon existing mature canopy along with physical Shrimpton Creek and hidden creeks, to encourage and strengthen those ecological networks.

The Plan develops on the work done by the team

led by NSW DPE for The Place Strategy, with a focus on a practical application of themes and concepts presented. In summary this Public Domain Plan presents:

- 9ha New or Enhanced Open Spaces - an increase in the provision of publicly accessible open space;
- Additional Tree Canopy - an understanding of the need to increase canopy across the neighbourhoods;
- Improved Street Network - Creation of improved movement throughout the neighbourhoods; and
- New And Improved Active Transport Connections - a focus on improved pedestrian and cycle access.

Furthermore, the Public Domain Plan embeds Country within the public domain. As directed by project studies, past and current, Design with Country is placed as a core aspect of the projects Vision and Principles, providing opportunities to embed these into the design of streets, open spaces, green connections and waterways.

- Declare and share relationships with earth, water and sky
- Supports journey, gathering, rest, nourish
- A place which holds safe knowledge and story
- Provides cultural pathways and safeguards for future engagement and involvement.





## 2. Introduction

### Project Background

Tract have been commissioned to support AJC Architects who are leading a consultant team for the urban design work stream of the first rezoning phase of Macquarie Park Innovation Precinct.

Known as MPIP Stage 1, commissioned by the NSW Department of Planning and Environment (DPE) this work is directed by the overarching strategic framework of the Macquarie Park Innovation Precinct Place Strategy ('Place Strategy').

The core task for Tract is the preparation of a Public Domain Plan to support the Urban Design Framework and the definition of planning controls to enable that master plan's delivery.

MPIP Stage 1 covers three neighbourhoods:

- *"Waterloo Park – Butbut (Heart)";*
- *"Shrimptons Quarter – Waragal Birrung (Evening Star)"; and*
- *"Macquarie Living Station – Gari Nawi (Salt-water Canoe)"*

These neighbourhoods are outlined in the Place Strategy and is an opportunity for Country to be a core foundation in establishing neighbourhoods with localised and recognisable characters, within the larger Macquarie Park precinct.

### The Place Strategy

The Place Strategy defines seven sub-neighbourhoods within Macquarie Park precinct, each of which was given targets for public domain and open spaces.

*"It is a place for people, characterised by its connectivity and the unique setting of Wallumattagal Country—a place of rivers and fertile wetlands with a deep history of learning, trade and culture."*

### Project Team

Tract are part of a larger project team supporting AJC who are leading the project the urban design work stream:

- AJC Architects: Head consultant & urban design lead.
- Tract Consultants: Urban design collaboration, landscape architecture and urban planning.
- WSP: Designing with Country
- Aurecon: Demography Study & Social Infrastructure needs
- Atelier Ten: Sustainability & Canopy Targets
- Arcadis: Utilities
- Ecological Ecology
- TTW: Flooding & Storm water
- City People: Public Art & Culture Study

There are also parallel workstreams to the urban design component, being led by different teams:

- Economic Feasibility & Affordable Housing Study, led by Atlas Economics for DPE
- Contributions Plan, led by GLN for DPE
- Strategic Transport Plan, led by WSP for TfNSW

Note: This master plan document sets out the long-term vision to guide future development in the Macquarie Park Innovation Precinct. The concepts, including all proposed design imagery, are subject to further detailed design and documentation, as well as traffic advice regarding the future circulation and street typologies.

# 3. Understanding the Strategic Framework



## 3.1 Literature Review

### 3.1.1 Macquarie Park Innovation Precinct - Place Strategy (DPE, Aug 22)

#### Purpose:

To create a better place, improve connectivity and find new ways for people to share ideas and technology, for the transformation to an innovation precinct of 170 hectares. Framework to create additional 20,000 jobs and 7,650 new dwellings over next 20 years.

#### Vision

A growing home to world-class businesses, innovation, research and education, Macquarie Park is competitive and resilient, with a stronger role within Greater Sydney's and Australia's economies.

It is a place for people, characterised by its connectivity and the unique setting of Wallumattagal Country—a place of rivers and fertile wetlands with a deep history of learning, trade and culture.

Macquarie Park is a place where people go to share ideas; a place that fosters creativity through interconnected relationships between people, businesses, places of education and a renewed connection to Country.

#### 6 Big Moves

1. Drive the transformation of MP into an innovation precinct
2. Scale and time new development to match infrastructure capacity
3. Rebalance transport uses
4. Prioritise and enrich the pedestrian experience
5. Create sustainable neighbourhoods within MP, each with their own identity and use
6. Connect to Country and deliver better quality open spaces

#### Current Public Domain

- Currently limited access to open space with small pockets of high-quality planting and canopy.
- The different university spaces could be better integrated

into the broader area, as could Riverside Corporate Park and surrounding residential areas—it is not an easy area to traverse on foot and is disconnected to culture and Ngurra.

- Short walks are limited to workers going to work from their transport stop or during lunch breaks. It is generally difficult for people to walk due to the long distances between safe crossings and limited direct paths.

#### Design Criteria

##### Movement:

- More accessible by foot, to encourage sharing and collaboration, with a dense path network
- Reduce private parking availability
- Safe and attractive walking and cycling infrastructure, integrated with open space and separated from traffic

##### Open Space:

- New open spaces and connections to quality natural areas, emphasising the strong relationship to Wallumattagal Country and heritage
- Connect to river and creek lines
- Protect solar access to public open space, winter solstice 10am-2pm

##### Tree Canopy:

- No net loss of canopy across precinct
- Target 35% in business zones, 40% in residential zones, 45% in open space areas

#### Neighbourhoods

- Waterloo Park - Butbut

(Heart) connects Herring Road Precinct and the university to Macquarie Park Station and could be a new green focus for Macquarie Park with commercial uses and a new activity hub.

- Shrimptons Quarter - Waragal Birrung

(Evening Star) is close to Shrimptons Creek Riparian Zone and, with its interface with Herring Road Precinct and the Ivanhoe

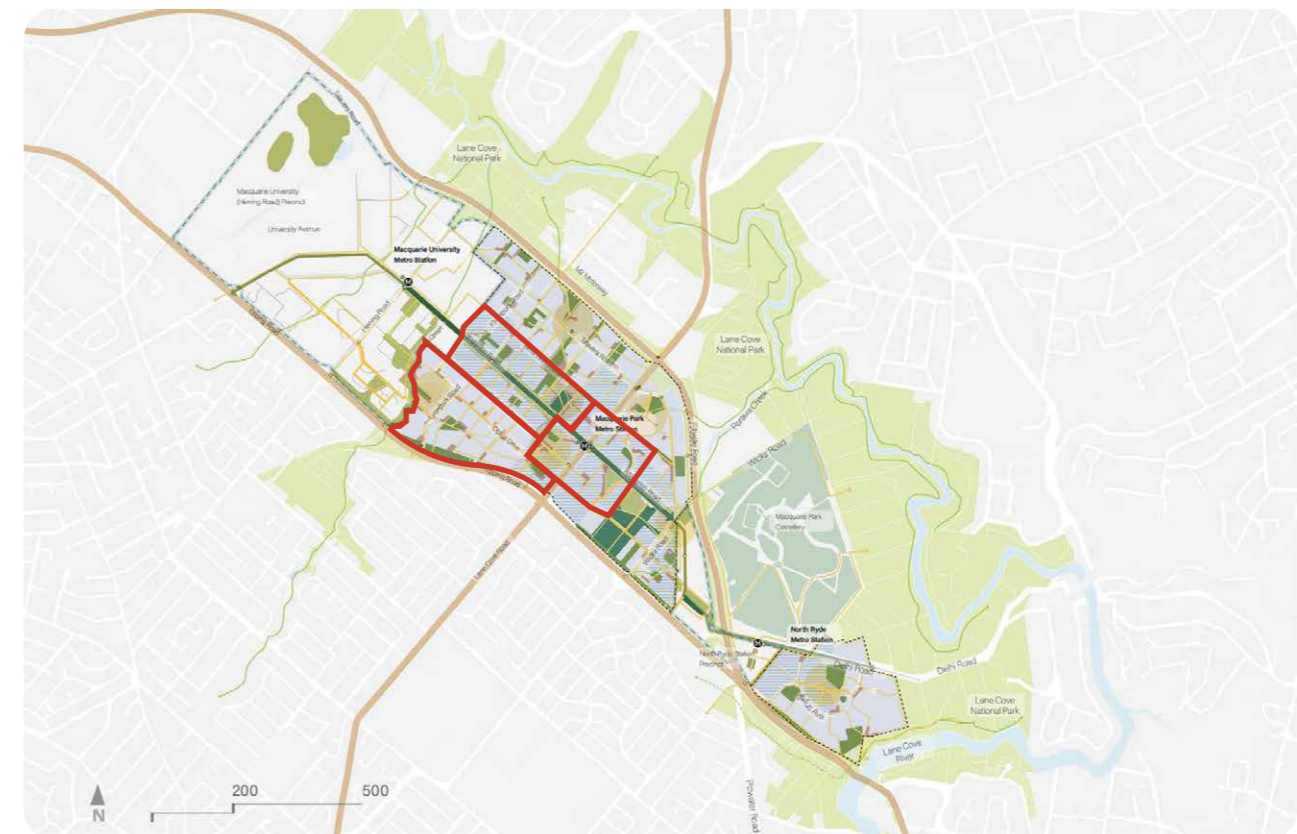
Estate will be subject to commercial and residential growth.

- Macquarie Living Station - Gari Nawi

(Salt-water Canoe) around Macquarie Park Metro Station will be a place of activity with a commercial core and new residential development

#### Place Strategy Submissions

Our brief review of the submissions received on the Place Strategy suggests that multiple environmental community groups raise the importance of the riparian corridors and the need for tree preservation and canopy cover, as well as prioritising biodiversity links.



#### Legend

##### Movement

- Existing Key Roads
- Existing Roads
- Planned New Roads
- Fine Grain Pathways

##### Open Space

- Waterloo Corridor
- Existing Open Space
- Planned New Open Space
- Fine Grain Open Space
- Fine Grain 'Woven ways'

##### Land Use

- Existing Metro Stations
- Commercial Core
- Adjacent Precincts
- Area for Diversification (as recommended by Pathway 2)
- New Activity Hubs
- Fine Grain Active Frontages





### 3.1.3 Wallumatta Macquarie Park Draft Country Centred Design Framework (Old Ways, New, March 21)

#### Purpose

Companion to the Strategic Master Plan to share how Country Centred Design informs the conception, application and implementation of the Master Plan. Informs open space approaches, place naming, land use, transport, place-making and governance. Objective is to improve the experience of place by reconnecting it to culture.

*The land on which Macquarie Park stands today was, is and always will be Wallumattagal Country - a place of rivers and fertile wetlands with a deep history of learning, trade and culture.*

*Wallumatta is the place of the Snapper fish (Wallumai) and the Wallumattagal are the people of the Snapper.*

Current model for development came from Palo Alto, CA and Stanford University- it does not speak to or respond to Country.

#### Turrumburra River as Metaphor

The river would have been a trade and travel route, cared for by the Wallumattagal while the river cared for them.

*'The river is used as a strategic metaphor while also centring us and our work to the lifeline it has always been for Wallumattagal.'*

- Quality of Movement: following desire lines/natural paths Woven ways- increase walkable links, quality of interchanges, parking innovation, respond to the natural features of Ngurra
- Quality of Place: connects to Country, story, identity Belonging and living culture- increase opportunities to connect to deep history of Country, well-connected open spaces, diversify cultural and social infrastructure, interconnect business, environment, cultural and social infrastructure
- Strengthening Business- networks and value exchange Reciprocity, diversity and sustainability

#### Neighbourhoods

Allow us to look in more granular way at the opportunities, 'place of many places'. Creeks mark a natural separation.

#### Badu Nawi (Freshwater Canoe) - Waterloo Corridor

*'The Nawi is the spiritual canoe that carries us all along the river of life.'*

- Main central neighbourhood and open space - new 'green' focus. Green 'welcome to Wallumatta' as point of arrival from station/bus.
- New TfNSW headquarters and open spaces important new anchor, and science and technology buildings sit around Waterloo Road.
- Healing heart of Wallumatta translates to a corridor of water, healing plants (Lilly Pilly and lemon myrtle: sebacea ovata, doryphora sassafras, smilax glycerphera, bark of Alstonia restricta, Wilga: Eurodia vitiflora)
- Lifeline learning offer on the alignment of Porters Creek
- Active transport corridor (walking trails, cycle ways, possible micro mobility corridors) weave through and across water corridors proposed

#### Waragal Birrung (Evening Star) - Shrimptons Qtr

*'Waragal Birrung guides us along its path. It connects us to higher understandings and communicates continuity'*

- Optus Campus - important economic anchor - telecoms cluster and collaborative working
- Creek regeneration of Porters Creek and increased access to Shrimptons Creek (to be renamed as Bangali (weaving) Creek) = weave uses, people, knowledges and places.
- Adjacent Ivanhoe Estate redevelopment (could be renamed to reveal Ngurra) linked by new footbridge - opportunity for cultural spaces to mix with commercial use

#### Gari Nawi (Salt-water Canoe) - Macquarie Living St.

*'The Salt-water Canoe carries us through the stream of life. Within it is the fire, activating our energies, our productivity, our movement and connectivity'*

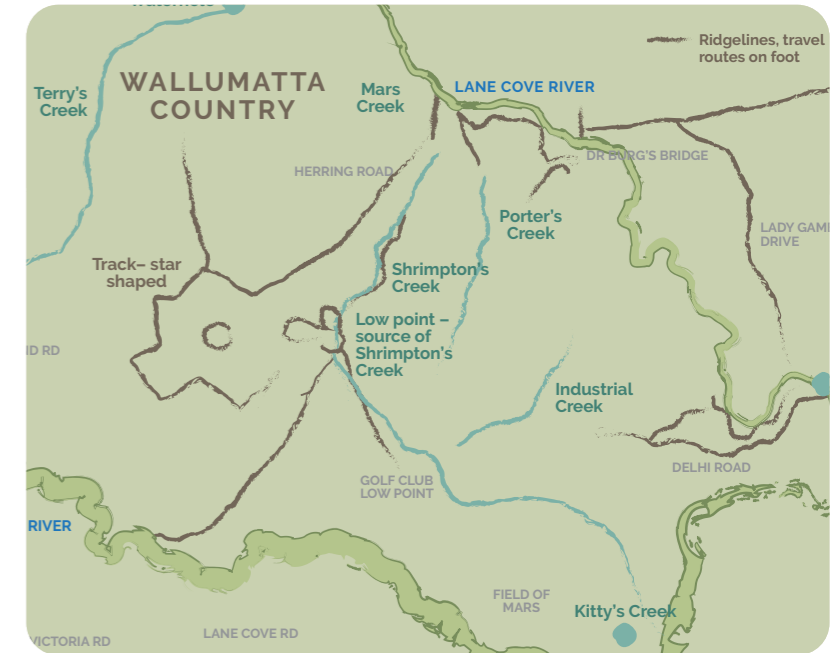
- High levels of metro connectivity and bus routes and Hyundai's HQ -strong brand and identity
- Junction of Lane Cove Road and Waterloo Rd is high point with views down over creek lines to the river and National Park
- Intensive development should include delivery of cultural spaces and activity areas that benefit from footfall
- Metro station and connections into concourse to be optimised.
- Safe crossings over Lane Cove Road critical connection, and Woven Ways through shared spaces - links

#### Place Vision

Its current fine grain, intersecting grids and urban fabric is supported by a permeable, constant link to deep time knowledges and rich living culture. The presence and energy of Wallumattagal is both palpable, and visible within the contemporary urban fabric, demonstrating how timeless precepts of Country intersect within a contemporary business district, dedicated to creating new knowledge and higher learning.

#### Place-making Initiatives (Public Domain focused)

- Digital interpretation and way finding strategy
- Public space locations for Darug-led community ceremony
- Public art program
- Commit to restoring rivers to swim-able by 2050
- Pathways through open space that adhere to natural creek lines and contours of Ngarra
- Hierarchy of pedestrian thoroughfares
- Community gardens initiative



DRAFT - Subject to Review by Traditional Custodians & Knowledge Holders



NOTE - 'Place holder' naming Dharug language to undergo proper consultation and development process

### 3.1.4 Macquarie Park Pathways Paper & Background Spatial Framework (DPIE, Oct 20)

#### Purpose

Part of the public consultation in the development of a master plan for the investigation area

#### Consultation Findings

Current strengths of the area include its metro connectivity, the University and technology hub and the natural assets of Lane Cove National Park.

Challenges include walk-ability and a sense of place which supports its role as an innovation hub

Campus style development provides internal amenity, often inaccessible to wider community

Large block forms and wide roads with long signals

Current context: 93% commercial, 6% community, 1% retail

#### Pathway Options

Three different pathways through which the vision, objectives and Spatial Framework can be delivered, all three retain a commercial core and support 20,000 new jobs by 2036.

#### 1. Jobs

96% commercial, 4% community land use

Total Est GFA: 2,700,000m<sup>2</sup>

#### 2. Jobs and Homes

71% commercial, 24% residential, 4% community, 1% retail

Total Est GFA: 3,090,000m<sup>2</sup>

#### 3. Diversify

59% commercial, 35% residential, 4% community, 2% retail

Total Est GFA: 3,470,000m<sup>2</sup>

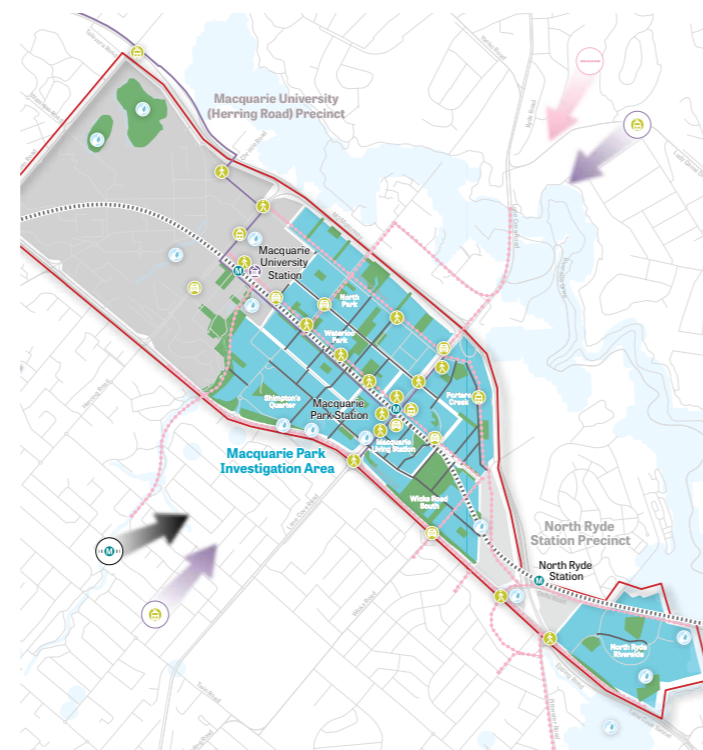
### 3.1.5 Strategic Infrastructure & Services Assessment (Greater Cities Commission, Sept 22)

#### Purpose:

- Inform the MPIP Place Strategy and Master Plan prepared by DPE, and seeks to consider the need to support and facilitate the desired place outcomes.
- Considers the impact of growth and change in three parts of Macquarie Park Corridor (MPC) over next 15 years:
  1. North Ryde Metro Station Urban Activation Precinct
  2. Macquarie University (Herring Road) Urban Activation Precinct
  3. Macquarie Park Investigation Area (MPIA)
- Identifies for further investigation the infrastructure and services needed to support recent and approved development, as well as development anticipated under existing controls and further rezoning.

#### Green and Blue Infrastructure Needs Assessment:

- Only 41% of future residents are currently within 5 minute walk (400m) to passive open space
- 20% average tree canopy cover, compared to 35% target for most neighbourhoods (target is 35% in business areas and 40% in residential areas)



### 3.1.6 SISA Macquarie Park, Green Infrastructure Report (DPE, March 21)

Growth Pathway	Target
1. An intensification of commercial land use to create an additional 20,000 jobs by 2035; no proposed change to the planning controls to allow for additional residential development	All residents and workers located within 400m of passive open space (the same as the baseline)
2. A diversification of commercial and non-commercial uses with some rezoning to create new residential areas and supporting infrastructure; 20,000 additional jobs and 7,700 additional dwellings by 2035	<ul style="list-style-type: none"> <li>• All residents and workers in industrial and commercial zones to be located within 400m of passive open space</li> <li>• All residents and workers in high-density residential and mixed-use zones to be located within 200m of POS</li> </ul>
3. The intensification and build out of commercial uses within the MPIA to deliver 20,000 new jobs by 2035; supplemented by the introduction of a more intensified residential areas and mixed-use precincts, accommodating an additional 12,700 residents	All residents and workers located within 200m of passive open space

This assessment focused on increasing accessibility to passive open space. It is recommended that for each Growth Pathway:

- New access points to existing open space be created
- New open space proposed by Arup (which increases across the Growth Pathways) be delivered, and
- The City of Ryde's Waterloo Road Strategy – a 1.9 km long linear park, be implemented

### Green Infrastructure Report, Tree Canopy Addendum (DPE, March 22)

#### Canopy Targets

High-level targets suitable for large sites and precinct planning. These targets were included in the draft Design and Place SEPP via the draft Urban Design Guide (UDG) and are intended to be a consideration for all precinct planning projects

Targets adopted are:

- Minimum 45% for open space (excluding courts and fields)
- 35% for streets
- 35% for business areas
- 40% for residential areas

Neighbourhood	Tree Canopy - proposed planting
1. Waterloo Park 'Badu Nawi'	701 trees (to reach 35% canopy)
6. Shrimptons Quarter 'Waragal Birrung'	778 trees (to reach 35% canopy)
7. Macquarie Living Station 'Gari Nawi'	610 trees (to reach 35% canopy)

### 3.1.7 Draft Strategy for Waterloo Road (City of Ryde, March, 19)

#### Purpose

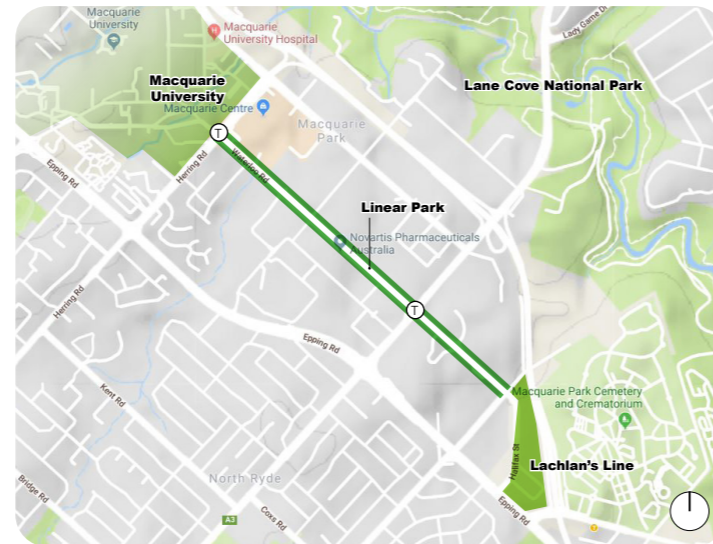
The 1.9km Linear Park will be a publicly accessible open space, which provides passive recreational opportunities and serves as a green spine through the city centre.

#### Location

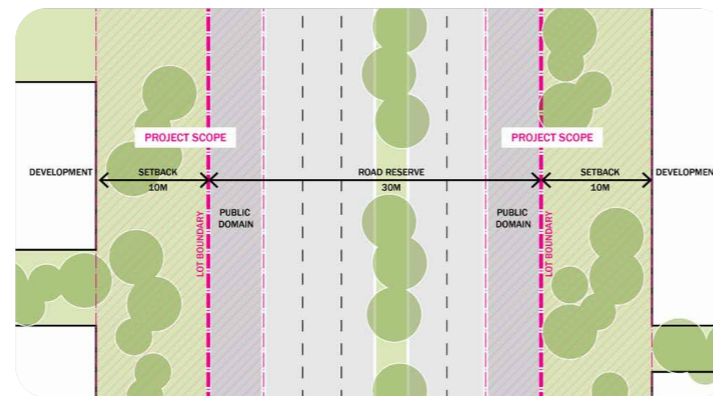
This Park will be located within the privately owned but publicly accessible street setback zone on either side of Waterloo Road, with a minimum width of 10m plus the existing public domain (approx. 4-5m).

#### Key Points:

- The design response is categorized as 'urban edge' or 'park like' depending on the future character in different sections.
- Points of interest, such as social and resting spaces, play spaces, fitness and public art features are inter-connected along the route, such as around building entries.
- Uses that activate building frontages to the park
- Existing mature trees are to be retained where possible, with low shrub planting to provide a green buffer to Waterloo Road.
- Apply a consistent landscape approach to entries, street corners, stations and bus stops,



Source: Draft Strategy for Waterloo Road, showing connection to recreational space in Macquarie University and Lachlan's Lane, as well as connectivity to 2 stations



Source: Hassell, 2020



Full Circuit:	Core Circuit:	Quick Circuit:	
3.8km	2km	1.2km	Signalised crossing point
Walking - 50-60 minutes	Walking - 25-30 minutes	Walking - 15-20 minutes	Connection to adjacent recreational space
Jogging - 25-30 minutes	Jogging - 10-15 minutes	Jogging - 5-8 minutes	

Source: Draft Strategy for Waterloo Road, showing lunch-time/after-hour exercise circuits for workers, as well as local residents. Note that there are limited crossing opportunities (yellow) and Waterloo Road carries a high volume of traffic. To the right, Hassell's master plan shows an increased number of crossing points proposed, and the proximity to bus stops.

### 3.1.8 Waterloo Road Master Plan (Hassell, Aug, 20)

#### Movement corridor to vibrant street

#### Summarising the Objectives:

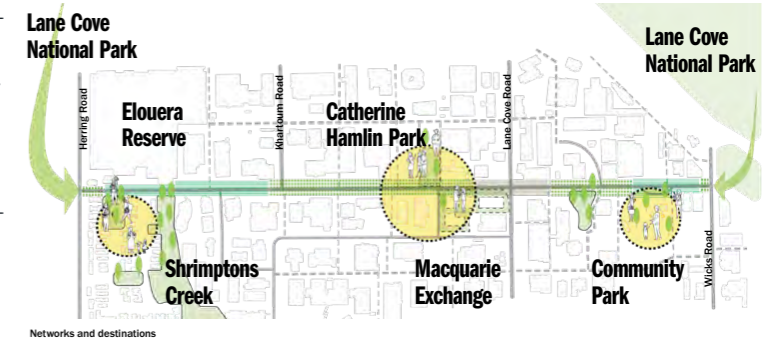
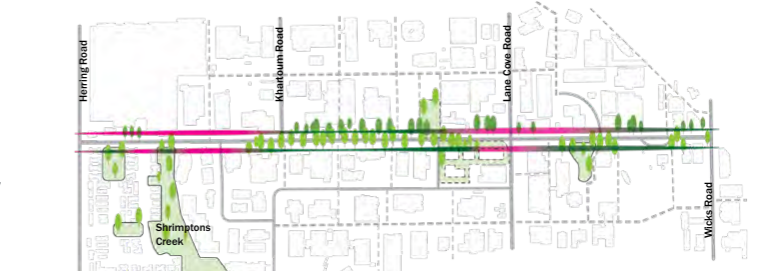
- Promote active transport as a safe, convenient alternative for all, particularly women. Also promote public transport.
- Opportunities for physical activity, passive recreation and social interaction
- Create 'places for people'
- Enhance connectivity of street network
- Enhance existing landscape character and biodiversity, incorporate WSUD

#### Vision

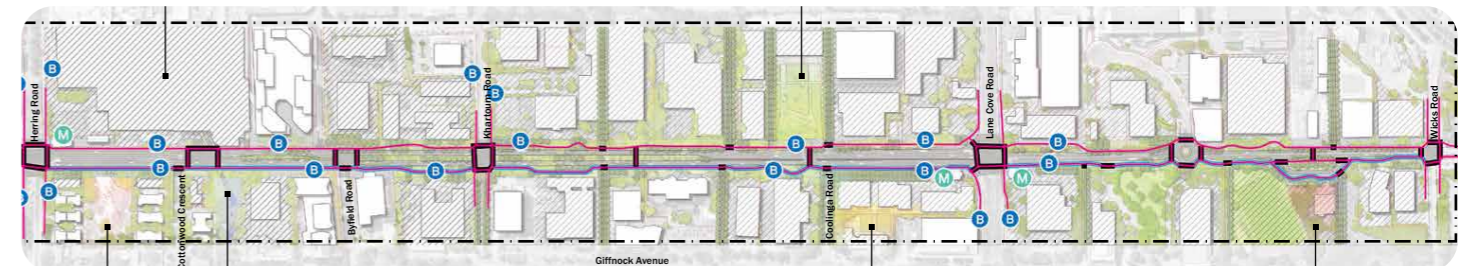
A resilient corridor, destinations of activation and legible, permeable and cohesive

#### Structure - 3 Frameworks:

1. East-West & North-South
2. Forest & Urban
3. Networks & Destinations



Source: Waterloo Road Master Plan, Hassell, 2020



### 3.1.9 Open Space Future Provision Strategy (City of Ryde/SGS, May 21)

#### Purpose

Identifies demand for open space and recreation facilities currently and in the future, and priorities for addressing gaps.

#### Current Context

Across the City of Ryde, there is currently 2.89ha/1000 people (traditional benchmark is 2.83ha/1000), but by 2036 this will fall to 2.04ha/1000 if no additional space is provided.

Macquarie Park and North Ryde are included in the current areas that have significant open space provision shortfalls.

#### Additional Demand

The modelling for this study is based on +18,198 people (DPE forecasts before the finalisation of the Strategic Investigation Area planning). This does not include the worker population and its growth (studies indicate 1 worker = 30% of 1 resident demand).

#### Delivering Open Space in Macquarie Park

The high density form of development in MP will mean that open space will need to act as backyard, meeting place, event space and play/exercise space for a range of age groups. All high density housing areas will need access within 200m. The GAO specifies access to 3000sqm, but accepts Min 1500sqm in certain cases.

This will require a hierarchy and diversity of connected, quality open spaces, including new regional/destination and district spaces on larger sites, and local, semi-private (communal) and private spaces.

Some spaces already developed:

- Lachlan's Line, Catherine Hamlin Park

Some in close proximity:

- Blenheim Park expansion
- Holt Park extension
- County Road corridor
- North Ryde Hospital

#### Recreation Provision

Macquarie Park is anticipated to generate substantial demand across all facility types, including full sized fields and ovals, and is a major opportunity to see large new facilities delivered.

Some facilities are currently in oversupply and will remain so under the 2036 projections used (junior/modified fields, outdoor courts and lawn bowls/croquet). The need for other facilities will be addressed via City-wide planned and additional projects.

#### Macquarie Park Additional Recreation and Open Space Demand to 2036

##### Open space network

- 36ha of open space – distributed to ensure that all residences are within 200m of 1,500m<sup>2</sup> minimum space (high density) and 400m of 3,000m<sup>2</sup> minimum (medium and low density)
- 1 major destination park (5ha+)
- 3 or 4 district parks (2h to 5ha)
- 7 local parks (0.5 to 1.5ha)

##### Sport and recreation facilities

- 5.5 full sized fields or ovals
- 1.5 Junior/modified fields or ovals
- 10 outdoor courts
- 2 indoor courts
- 1 lawn bowls/croquet courts
- 0.3 golf course
- 475m<sup>2</sup> of aquatic space

Source: Open Space Future Provision Strategy - Technical Appendix for Adoption, Table 50

### 3.1.10 City of Ryde, Local Strategic Planning Statement (2019)

#### Macquarie Park Vision

A premium location for globally competitive business with strong links to university and research. A vibrant, accessible CBD that balances work, recreation and entertainment. Housing focused in North Ryde and Macquarie Uni Station.

High-quality, well-designed, safe and liveable environment that reflects the natural setting, with three accessible and vibrant train station areas providing focal points.

#### Current Context

- 465 on-street parking spaces
- 3 stations, several bus routes, modal interchange
- 900,000sqm office floor space (2016)
- Lane Cove River National Park adjacent, 4 creeks (though mostly piped), tree coverage/deep soil zones

#### Targets

- 60/40 public transport/private vehicle split
- 200m road grid maximum to increase ease of movement
- Increased active public open space

#### Priorities & Actions

- Focus around activity hubs (one as civic heart, each with defined role): North Ryde Station, Macquarie Park Station, Macquarie University Station, Cox's Road
- Interactive, flexible, inclusive public spaces with enhanced street activation and night-time economy
- Economically, environmentally and socially sustainable spaces, enhance valued green character and native trees
- Acknowledge Waterloo Road as 'main street' and place-making focus, with cross roads at a 200m maximum.
- Ease movement (implement Council's road network) & transport infrastructure improvements (40% PT), convert existing private parking to shared
- Improve active transport network and connectivity, and support walkability with wider footpaths and connections to parks, centres, schools etc.
- Sense of place/identity - CSIRO and Macquarie Uni as key to establishment of precinct to be celebrated
- Encourage people to linger in the public domain with shade (trees, awnings and shade structures), seating, events, markets, meeting places.

### 3.1.11 Sydney Green Grid

Sydney Green Grid establishes a recreational, hydrological and ecological strategy to establishing a green-blue network across Sydney region. Green Grid principles are adopted within this masterplan to guide and inspire the creation of a strong and connected green-blue infrastructure across the neighbourhoods.

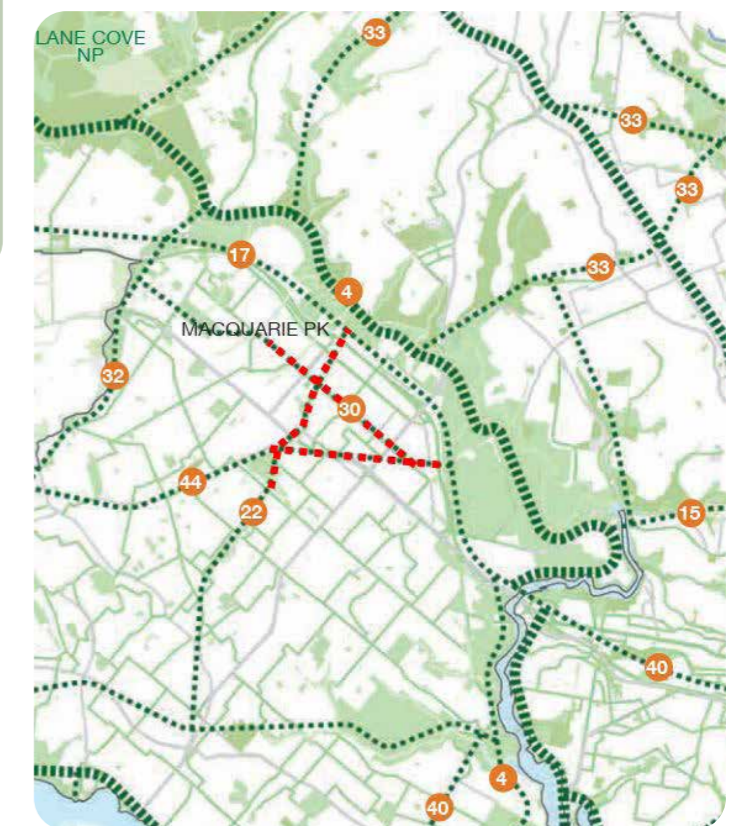
#### Priority Projects

3 are identified within the Green Grid Northern District strategy that directly affect this study area for Macquarie Park:

No. 22 Shrimptons Creek Green Link: Eastwood to Macquarie Pk

No. 30 Waterloo Road Green Link, Macquarie Park

No. 44 Road Reserve Corridor: Macquarie Park to Eastwood



# 4. Understanding the Place

4.1 Existing Place Audit

4.2 Existing Open Space

4.3 Existing Tree Canopy & Vegetation

4.4 Existing Elevation & Slope

4.5 Existing Street Hierarchy & Parking

4.6 Existing Walkability to Transport Hubs

4.7 Existing Walkability to Open Space

4.8 Existing Public & Active Transport Networks

## 4.1 Existing Place Audit

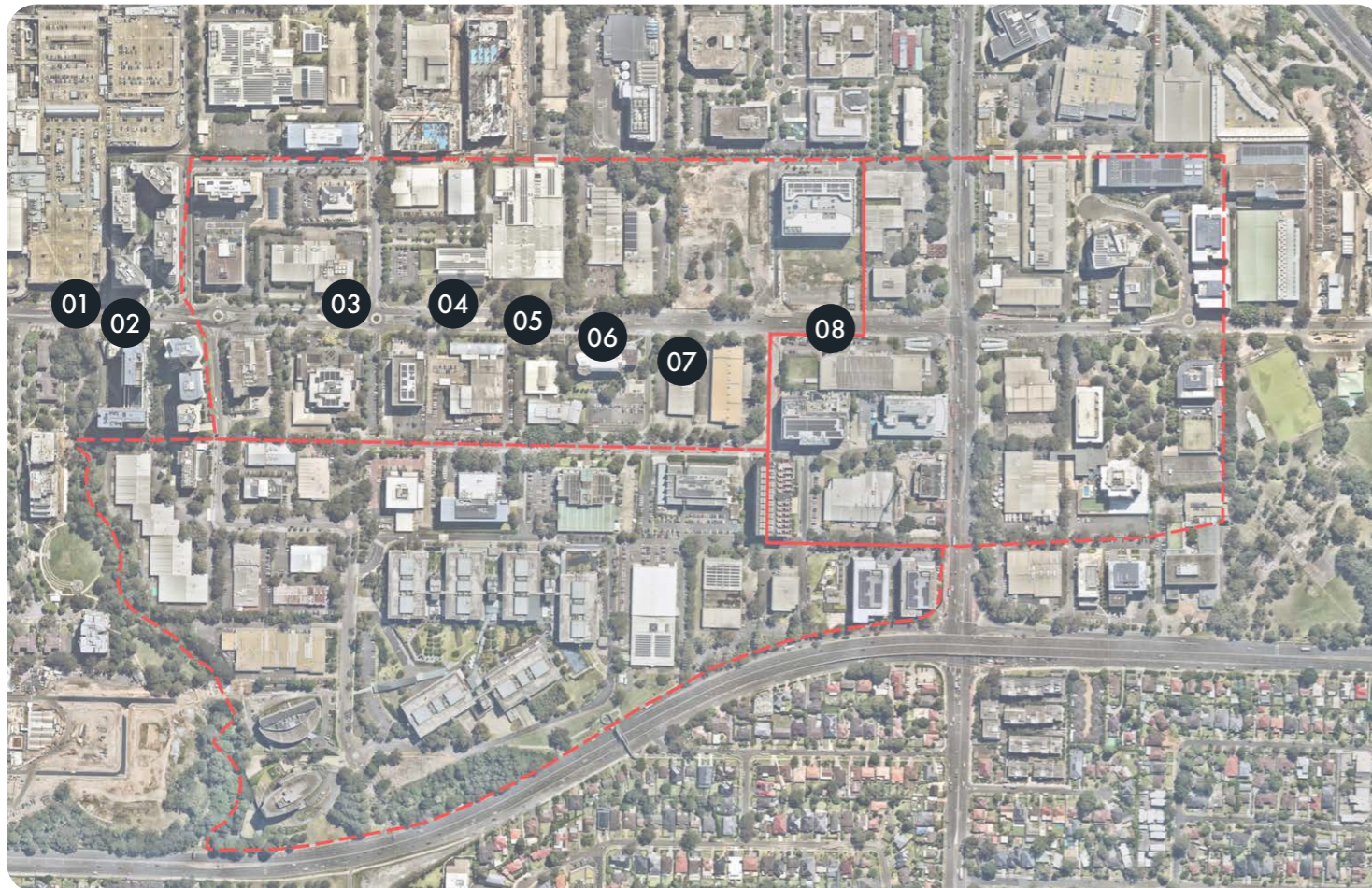
### BUTBUT (WATERLOO PARK)

*'The Nawi is the spiritual canoe that carries us all along the river of life.'* - Ref: Wallumatta Macquarie Park Draft Country Centered Design Framework (Old Ways, New, March 21)

- Waterloo Road, a main central spine, providing welcome/gateway moments to 'Wallumatta' at points of arrival from Metro stations/bus.
- Benchmarking urban environment/streetscape near the northern end of Waterloo Road, the established linear park in front of the new mixed use developments (Fig. 1, 2 & 7)
- 'Forest' character in the middle section of Waterloo Road, tall trees in the median and both sides of road (Fig. 5 & 6)
- Lack of canopy and shades toward the southern end

of Waterloo Road, industrial character/hard pavement dominant (Fig. 8)

- New TfNSW new headquarters and open spaces under construction, which becomes the important new anchor (Fig. 3)
- Limited pedestrian crossing opportunities along Waterloo Road, exacerbated by design of roundabouts with fencing (Fig. 3)
- Active transport network (cycle ways, shared ways) along Waterloo Road and linking to the surrounding neighbourhoods and water corridor

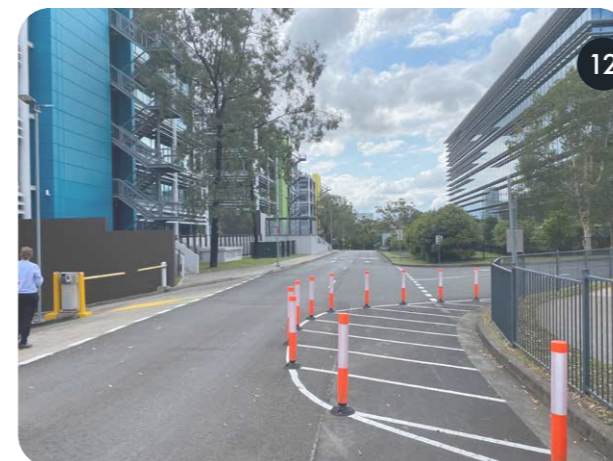
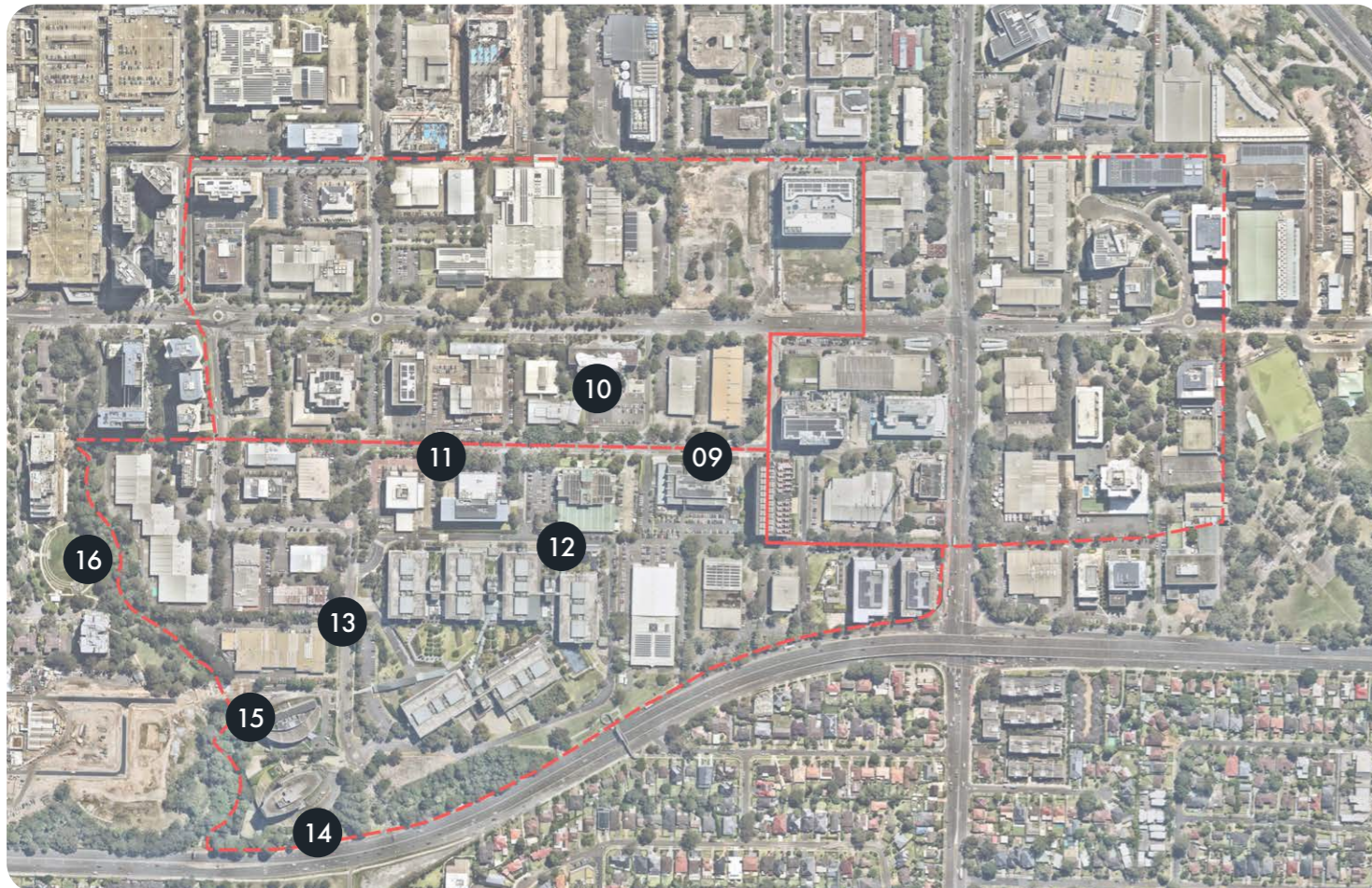


Source: Tract Site Photos

## WARAGAL BIRRUNG (SHRIMPTONS QUARTER)

*'Waragal Birrung guides us along its path. It connects us to higher understandings and communicates continuity' - ref: Wallumatta Macquarie Park Draft Country Centered Design Framework (Old Ways, New, March 21)*

- Optus Campus - important economic anchor - telecomms cluster and collaborative working
- Creek regeneration of Shrimptons Creek and increased access to Shrimptons Creek Riparian Zone (to be renamed as Bangali (weaving) Creek) = weave uses, people, knowledges and places.
- Adjacent Ivanhoe Estate redevelopment (could be renamed to reveal Ngurra) linked by new footbridge - opportunity for cultural spaces to mix with commercial use.
- The pedestrian access from Giffnock Lane and Lyonpark Road into Optus Drive displays several level changes and construction barricades that can restrict the permeability of workers travelling to work. (Fig.12, Fig.13)
- Shared pedestrian pathways are clearly indicated at the entry of Optus (Fig, 11) to highlight its walkability around the campus as well as its linear accessibility.
- Limited accessible walkways can hinder user's ability to use the proposed open space allocated above Giffnock Avenue (Fig. 10)
- Open and pedestrian friendly access to the open space above Epping Road (Fig. 14, Fig 16) indicates its potential in increasing the precinct's walkability and permeability into the Shrimptons Creek Riparian Zone. (Fig.15)



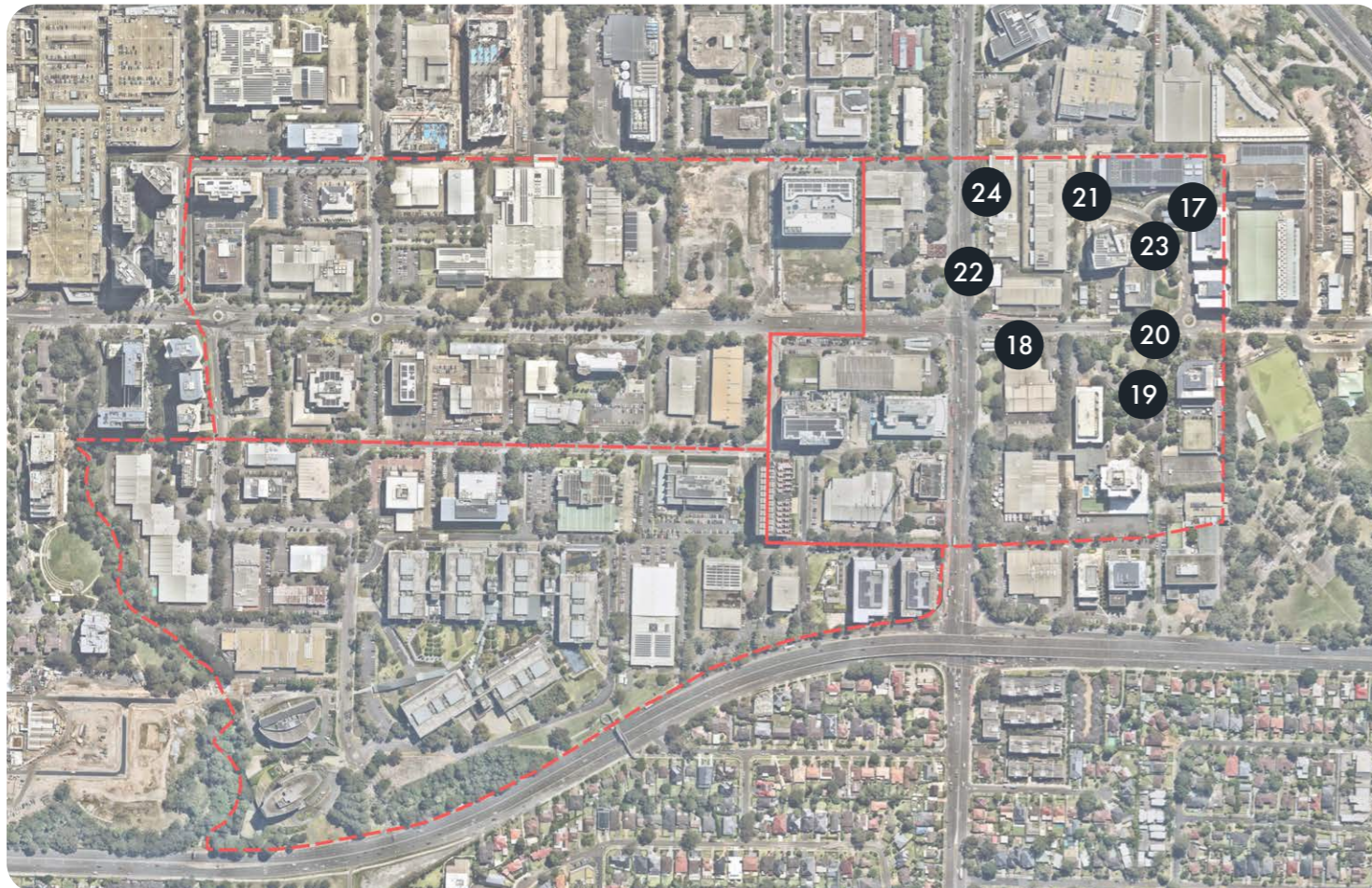
Source: Tract Site Photos



**GARI NAWI (SALTWATER CANOE) MACQUARIE LIVING STATION**

*'The Salt-water Canoe carries us through the stream of life. Within it is the fire, activating our energies, our productivity, our movement and connectivity' - ref: Wallumatta Macquarie Park Draft Country Centered Design Framework (Old Ways, New, March 21)*

- High levels of metro connectivity and bus routes and Hyundai's HQ -strong brand and identity.
- Junction of Lane Cove Road and Waterloo Rd is high point with views down over creek lines to the river and National Park.
- Intensive development should include delivery of cultural spaces and activity areas that benefit from footfall.
- Metro station and connections into concourse to be optimised. (Fig.18)
- Safe crossings over Lane Cove Road critical connection, and Woven Ways through shared spaces.
- Restricted pedestrian crossing between Epping Road and Lane Cove Road hinders user's convenience to travel further - this could lead to decreased walkability among the main roads of Macquarie Park. (Fig.17)
- A safe and well planned open space with decent tree coverage around and below Thompson Hockey Centre (Fig.19) provides a semi-private and semi-public green space highlights its potential to mediate the area's lack of walkability and encourage visitors and workers' use of open spaces. (Fig.20, Fig 22, Fig.23)
- Level change along Epping road continues to reinforce the lack of walkability among main roads - restricting individual's ability to access street services.



Source: Tract Site Photos

## 4.2 Existing Open Space

### Overview

The whole area between the Parramatta and Lane Cove Rivers can be identified by the Aboriginal name Wallumatta, or place of the Snapper fish, and was characterised by Sydney Turpentine-Iron bark Forest. Having once formed part of Sydney's Green Belt, it was rezoned in the 1960s to form the employment area, which created a disconnection to culture and Country.

Macquarie Park is predominantly a built, urbanised commercial business park environment with limited open space and biodiversity. Landscaped areas are common attachments to buildings, however they are usually inaccessible to the public. There are several privately-owned-public spaces (POPs) with some level of access or visibility, but these are usually reserved for employees.

Shrimptons Creek Riparian Zone running north-south along the boundary of the Shrimptons Quarter precinct, provides a linear corridor of usable public space, but access is challenging and it is difficult to walk between open space destinations.

In the surrounding context, Lane Cove National Park fringes the north-eastern bounds of the Park, providing 670 hectares of regional open space and a leafy tree canopy, and Macquarie University campus contributes to the urban landscape to the north-west.








### Opportunities

- There is an opportunity to reconnect with Country to deliver better quality open spaces that respond to the site's deep culture
- Creek spaces and historic lines (Woven Ways) can be opened up and enhanced both as open water and as places of increased biodiversity and green infrastructure
- Shrimptons Creek Riparian Zone runs along the north-west of the study area and access along and through the creek line to the new Macquarie Mid Town residential area could be enhanced
- Waterloo Park precinct includes the Waterloo Road Master Plan area which proposes a 1.9km linear park to include passive recreation and a green spine.
- The Metro provides good accessibility to the proposed Central Park
- Small pocket parks and seating areas within the public realm would provide more opportunity for open space access for informal catch ups and socialising at lunchtimes.

### Constraints

- Much of the land is privately owned in large holdings by commercial corporations. Whilst there are open spaces within the commercial developments, they can be disconnected and unwelcoming or inaccessible to the public.
- There is a disconnection with the creek environment and Country of Wallumatta. Historic creek lines run through sites that have been recently developed and are therefore unlikely to be redeveloped in the near future.
- Future proposed development must be carefully considered to protect solar access and prevent overshadowing of open spaces, e.g. on Winter Solstice from 10am-2pm.
- The block size and permeability of the walking environment currently restricts access to existing open space, which must be addressed to achieve vibrant, active spaces.

Neighbourhood	Existing Open Space		Approved Open Space		Total Existing OS	Place Strategy OS Target	Open Space Gaps	Place Strategy Proposed OS
	Public OS	Private OS	Public OS	Private OS				
<b>2. Butbut (Waterloo Park)</b>		<b>14,820</b>	<b>7,011</b>	<b>13,337</b>	<b>35,168</b>	<b>50,000 -</b>	<b>14,832</b>	<b>6,399</b>
<b>3. Waragal Birrung (Shrimptons Quarter)</b>	<b>16,667</b>	<b>8,512</b>	-	-	<b>25,179</b>	<b>45,000 -</b>	<b>19,821</b>	<b>23,377</b>
<b>4. Gari Nawi (Macquarie Living Station)</b>	-	<b>6,024</b>	-	<b>2,030</b>	<b>8,054</b>	<b>14,000 -</b>	<b>5,946</b>	<b>2,330</b>

-  5 MINUTES WALKING RADIUS FROM FEY TRASPOT HUB
-  PUBLIC OPEN SPACE IN CONTEXT
-  PRIVATELY OWNED OPEN SPACE
-  PUBLIC OPEN SPACE (RE1 ZONING)
-  DA APPROVED PRIVATELY OWNED OPEN SPACE
-  HABITAT CORRIDOR
-  METRO



## 4.3 Existing Tree Canopy & Vegetation

### Overview & Targets

Currently the MPIA is covered by an average tree canopy of around 19%. There is some remnant native flora in patches of open space, such as along the Shrimptons Creek Riparian Zone, and along the streets there are native eucalyptus.

In 2012, City of Ryde adopted a Street Tree Master Plan to strategically plant and manage public trees. Council's efforts to plant more trees in our City is aligned with the NSW Government's 5 Million Trees for Greater Sydney program, which aims to increase the tree canopy of Greater Sydney to 40%.

As part of the Macquarie Park Investigation Area Masterplan, a green infrastructure needs assessment has been undertaken. In the strategy, tree canopy projects have been identified to increase canopy cover to 25% in our neighbourhoods (15% in CBD areas). The identified projects include tree planting along Waterloo Road as part of the Waterloo Road Strategy, street tree planting on new road networks, as well as embellishment of existing and proposed open spaces. Trees planted along the road network will be medium sized trees and have a canopy diameter of 50 square metres.

### Opportunities

- Reaching the 25% target within Badu Nawi (Waterloo Park) will require approx 535 additional trees, Waragal Birrung (Shrimptons Quarter) requires 407 additional trees and Gari Nawi (Macquarie Living Station) requires 369 additional trees.
- This additional urban tree canopy will provide a range of benefits to the three neighbourhoods, including:
  - reduced land surface temperature, mitigating the UHI
  - providing habitat to increase biodiversity
  - protecting the health of the creeks and waterways
  - improving air quality
  - improving the walkability and street amenity
- There is an opportunity to increase native vegetation, as well as tree cover, along major streets.
- Opportunity to further increase precinct tree cover with the inclusion of increased well vegetated open spaces within development lots .
- The Waterloo Road Strategy can be adopted within this Plan, to retain existing mature trees and encourage greater tree planting zones within the public domain and building setbacks.
- The Sydney Green Grid (North District) identifies three priority projects that influence this study area, as identified in the Literature Review. There is opportunity to incorporate these into this master plan, including:
  - 22. Shrimptons Creek Green Link: Eastwood to Macquarie Park
  - 30. Waterloo Road Green Link
  - 44. Road Reserve Corridor: Macquarie Park to Eastwood

### Constraints

- Existing open space areas are relatively limited, so the majority of additional planting will be required within public streets, as well as encouraged within privately owned open spaces.
- Roads need to accommodate a variety of functions, including shared paths, bus lanes and currently high traffic volumes, which reduces the availability of space for street tree planting.
- Many of the corporate headquarters currently feature large building footprints and commercial plaza entries with little planting or non-native species (e.g. Topiary hedges).
- There are a variety of steep level changes, particularly around site boundaries, which may also impact space available for additional street tree planting.





## 4.4 Existing Elevation & Slope

### Overview

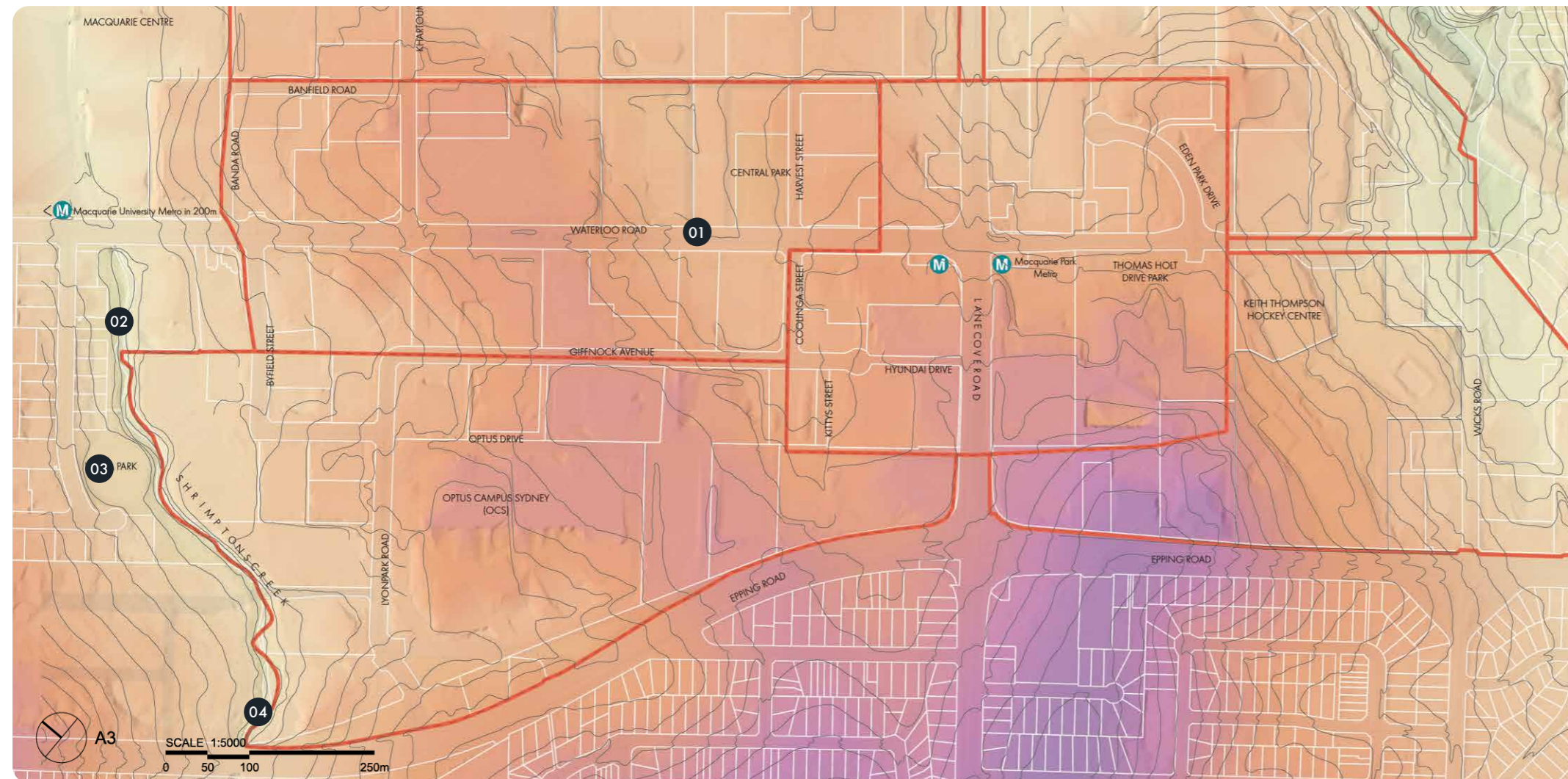
Macquarie Park sits to the south of Lane Cove River, and the elevation rises from here, as well as from the contributing creek lines, to the south with high points along Epping Road. There is also a high point running through the centre of Waterloo Park and Shrimptons Quarter, which creates some fairly undulating topography along Waterloo Road and Giffnock Avenue. The low points of the proposed 'Woven Ways' which sit on historic creek lines are visible in this elevation plan,

### Opportunities

- Good public domain and open space design can embrace the topography to create areas of interest and maximise views
- The low points of the historic creek lines provide an opportunity to reinterpret the hydrology of Macquarie Park, with opportunities for water sensitive urban design (WSUD)

### Constraints

- Steep areas provide a barrier to walkability and inclusive access
- Level changes have been previously dealt with by retaining walls between sites, creating a barrier to access
- Low points around creek lines can be potential flood-prone sites which must be carefully managed



Slope up Waterloo Road towards Metro



Low point - Shrimpton's Creek corridor



Elevation designed into amphitheatre at Wilga Park



Shared path under Epping Road

## Overview

Existing slopes represent the manipulated ground plane of Macquarie Park, which incorporates large land holdings and building footprints on flat sites, with significant retention around site boundaries; where cut and fill retained within each site results in distinct level changes at each boundary. This is a repeated pattern across all three neighbourhood precincts.

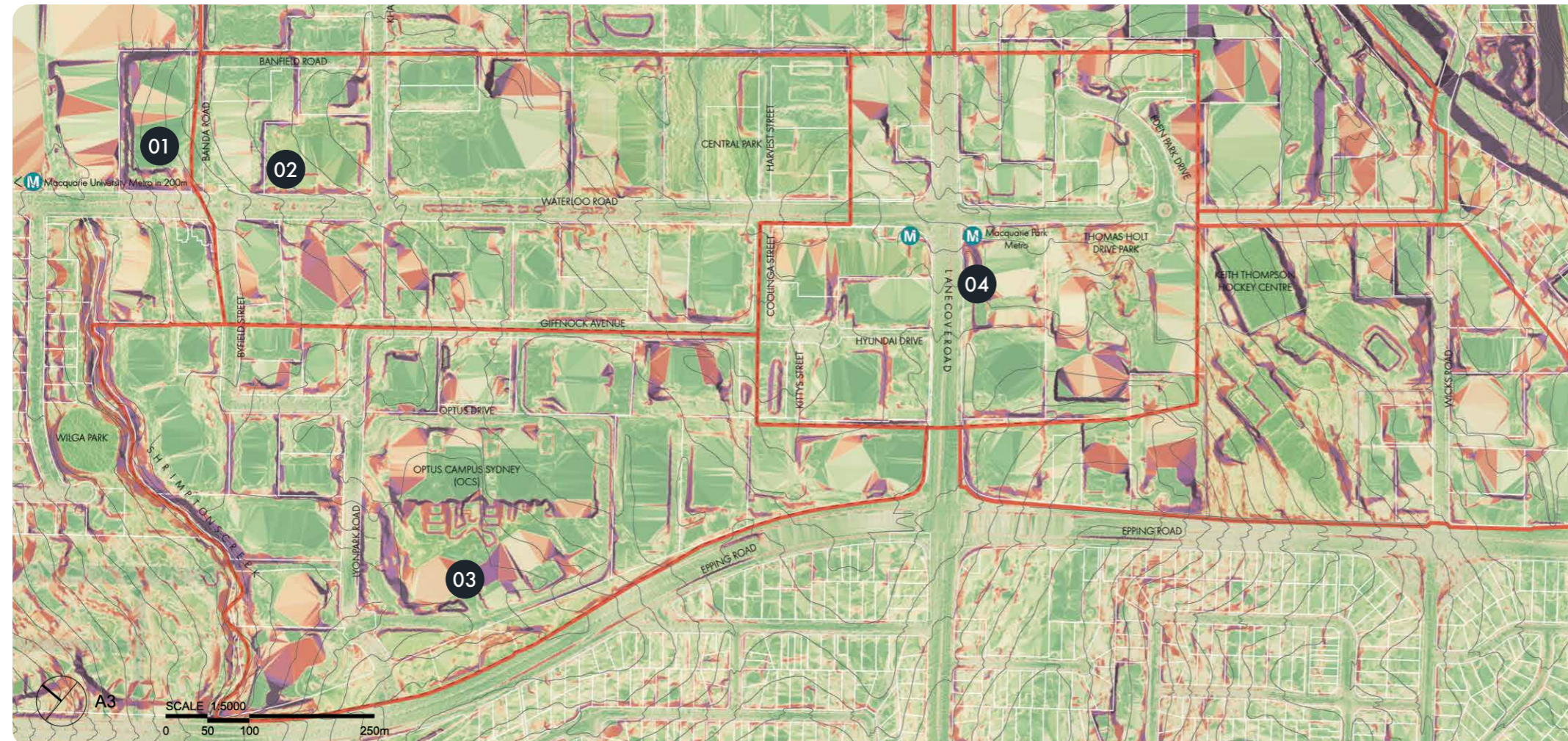
Shrimptons Creek Riparian Zone also forms a natural steep slope where the levels of the existing creek are retained between significant development, with a new road link proposed as part of the Macquarie Midtown development.

## Opportunities

- Sites that are being redeveloped present an opportunity to improve the interface to the public domain by absorbing level changes to avoid boundary retaining walls and steps where possible
- Level changes can also be manipulated to create buffers between public and semi-private spaces

## Constraints

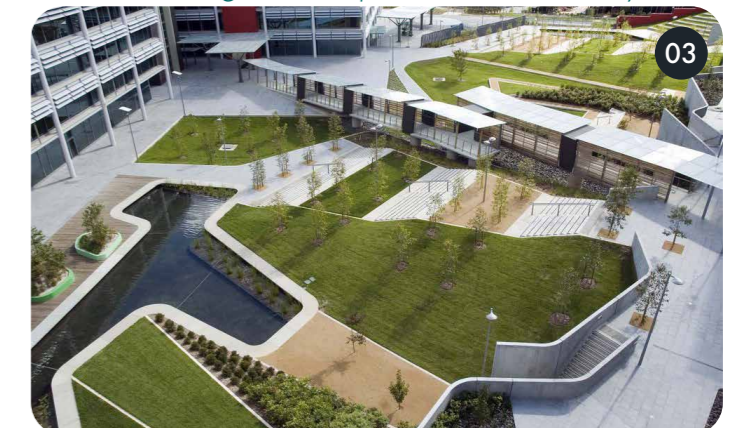
- Steep level changes create barriers to connect public realm with private open space, such as the 10m building setback zone along Waterloo Road.
- Retaining walls have been used extensively along private boundaries with the public realm, creating blank, unattractive walls and barriers to connectivity
- Gradient of some streets approaches 1:15 along large stretches which reduces walkability



Level change up to 'Prime' plaza on Waterloo Rd



Retaining wall on private lot boundary



Optus Courtyard, Source: JMD Design



Lane Cove Road level change around Metro

### Overview

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Streets are more than just a means of mobility and thoroughfare; they are a public stage where life unfolds. Depending on the quality of the street environment, they can offer places to dwell and relax, meet with others, eat, recreate and shop. They also represent the largest area of public space within the urban centre of Macquarie Park, and therefore play a key role in how places can contribute to the social, civic, economic, cultural and environmental fabric of the community.

Macquarie Park is bounded by major State roads; the M2 to the north-east, and Epping road to the south-west. Lane Cove Road is also a major arterial route which dissects the Macquarie Living Station precinct. Approximately 70% of people who work in Macquarie Park come by car, according to the Place Strategy.

The Place Strategy reports that 70% of workers currently drive, and most commercial premises within Macquarie Park have large amounts of surface parking within individual lots. Visitors can park in the Macquarie Centre or on some streets

### Opportunities

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- Incorporating the Waterloo Road Master Plan creates a green spine and linear park to utilise this street as a place for passive recreation and public amenity
- Increase permeability with a finer grain of streets
- Increase crossing and connection points

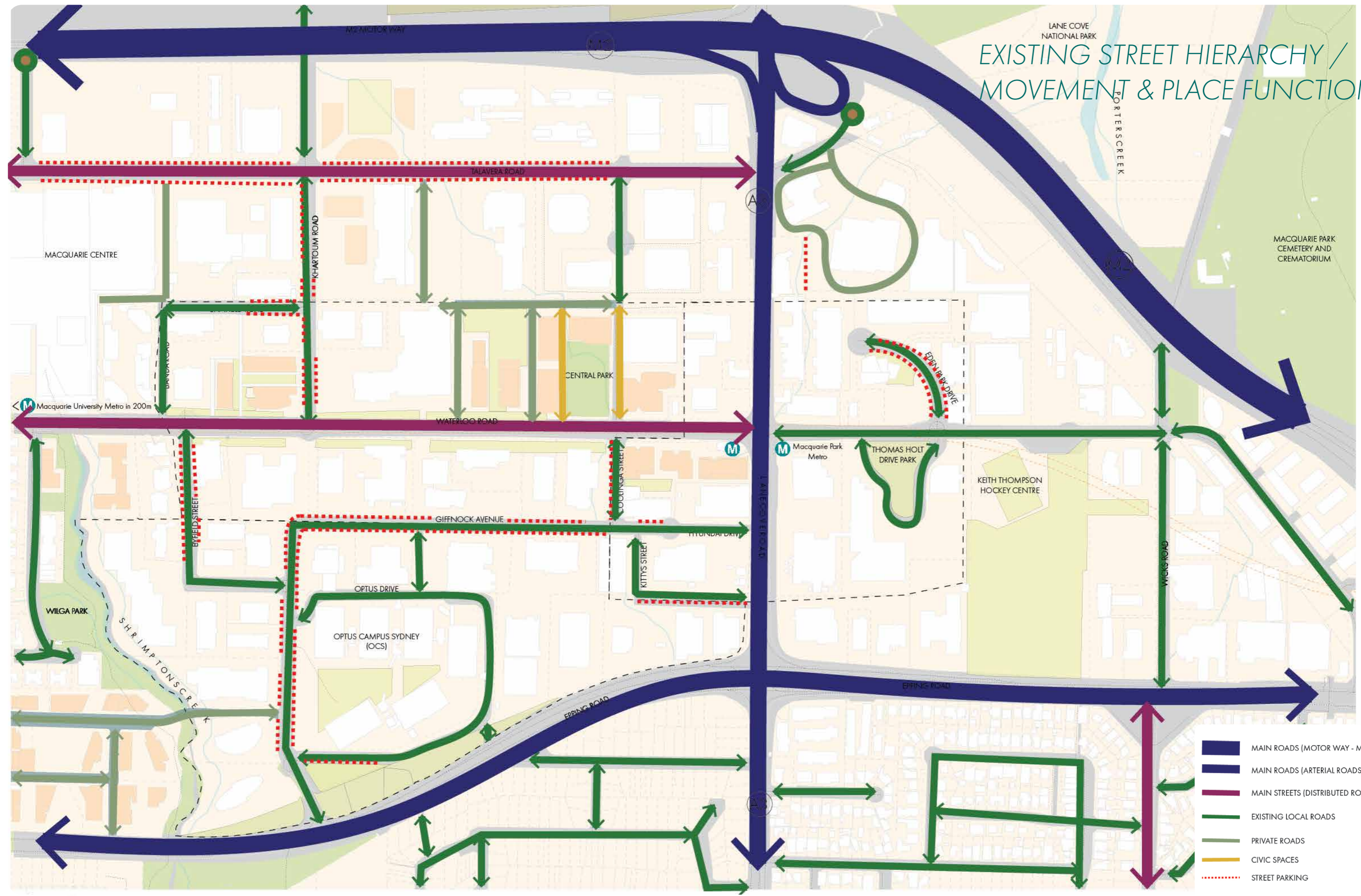
### Constraints

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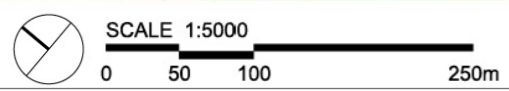
- Major arterial roads form barriers - increase crossing points
- Large commercial blocks prevent permeability through privately owned premises, semi-public spaces can provide strategic through-site links where sites are being redeveloped



# EXISTING STREET HIERARCHY / MOVEMENT & PLACE FUNCTIONS



- MAIN ROADS (MOTOR WAY - M2)
- MAIN ROADS (ARTERIAL ROADS)
- MAIN STREETS (DISTRIBUTED ROADS)
- EXISTING LOCAL ROADS
- PRIVATE ROADS
- CIVIC SPACES
- STREET PARKING



## 4.6 Existing Walkability

### Walkability to Public Transports

Walkability is incredibly important to create a successful urban environment, impacting the perception of safety, amenity and connectedness. Macquarie Park is currently impacted by the prevalence of large plots with large buildings, which create large blocks and, coupled with the wide roads, can feel uncomfortable and intimidating for pedestrians. This is compounded by a lack of ground-level activation and high volumes of traffic, which negatively impact the pedestrian experience.

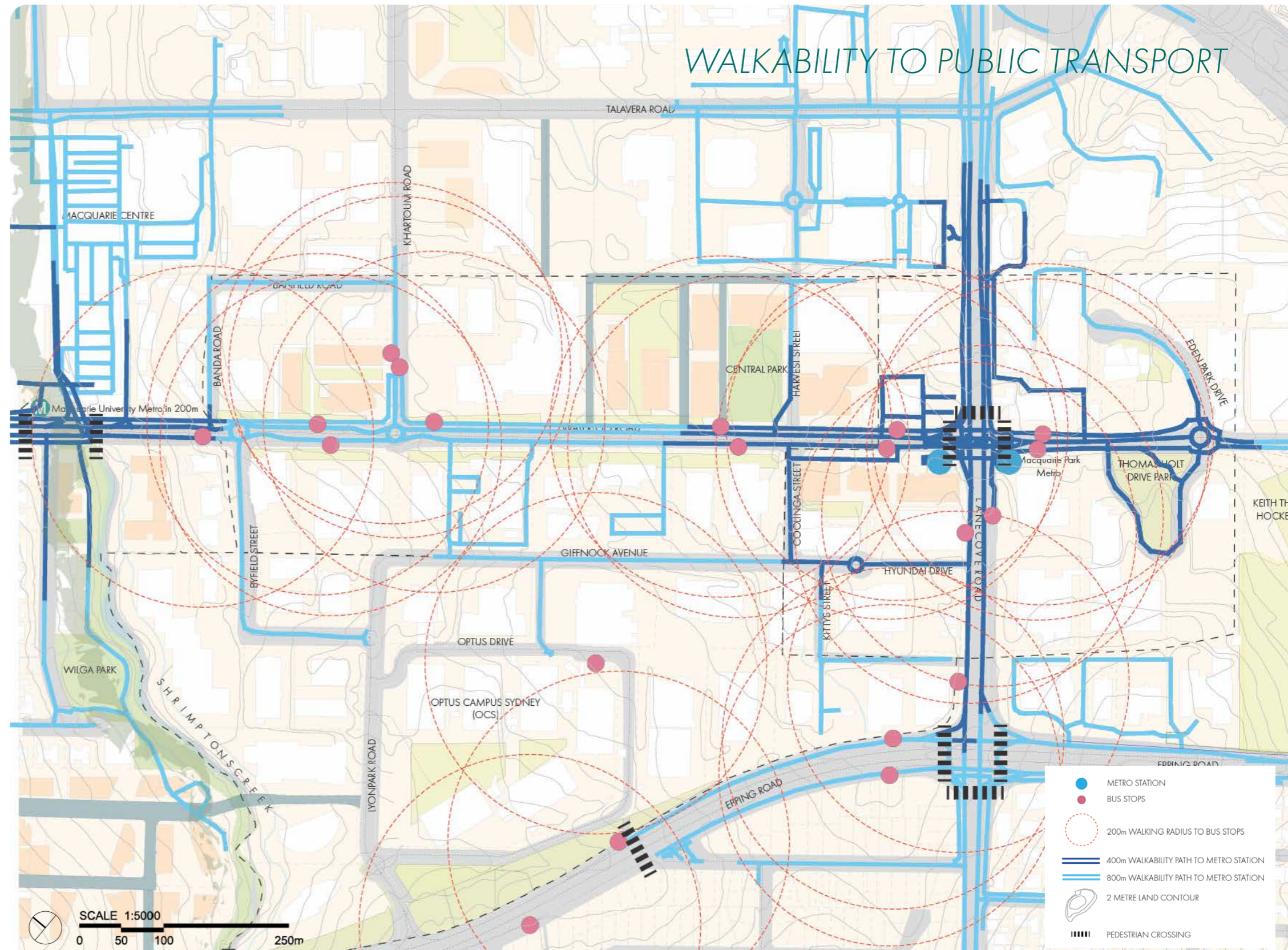
The topography also challenges walkability in places, and steep level changes between some sites create barriers. Additionally, there are limited pedestrian crossings; pedestrians looking to cross Waterloo Road have to use a three-point crossing, which leads to unsafe informal crossing points being used.

### Opportunities

- The current urban structure could be improved by having more through-site links to create a finer grain network of public and semi-public links
- Redirect the focus from private transportation to public by providing more options for walkability and convenience
- Increased street activation with more ground-level retail and dining opportunities can increase the social experience of the streets and encourage walkability.
- Buses currently play a critical role in providing regional connectivity and local access to Mac Park, however the lack of priority in the street network means unreliable services. Re-prioritising space and operating environments should not be done at the expense of scale and quality of open and public space
- Increasing street tree canopy will increase the amenity of streets and provide additional shade for pedestrians, as well as potentially buffering from high traffic areas
- Prioritise pedestrians by increasing the number of crossing points, increasing the permeability across the major roads

### Constraints

- Large holdings of privately owned land are a barrier to increasing permeability for public access
- The end of many streets faces a commercial or private land-holding that is not permeable
- Topography is challenging in places and has been dealt with using steep level changes between sites with retaining walls and steps that form barriers for inclusive access



## Walkability to Existing Open Space

Similarly to the Existing Walkability to Transport Hub, the walkability to the Open Space demonstrates how the current urban landscape impacts individuals capacity and ability to access to existing open spaces.

The higher the walkability to these open spaces the greater the ability a place is able to create a more inviting, open, active and healthy environment for people to use and connect.

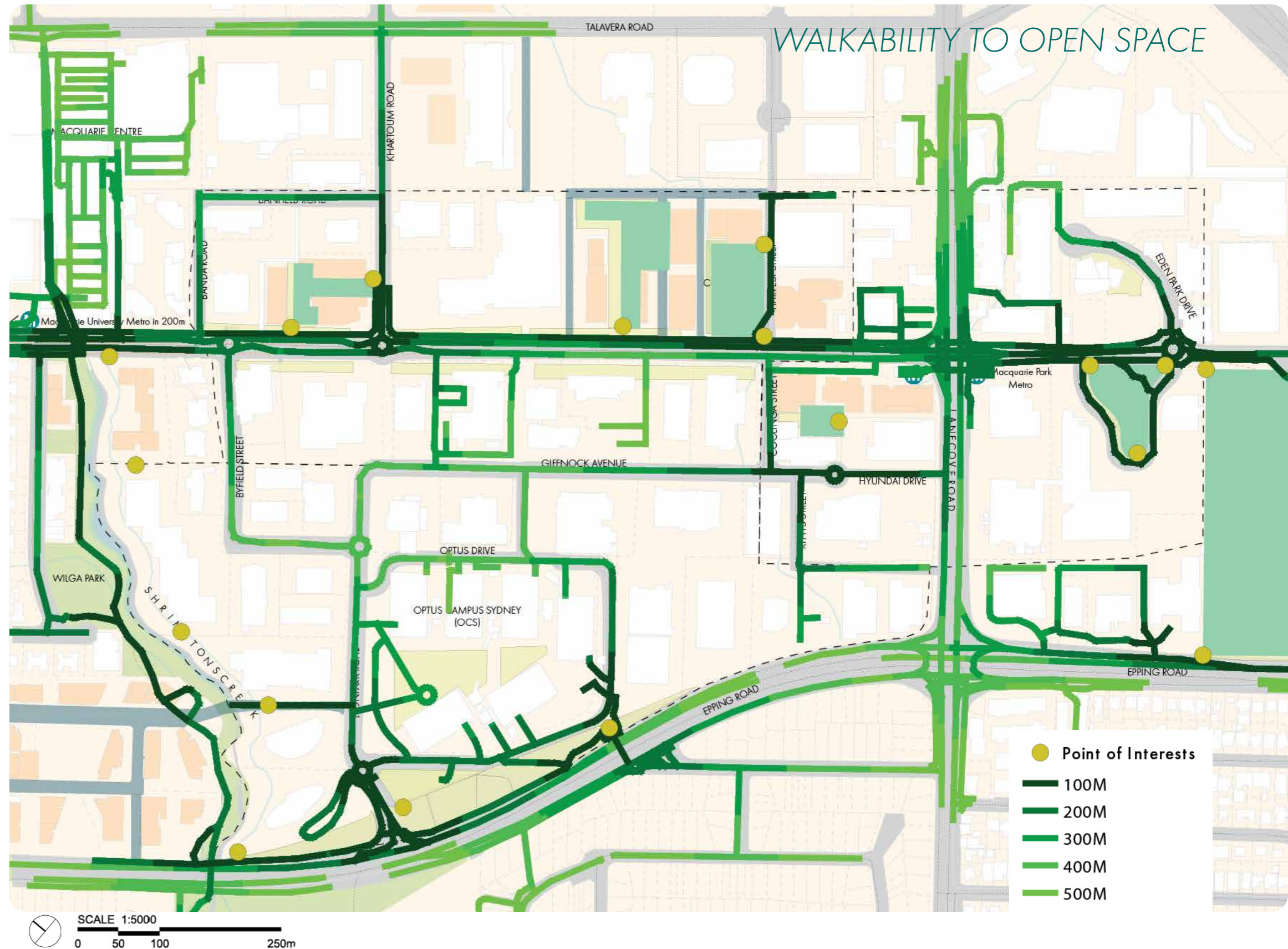
The current walkability to open spaces is somewhat limited by large blocks of buildings, constructions and discontinued roads/streets that have been inhibiting user's capacity to access these open spaces, hence, limiting user's ability to practice a healthier, greener and versatile lifestyle within the dense city streetscape.

## Opportunities

- Creating more connected and continuous streets that joins the access points to each open space enhances the sense of connectedness within the community
- Redirect the focus from private transportation to public by providing more options for walkability and convenience
- Increased street activation with more ground-level retail and dining opportunities can increase the social experience of the streets and encourage walkability

## Constraints

- Large holdings of private lands and green spaces restricts the number of creation of new paths and streets
- Limitations in creating a sense of fluidity in road links and street connection as a result of lack of private lands and DA approved open spaces
- Density of building blocks hinders the creation of new street links and potential publicly accessible park lands



## 4.7 Existing Public & Active Transport Networks

### Overview

The use of public and active transportation is exceptionally important in reducing congestion in cities, air pollution and can be much more energy efficient than private car transportation. When individuals become more reliant on public transport, the walkability of an urban landscape can be simultaneously increased.

With the Sydney Metro conversion and extension of rail services to Tallawong, the share of public transport trips among workers has increased to 26% (compared with 70% car usage). Further investment in public transport can reduce this car dependency.

Public bus stops are scattered around Lane Cove Road, Waterloo Road, Epping Road and M2 Motor Way. These bus stops are crucial for the commute of students, workers and visitors. Buses currently play a critical role in providing regional connectivity and local access to Macquarie Park, however the lack of priority in the street network means unreliable services. Lack of connectivity has incentivised some major landowners, such as the Goodman's Network and The Governor Hotel to provide free shuttle services to Metro stations.

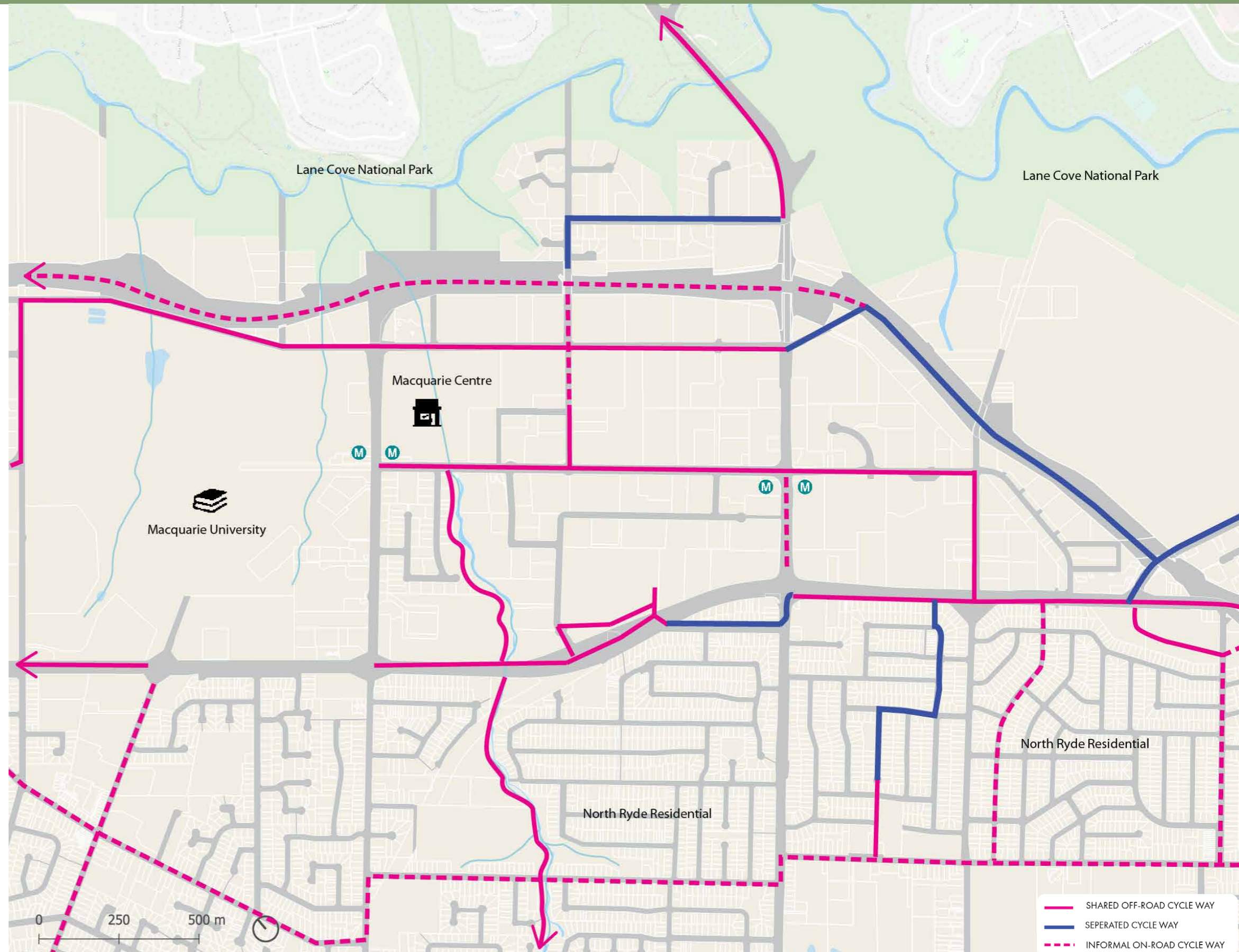
The cycleways network lacks connection and fluidity, and cyclists in the area often cycle directly on the road next to heavy vehicle traffic. Additional safe and accessible cycle lanes could be added to encourage active transport usage.

### Opportunities

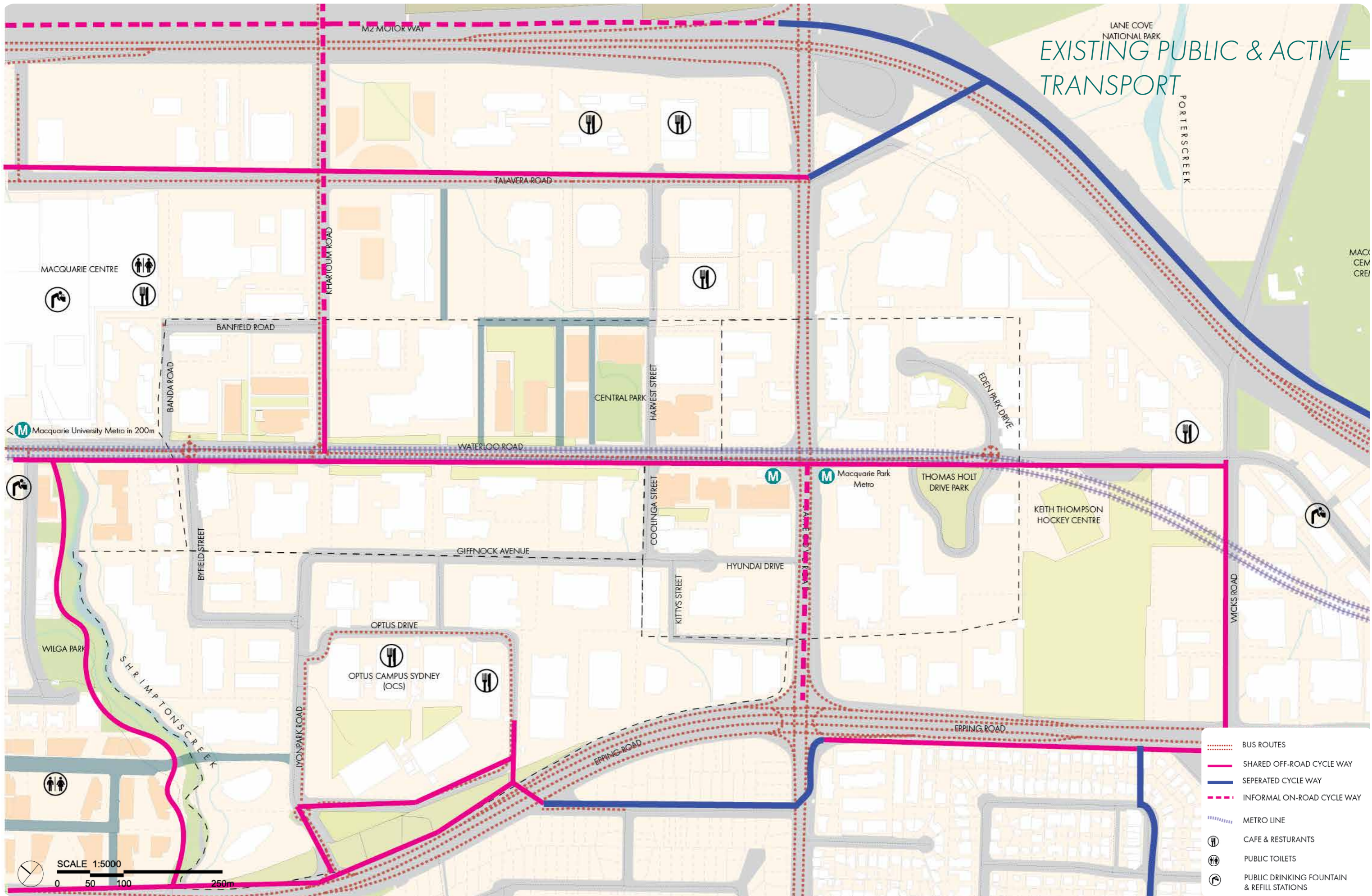
- Connecting cycle ways within and around public open green spaces, and to the broader network e.g. Lane Cove National Park.
- Increase walkability from bus stops and metro stations to commercial and educational estates

### Constraints

- Existing lack of continuity in cycle network
- Potential design restrictions in public roads and private streets.
- Re-prioritising space and operating environments for buses should not be done at the expense of scale and quality of open and public space



# EXISTING PUBLIC & ACTIVE TRANSPORT



# 5. Design Principles & Benchmarking

Benchmarking Study undertaken is in response to the proposed Design Principles.



## DP1 - Greening the Neighbourhoods (Open Spaces)

### 1-1. Increase the number of open spaces

Create additional open spaces to satisfy the future population growth and demands, connect with walkability catchment and pocket parks within the neighbourhoods.

### 1-2. Strengthen tree canopy through increased green links

Contribute to target of min. 35% tree canopy cover (19% existing) to strengthen street and open space amenity and ameliorate effects of urban heat island.

### 1-3. Revitalise creeks and reveal Woven Ways

Encourage residential development near Shrimptons Creek, reveal the Industrial Creek through open streetscape and pedestrian links, as well as acknowledge Porters Creek along surface opportunity and moments.

## Spring Street Pocket Park & Hudson Street, New York

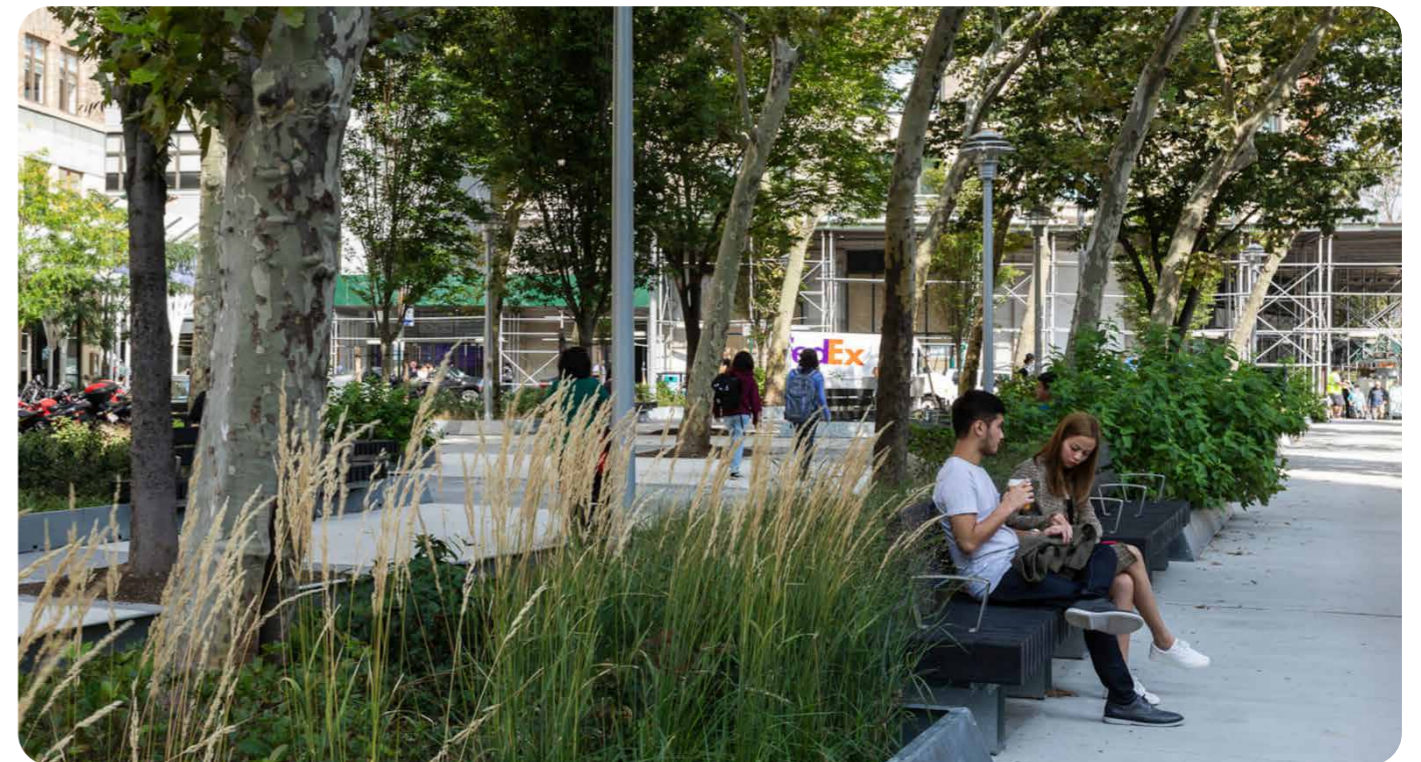
The reconstruction of Hudson Street, in collaboration with MNLA, features parking-protected bike lanes, widened sidewalks, 170 modern benches and 8,000 sf of lushly planted areas within the public realm.

### Key Learnings:

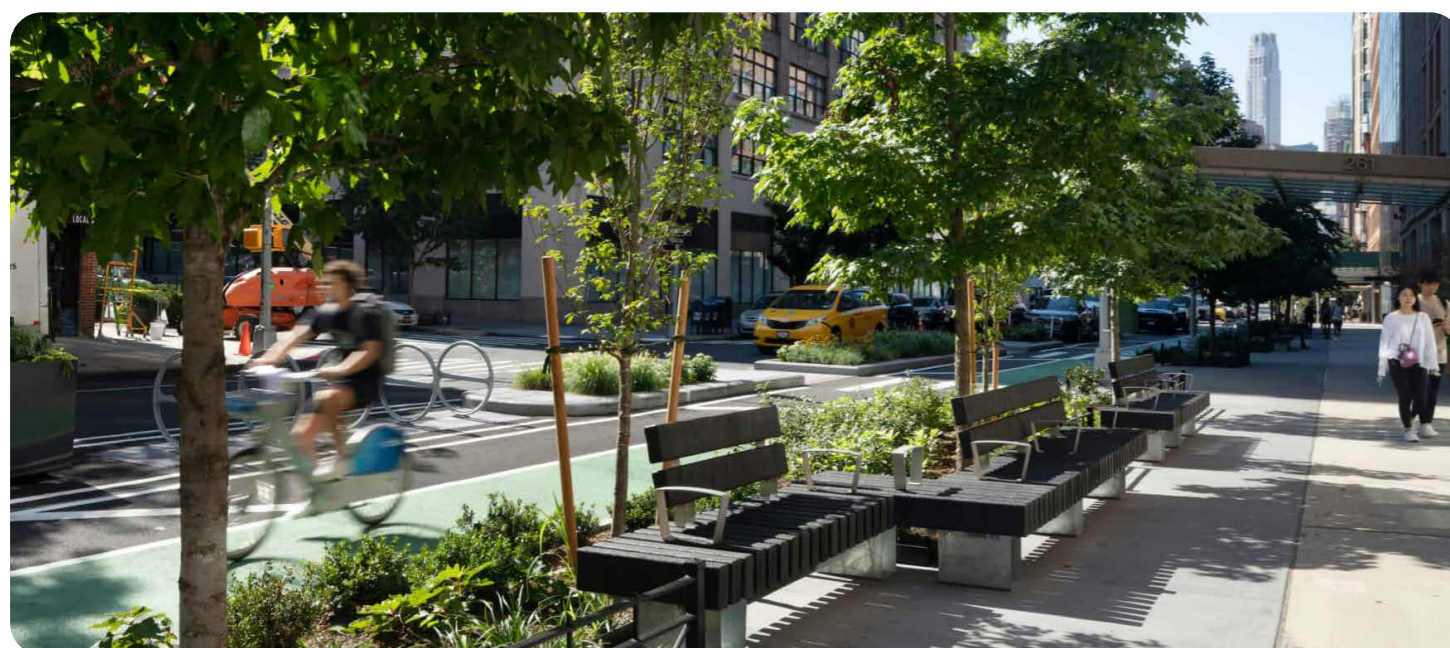
Creates an attractive, safe, and inviting experience for individuals who work, visit and live within the areas.

Reduces potential car congestion and increases community usage of street scape

Provides a safer and more interactive environment that effectively increases street permeability.



Spring Street New York Pocket park, Source: Elizabeth Felicella



Hudson Street New York Reconstruction, Source: MNLA



Hudson Street New York Reconstruction, Source: MNLA



## The Canopy Precinct, Lane Cove, Australia



The Canopy makes use of a car park rooftop to deliver urban public space in a Sydney suburb that has been experiencing the pressures of densification. The mixed use domain combines the feedback of community, business owners and council to provide for the needs of all stakeholders.

\* Located on land traditionally owned by the Kuring-gai Nation

### Key Learnings:

- Retail as an opportunity to activate lane-ways and parks.
- Multi use plaza that caters to the diverse needs of the community. For example, inclusion of a performance stage, playground, seating and shopping.

Key Issues: Play equipment should provide options for smaller kids to increase accessibility.



The Canopy Precinct, Source: Arcadia



The Canopy Precinct Master Plan, Source: Arcadia

## First Avenue Water Plaza, New York, USA



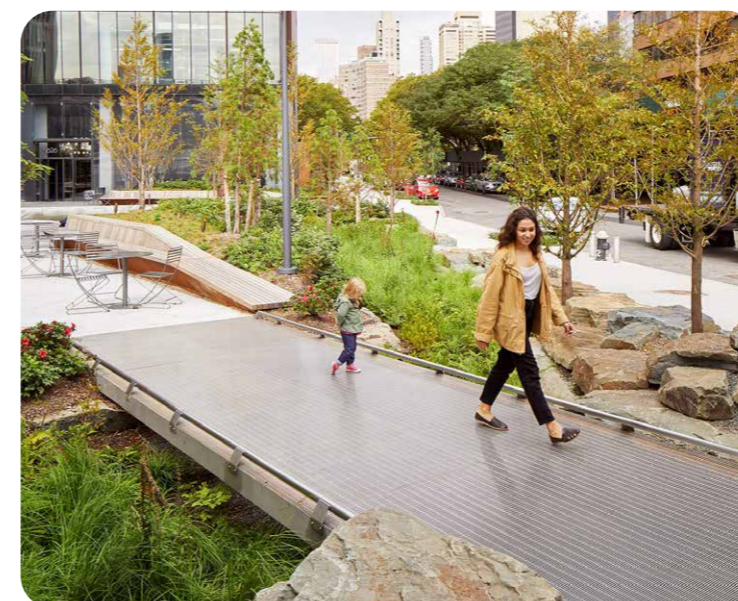
First Avenue Water Plaza Master Plan,, Source: SCAPE



First Avenue Water Plaza is a mixed use public space, water filtration system, noise-pollution filter and green roof above an underground car park.

### Key Learnings:

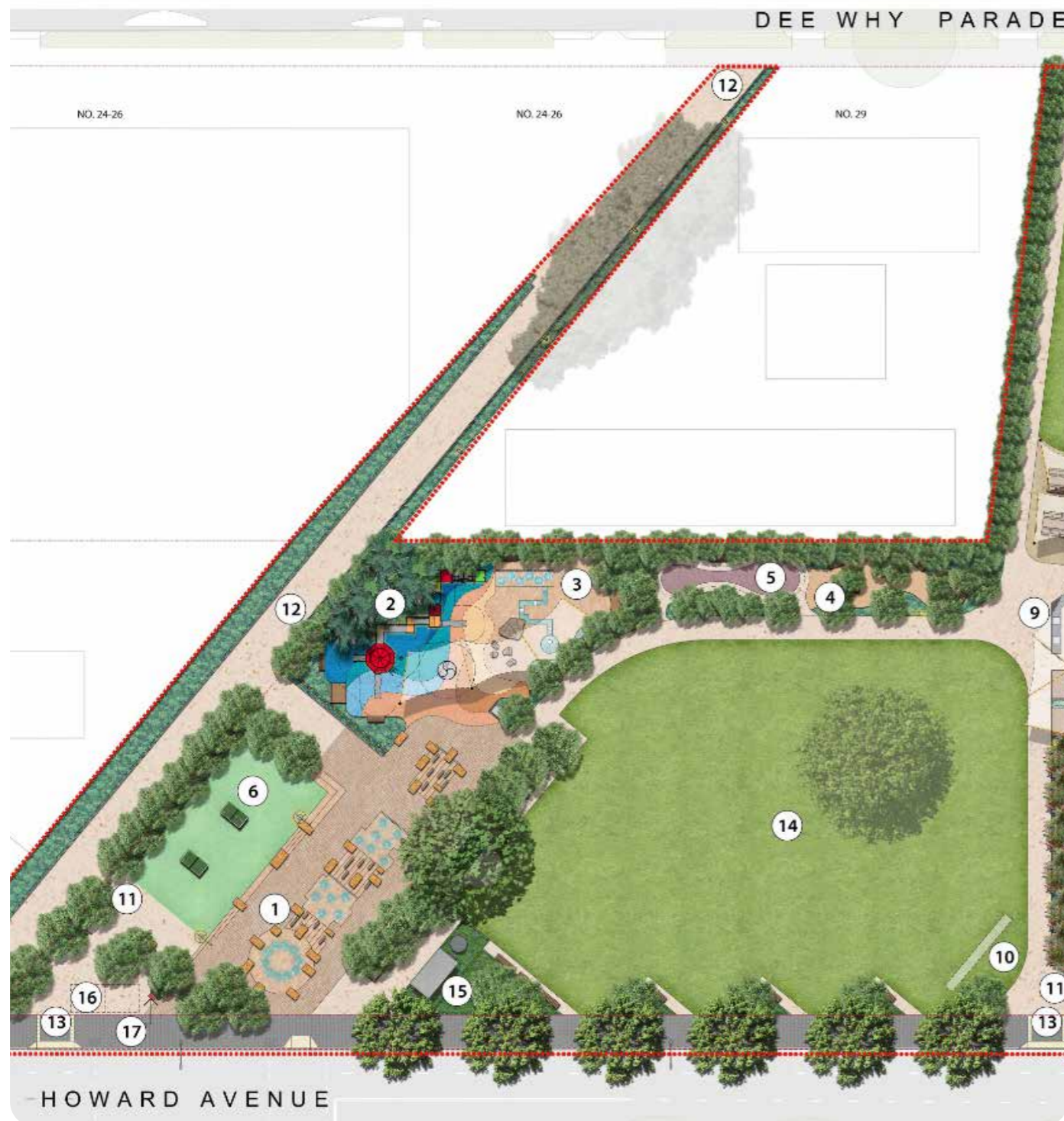
- Responds to and mitigates storm surges and storm-water runoff by capturing and filtering water during heavy rain and releasing it in to the nearby river.
- Custom benches, cafe tables and an interactive fountain draw users into the plaza.
- Creates new connections across the site and to the waters edge.



First Avenue Water Plaza,, Source: SCAPE



## Walter Gors Park, Sydney, Australia



Walter Gors Master Plan, Source: Tract

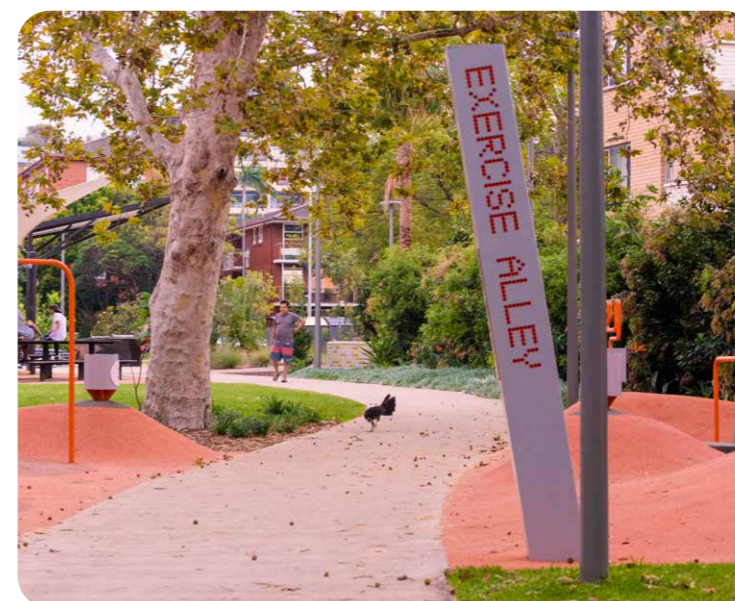


The new Walter Gors Park was created through the demolition of Council properties and consolidation with the existing park area. This open space is an integral part of the vision for Dee Why's town centre that links streetscapes and provides high quality amenities for a growing neighbourhood.

\* Located on land traditionally owned by the Kuring-gai Nation

### Key Learnings:

- Creation of a variety of spaces with different uses and scales that bring the community together.
- Bespoke furniture reflects it's surrounding environment.
- Maximising use of storm-water for passive watering of gardens and to mitigate floods and enhance water quality.



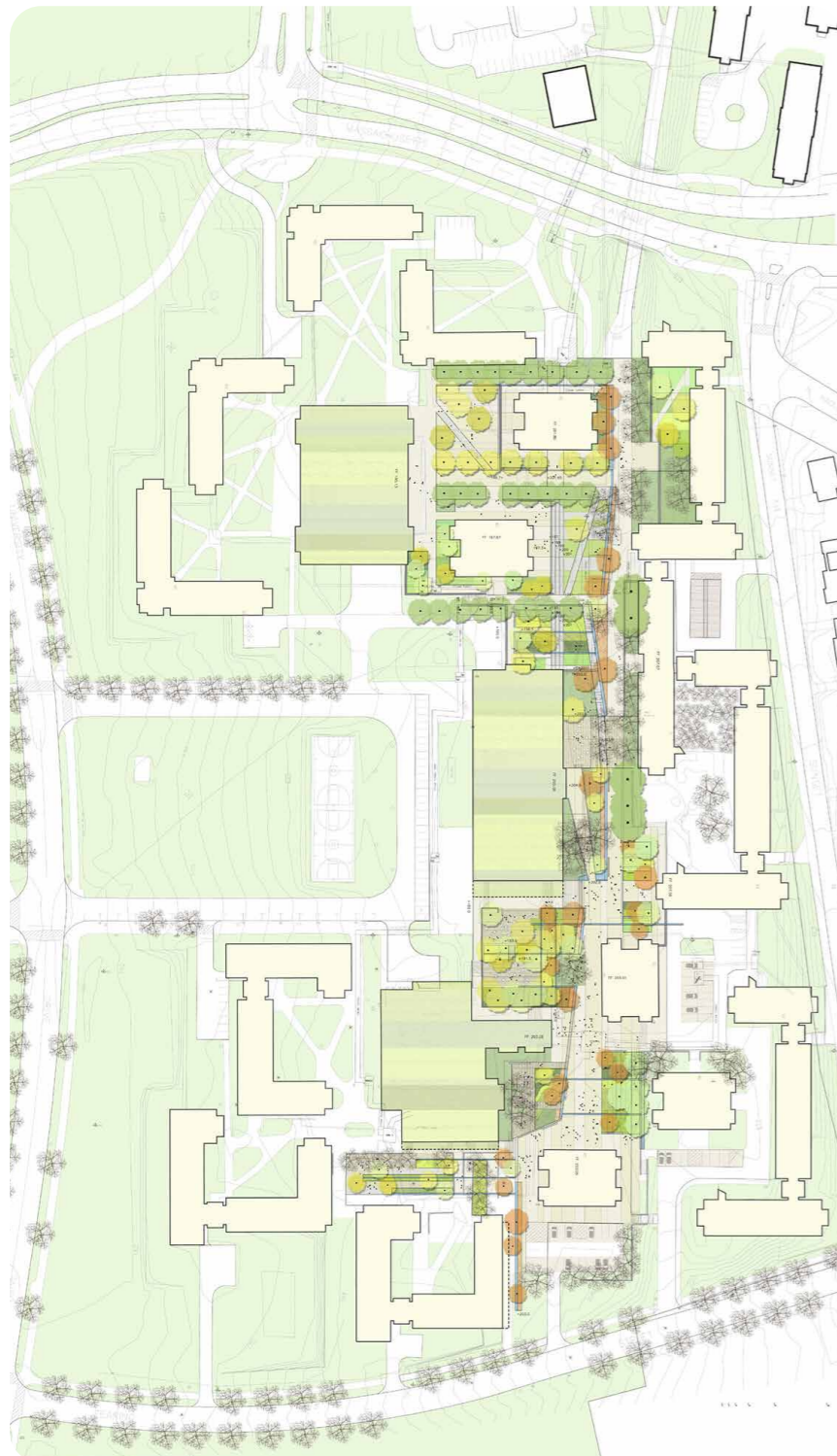
Walter Gors, Source: Tract



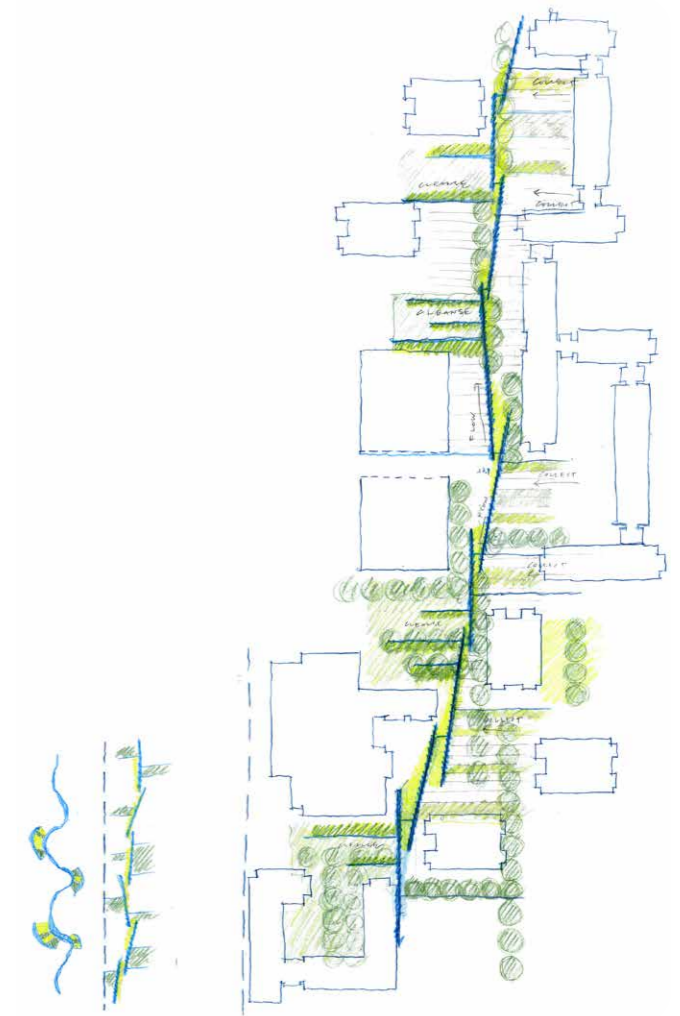


Strengthen Tree  
Canopy Through  
Increased Green  
Links

## University of Massachusetts Amherst, New England



The renewal of this five-acre, densely populated area on UMass Amherst Campus inverted the 70:30 Paving to planting ratio to 40:60 with new and restored planting. The project brought storm-water systems running through the site to the surface, creating bioswales and infiltration gardens to harness water on within the landscape and reduce the catch basins and sub surface storm-water piping.



University of Massachusetts Amherst, Source: STIMSON



## Hanlon Park, Brisbane, QLD



Hanlon Park Masterplan Source: TRACT



Prior to construction, Hanlon Park/ Bur'uda's was predominantly a flood conveyance, this project became an opportunity to advocate for a holistic park design while also meeting flood mitigation requirements. An innovative approach of preferencing swathes of planting, over traditional rockwork allowed the topography of the new waterway to create a variety of flow velocities; in many areas plants providing primary erosion control, rock is used in areas of extreme velocity.

Natural processes were harnessed, encouraging long term evolution. This was reinforced with buried rock armouring, recycled concrete and fallen logs in strategic locations. Existing unsightly sewer manholes along the waterway while initially a major constraint became transformed into opportunities for vantages and lookouts.





## Darling Square, Sydney



An urban park with community and retail spaces that provides an abundant of opportunities for gathering.

### Key Learnings:

- Demonstrates a variety of gathering opportunities
- Inclusion of lawns in an urban setting provides a flexible space for community events, as well as relaxation
- Moveable furnitures allows for spaces to be adaptable, for shade and/or winter sun, as well as user input to use the space

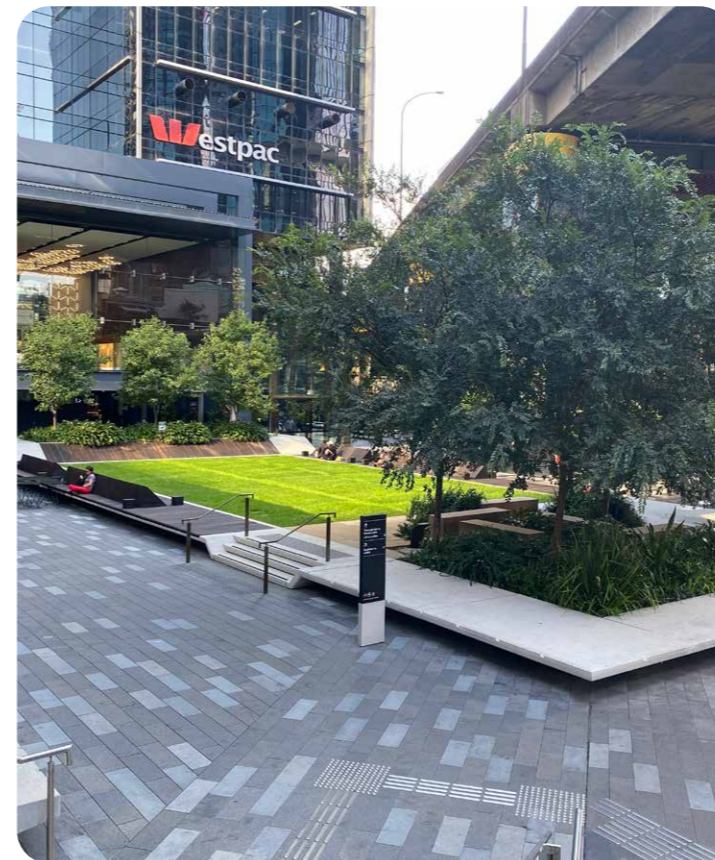


Darling Square Source: ASPECT



Increase Open Space & Green Links - Privately Owned Public Spaces

## Westpac Park Precinct, Barangaroo, Sydney

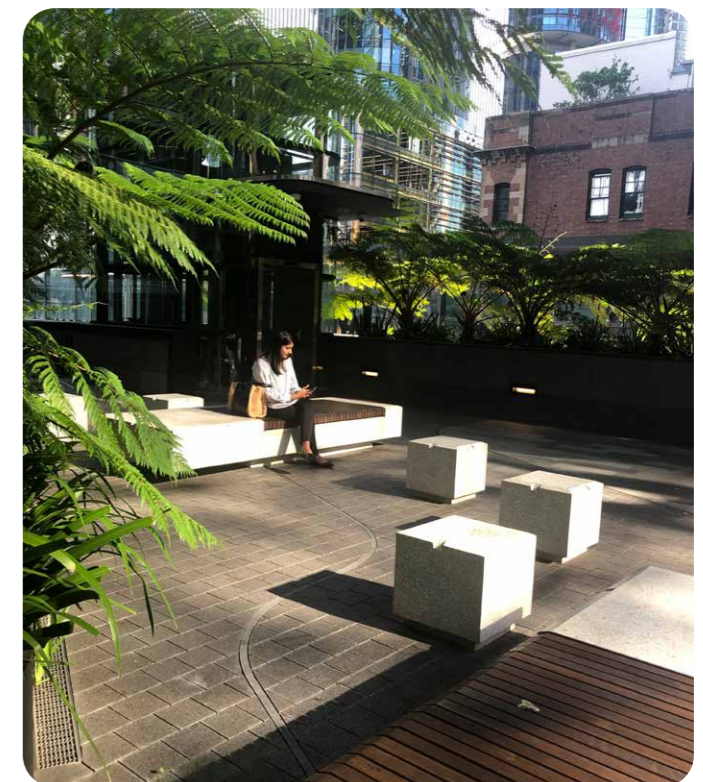


Westpac Place provides much needed green space in the heart of Sydney City. Located within a 5 minute walk form Wynyard Station, surrounded by office buildings and workers, and a major highway running above, this space is accessed by over 20,000 people per hour at its busiest times.\*

Key Learnings:

- Variety of seating creates an adaptable landscape
- Accessible green space transforms underused/ unprogrammed space

\*Aspect Studios <https://www.aspect-studios.com/au/projects/westpac-place-275-kent-st>



Westpac Park designed by ASPECT, photo source: TRACT

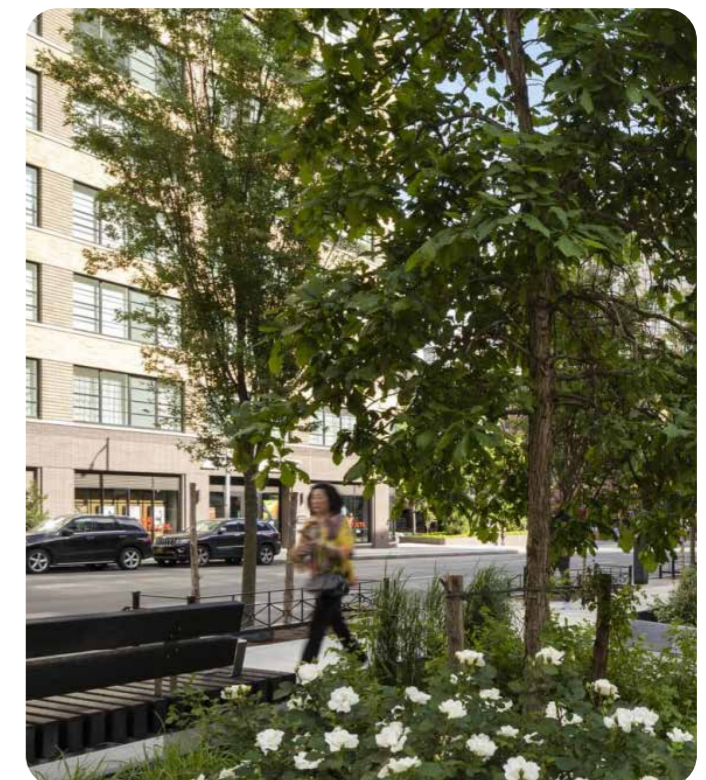
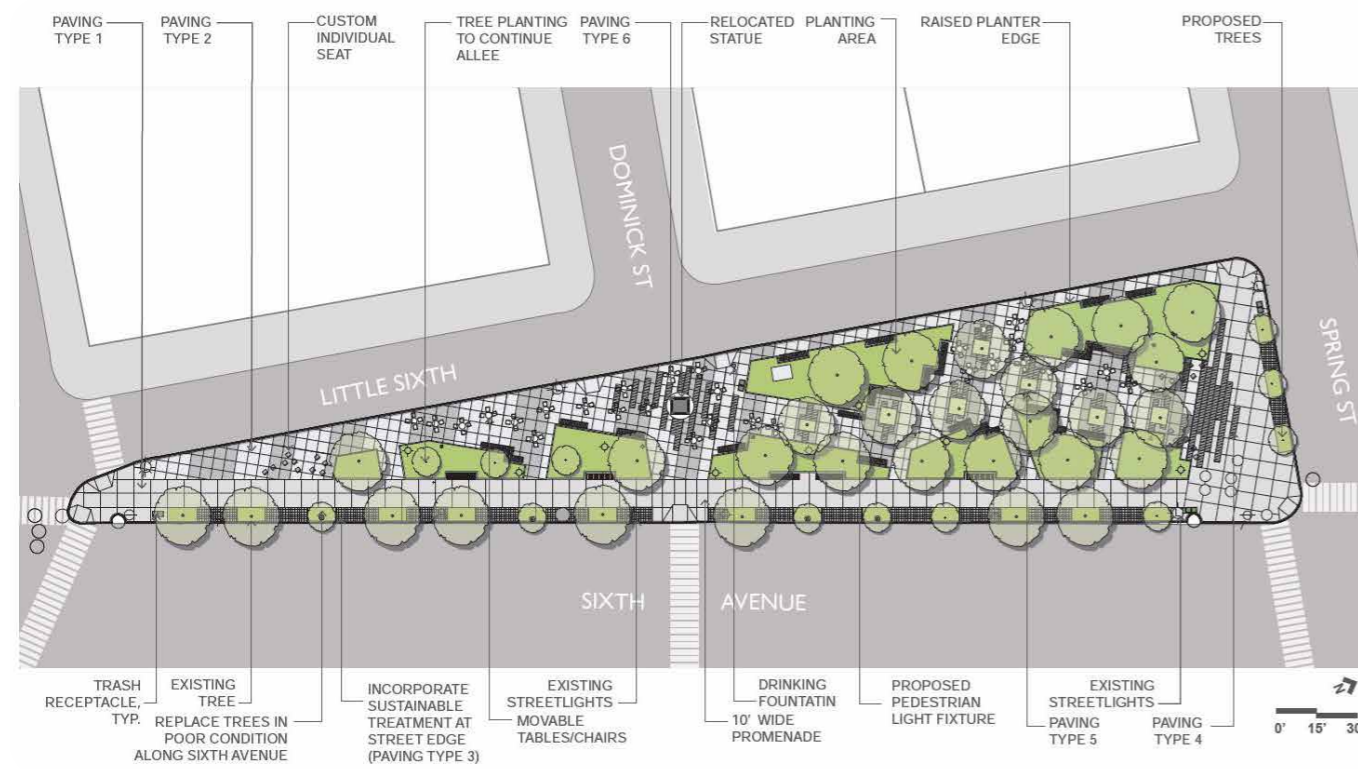
# Spring Street Park, New York



Improvement to an existing urban park and creates a space that has improved amenities and social interactions. The park successfully accommodates the needs of residents and workers.

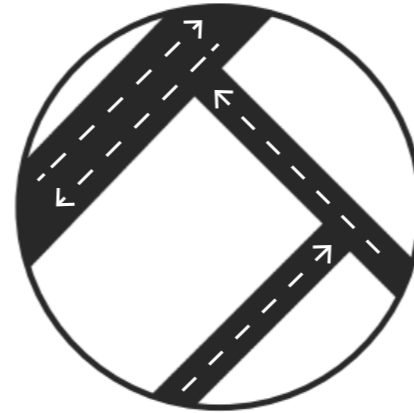
Key Learnings:

- Creates an attractive, safe, and inviting experience for individuals who work, visit and live within the areas.
- Provides a safer and more interactive environment that effectively increases street permeability.



Spring Street Park, Source: MNLA





## DP2 - Connecting the Neighbourhoods (Movement)

### 2-1. Create fine grain urban grids to improve site permeability

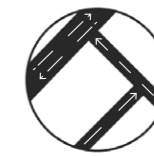
Prioritise pedestrians by increasing the number of crossing points, and street connections within existing grid will greatly increase the permeability across the major roads.

### 2-2. Enhance public and active transport

Prioritise the access and way finding of the public transport network to create legible and safe cycle networks.

### 2-3. Create and emphasise arrival experience and gateway moments

Acknowledge different scale and arrival experiences of diverse individuals and visitors.



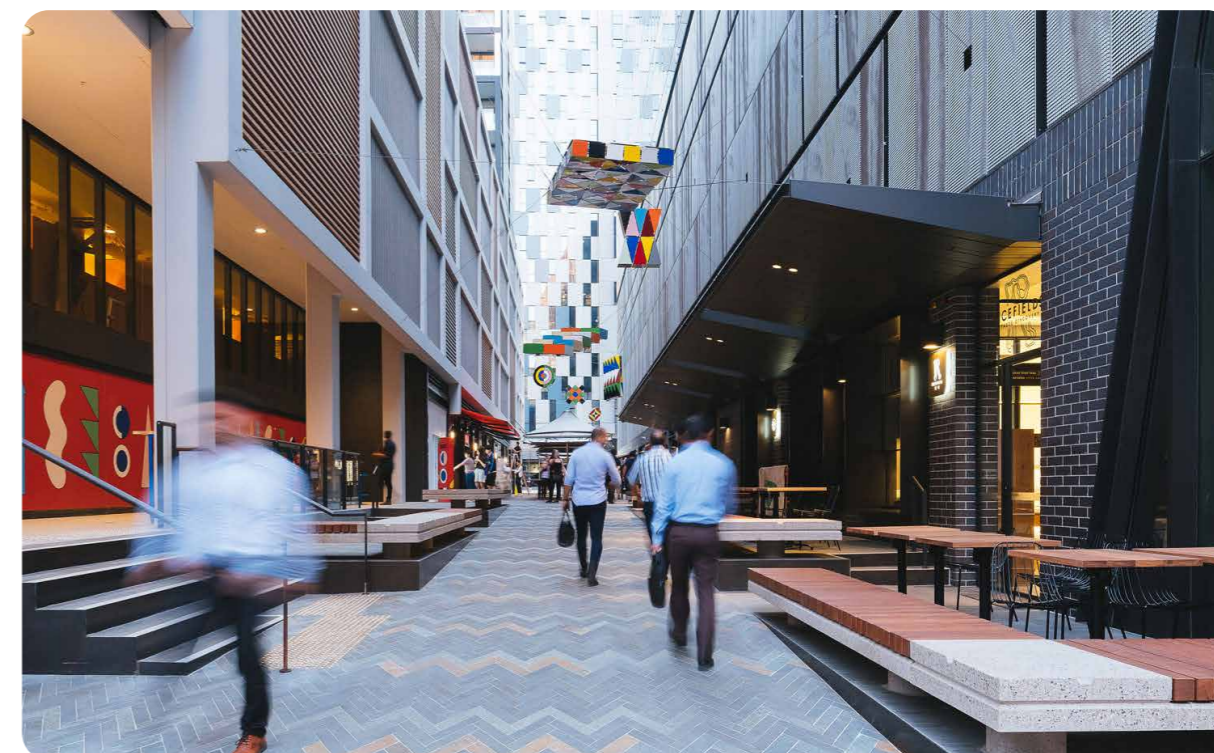
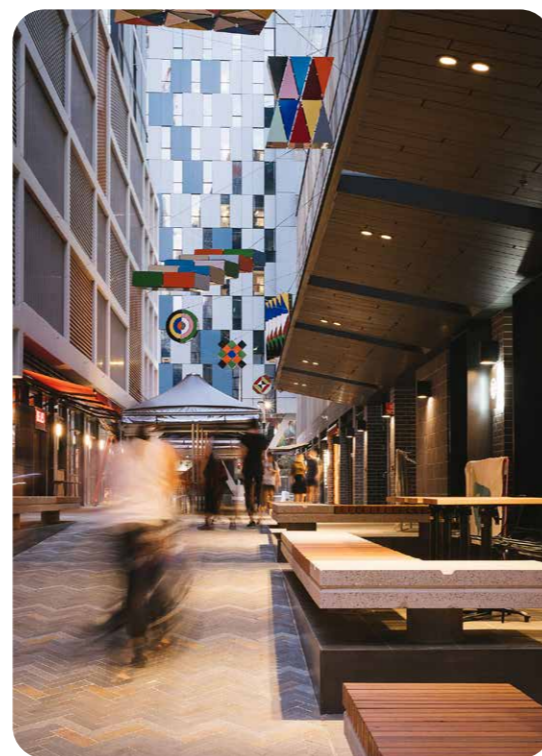
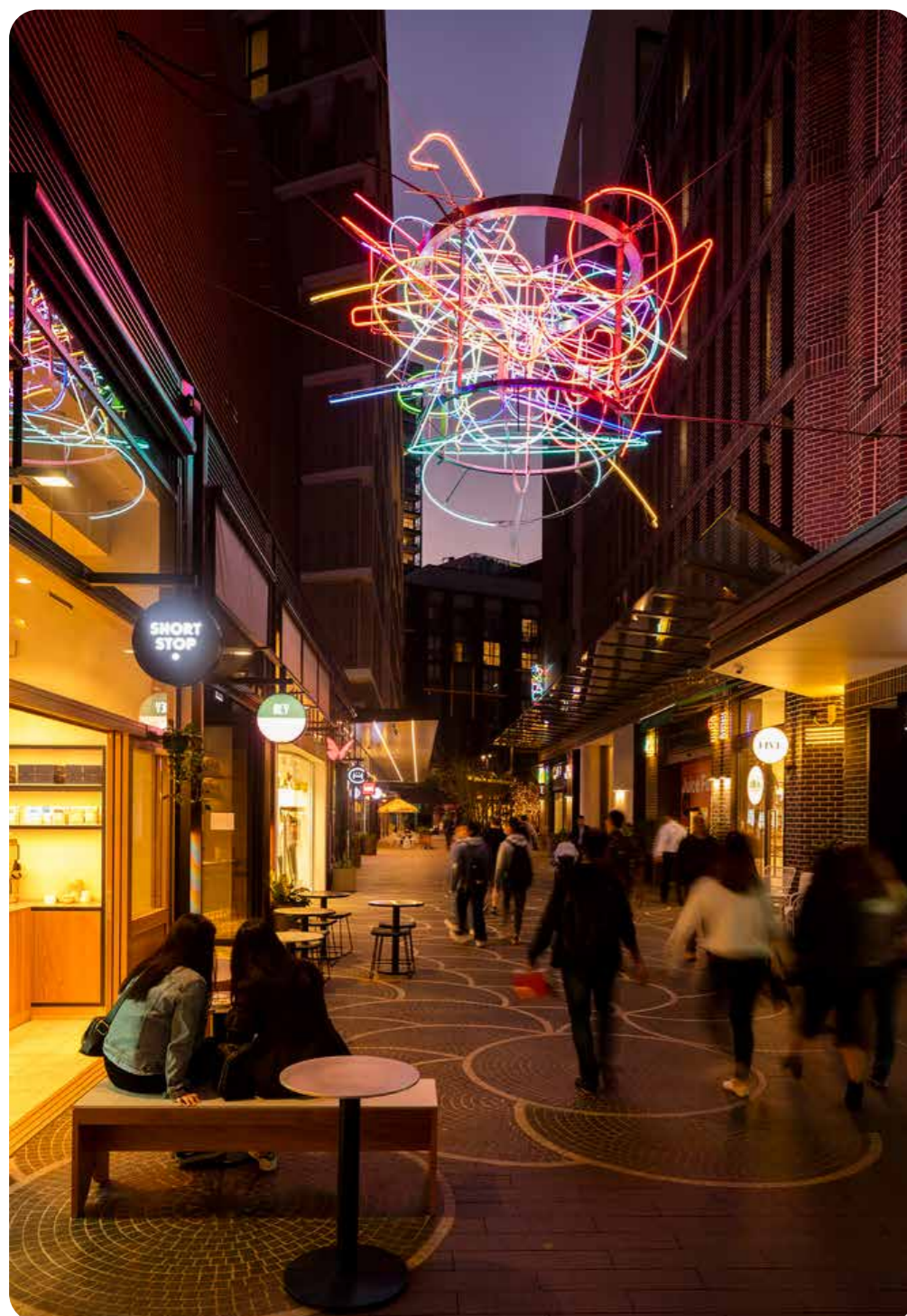
Create fine grain urban grids to improve site permeability

## Steam Mill Lane and Little Hay Street, Darling Square

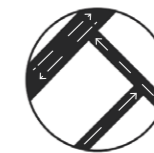
Pedestrian scale lane ways provide essential links, and are particularly successful when filled with vibrant ground-floor activation. They can also be areas of cultural expression through public art, hard scape and interaction with architectural features. In this case, the lane ways are retail lined and curated with public art, street furniture and lighting. Stopping points have been considered for both individuals and groups, and the space feels comfortably human-scale due to the fine grain of materials.

### Key Learnings:

- Increased permeability via lane ways can greatly enhance walkability
- Treatment of retail frontage encourages activation
- Overlaid canopy artworks support safe and inviting night time spaces



Steam Mill Lane and Little Hay Street, Source: ASPECT



Enhance public  
and active  
transport

## Tract Cycleway Projects, Pitt Street



Pitt Street Cycleway, Source: TRACT



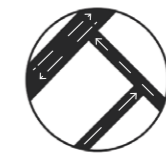
The Pitt Street cycleway project provided an opportunity for Tract to assist City of Sydney Council to reclaim road space for pedestrian and cyclist amenity.

The project represents a formalisation of the existing temporary separated cycleway, which was initiated during the Covid-19 pandemic.

Tract's design provides a high-quality bi-directional cycleway stretching from the Pitt Street Mall to Dalley Street, and eventually to Alfred Street and Circular Quay.

### Key Learnings:

- Create an additional pedestrian zone between the cycleway and the existing footpath
- Allow for informal access and recreation and outdoor dining
- Provides high-quality finishes including Bluestone kerbing throughout, as well as other streetscape amenities including planting and furniture



Create and emphasise arrival experience and gateway moments

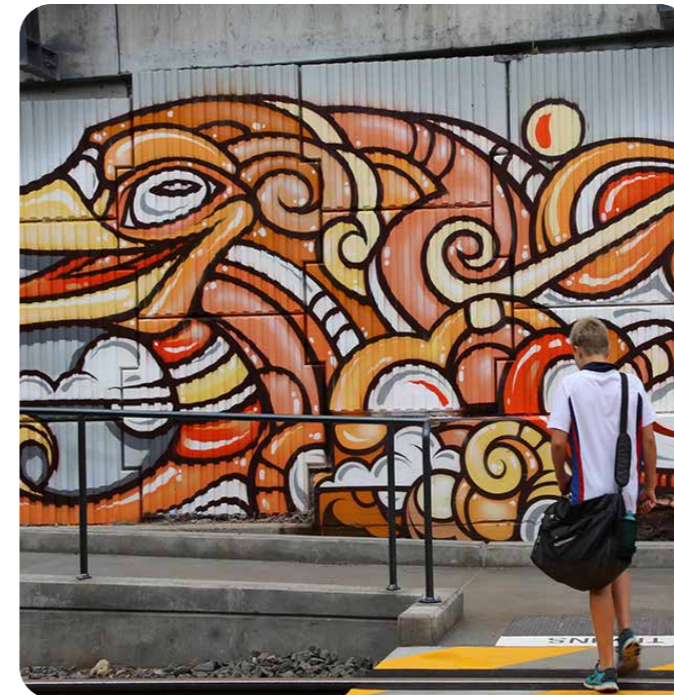
## Arrival Experience and Gateways



The Canopy, Darling Harbour: Jacob Nash



Lachlan's Line Bridge:: KI Studios



Rail Crossing point at Leichhardt: Philbs

Arrival moments announced with smaller scaled features with opportunity to embed into arrival areas/ streetscape elements.

### Key Learnings:

- Pedestrian and cycle scaled elements can become an immersive experience.
- Opportunities to introduce more detail and texture
- Opportunity to embrace arrival orientation moment to share detailed stories and richer learning about the place

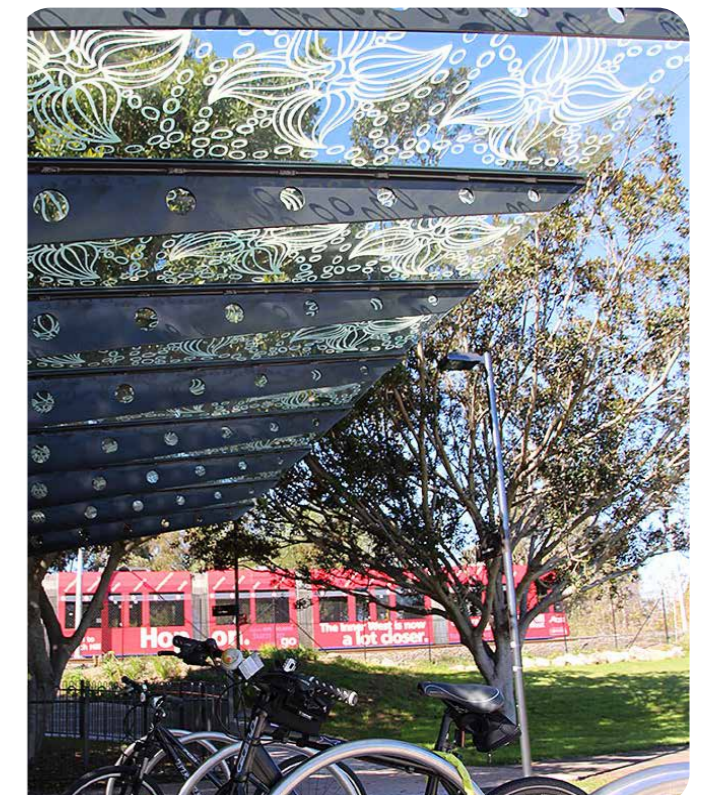
Gateway announced with painted underpasses, pedestrian/ cycle bridges, wall art

### Key Learnings:

- Large scale and bold measure seen by vehicles
- Provides interest and improves amenity for pedestrians
- Carries stories and educates all passing



I-87 Underpass, San Jose, California: Dan Corson



Bike Shelter : "The Source" by Bronwyn Bancroft



## DP3 - Design with Country

### 3-1. Connecting the site to Country

Retain and enhance this region as an important place of gathering for Aboriginal people, overlooking two waterways and old tracks that went north, west and south.

### 3-2. Open up the site

Ensure that the building is open, accessible, and to provide access for people.

### 3-3. Celebrate Country

Proclaim this precinct as a threshold to the city for many students who come from a long way away and are here to stay on Aboriginal land and learn.

### 3-4. Tell our stories

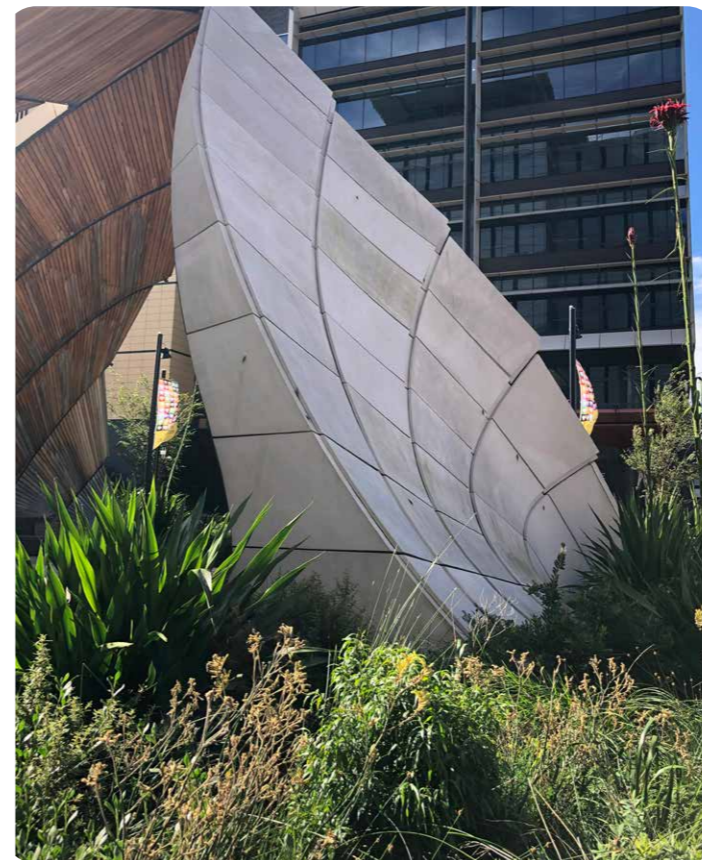
Highlight this region as a place of ceremony, lore, and settlement. Tell our stories associated with this place through place based interventions, such as playful/educational interactive displays in the public domain, as well as through the unique lens of innovation and technology of this precinct.



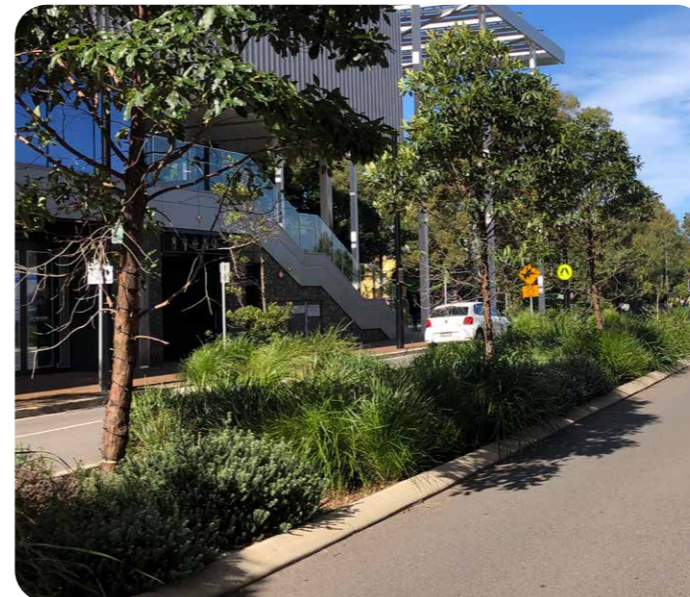
## South Eveleigh Precinct - Connect Site to Country



Cultural Landscape Garden: Jiwah



Pavilion: Chris Fox, Jiwah



Streetscapes and play areas Jiwah, Aspect

Respect for Country guides landscape and vegetation design throughout South Eveleigh Precinct, developed by Mirvac. Designed by Jiwah in collaboration with local Indigenous Community, diverse indigenous plantings are adapted for a broad range of public domain spaces from streetscapes to play spaces, urban roof farms to cultural gardens.

This precinct sets an industry benchmark in how to respectfully incorporate Aboriginal culture and heritage into the re-development projects through green and blue infrastructure.

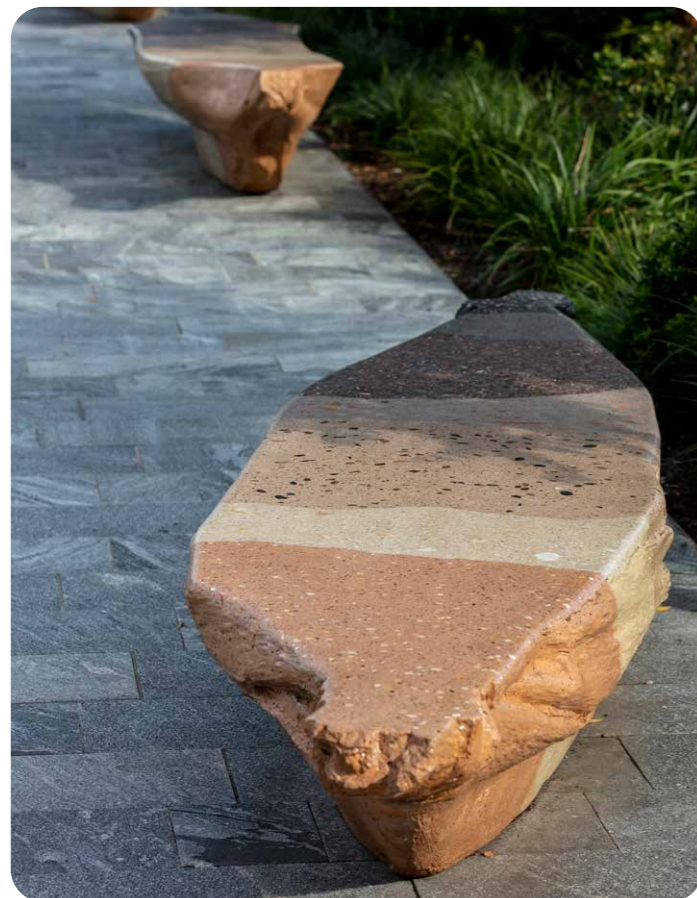
### Key Learnings:

- Country focused community green spaces alongside contemporary architectures celebrates past and present.
- Provides connection through physical interaction with the landscape representing indigenous culture and its traditional land care.
- To reinforce Indigenous perspectives with a significant focus on native plant cultivation practices, ancient and contemporary.





## Westmead Health Precinct - Celebrate Country & Tell Our Stories



This project focuses on 'well-being', with particular attention to providing culturally welcoming, safe & connected spaces to support the Aboriginal community. This intention is reflected throughout the public domain design.

**Key Learnings:**

- Artworks are embedded across the precinct celebrating Aboriginal history, language, science and knowledge.
- Story telling through artwork adds richness to the experience, physically and spiritually.
- Nature of artworks vary. Some are bold and distinctive, some have hidden layers to discover and admire.
- A cultural gathering space also offers an official ceremonial role with smoking pit as well as abundant and adaptable seating for informal yarning circles.

Memory Vessel : Jamie Eastwood, Dean Kelly, Heidi Axelsen

Memory Vessel : Jamie Eastwood, Dean Kelly, Heidi Axelsen



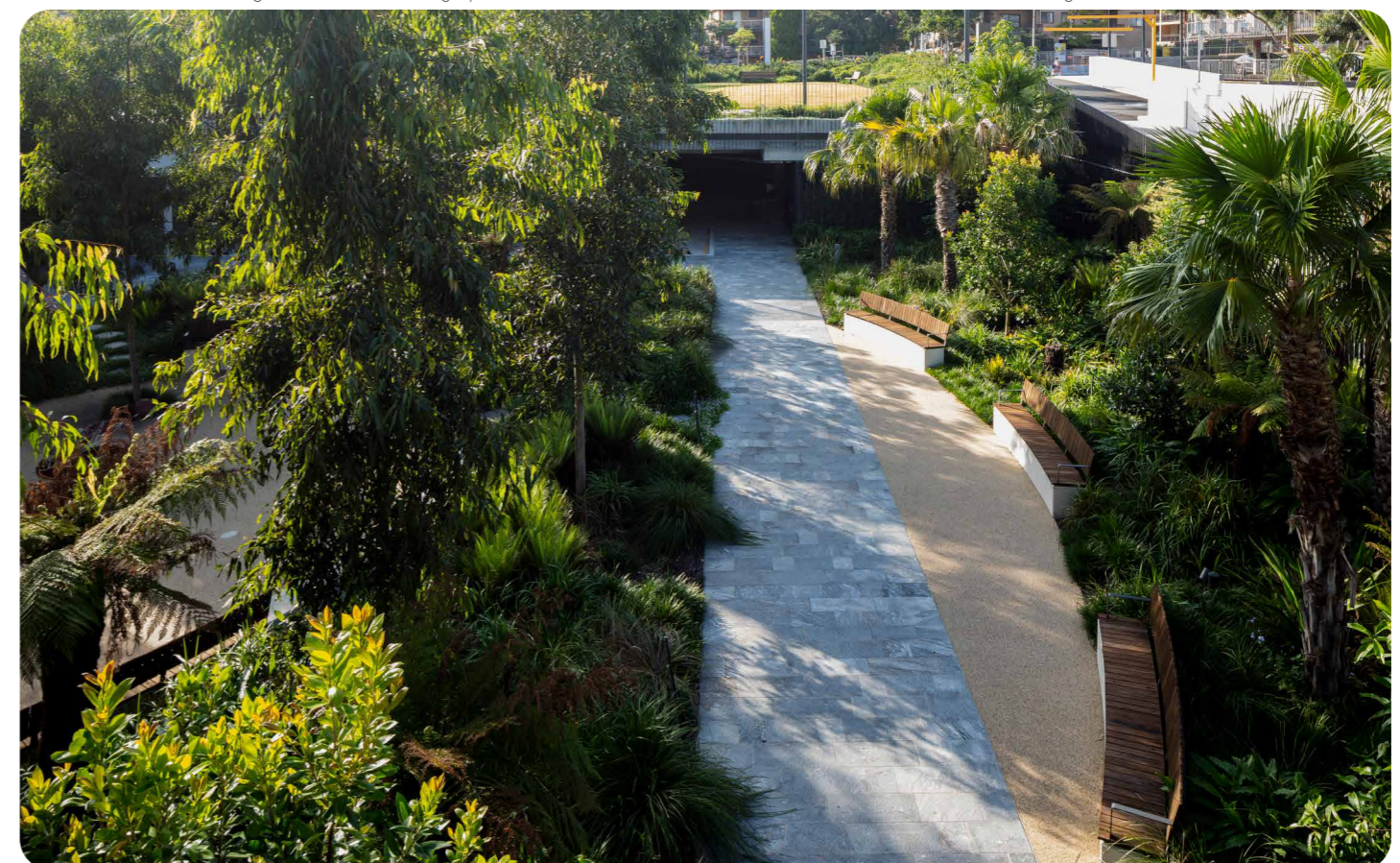
Smoking Pit Cultural Gathering Space



Tools of knowledge: Matt Poll



Mudinga: (the Dharug word for spear to hunt fish) Nicole Monks



# 6. Draft Master Plan

6.1 Public Domain Design Strategies

6.2 Neighbourhood Precinct Master Plans

6.3 Key Places

6.4 Key Street Typologies





## Connecting the Neighbourhoods - Movement Network

### Street Hierarchy

Through the introduction of new fine-grain connections, and the integration of existing streets into legible links and loops, this master plan aims to increase the permeability and function of the street network.

Streets are categorised not only on their vehicular hierarchy, but also in response to their intended character and usage. A Movement and Place diagram below provides an initial guide for the street types. Further description of street settings are outlined on the diagram opposite.

The Waterloo Road Green Boulevard is envisaged as a green corridor linking the key transport hubs and through to the University. It is a critical transport link providing dedicated bus lane and a separated cycle network, but also includes linear parks along both sides of the wide corridor with mature trees and winding pedestrian paths.

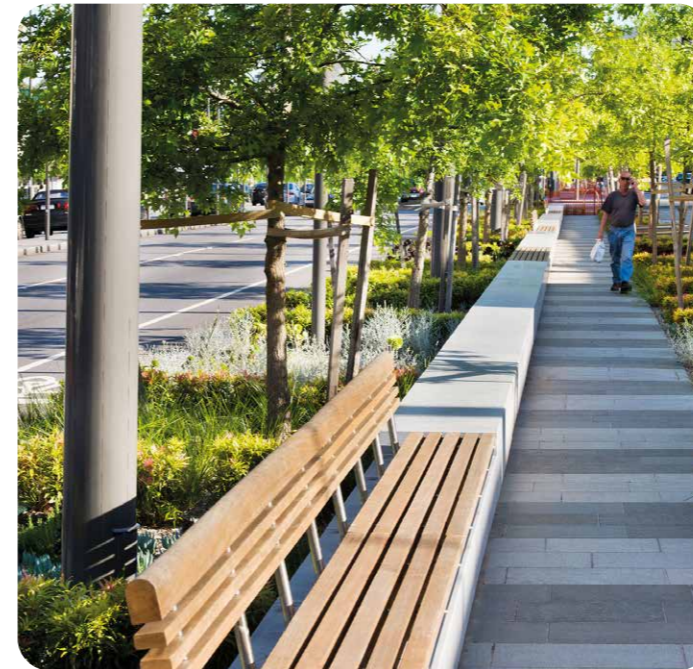
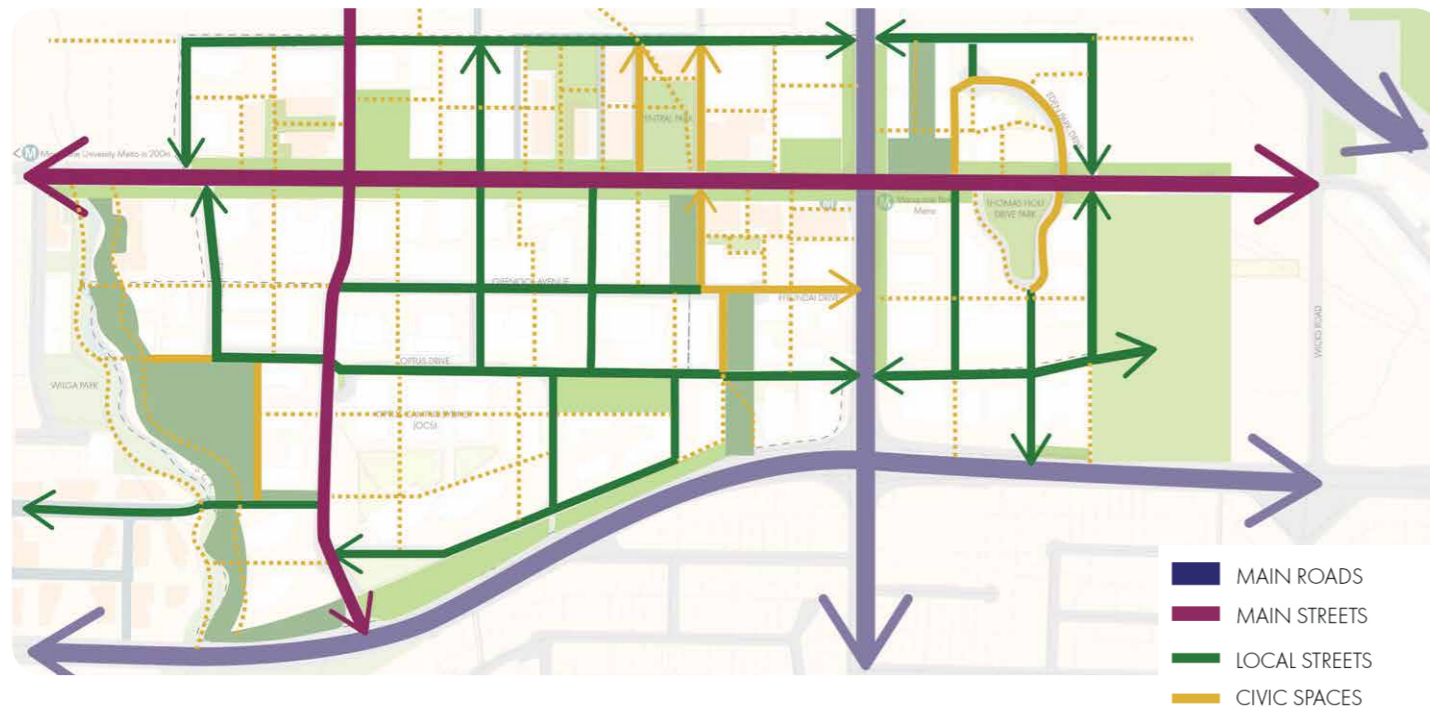
The secondary circulation routes are proposed along the neighbourhoods boundaries with clear street characters defined by different streetscape materials and planting species.

The north-south running boulevard connects the Khartoum Road and the Lyonpark Road with the missing link completed in between. Although it is not proposed for a through connection for vehicles, it offers a high quality cycle network with much more improved pedestrian walking environment and tree cover.

The local streets are to provide a quiet and low speed environment with increased street tree cover, which is safe and comfortable for pedestrian walking and informal on-road cycling.

New through-site-links are proposed, which are public accessible through the privately owned land, to increase site permeability within the large land holding sites.

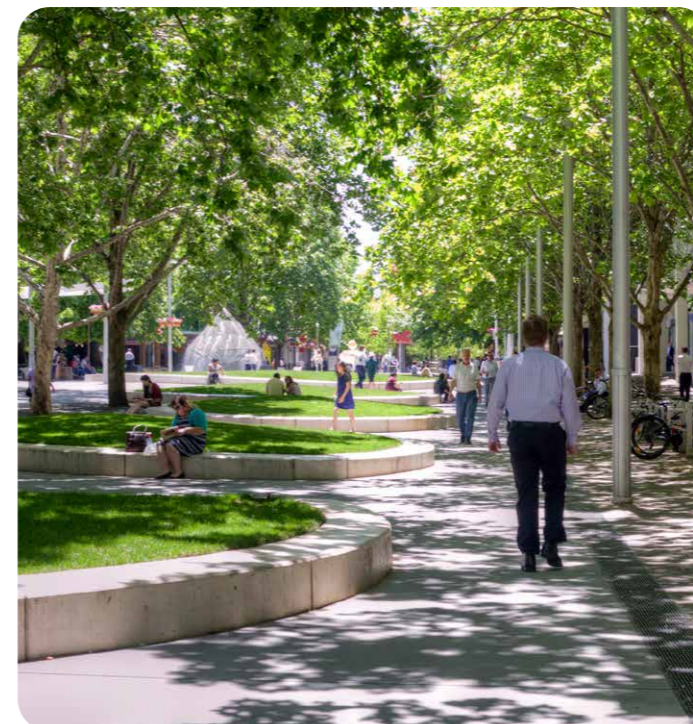
There are a couple of new pedestrian crossings as well as pedestrian bridges proposed along the Lane Cove Road, the Waterloo Road and the north-south boulevard to enable the smooth active transport connections.



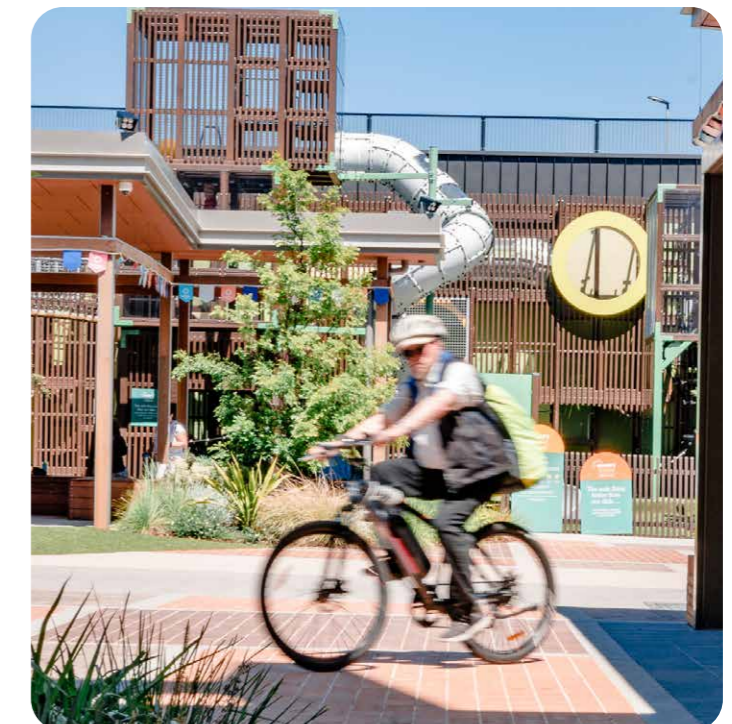
Dandenong Lonsdale St, BKK



Anzac Square, CFJ

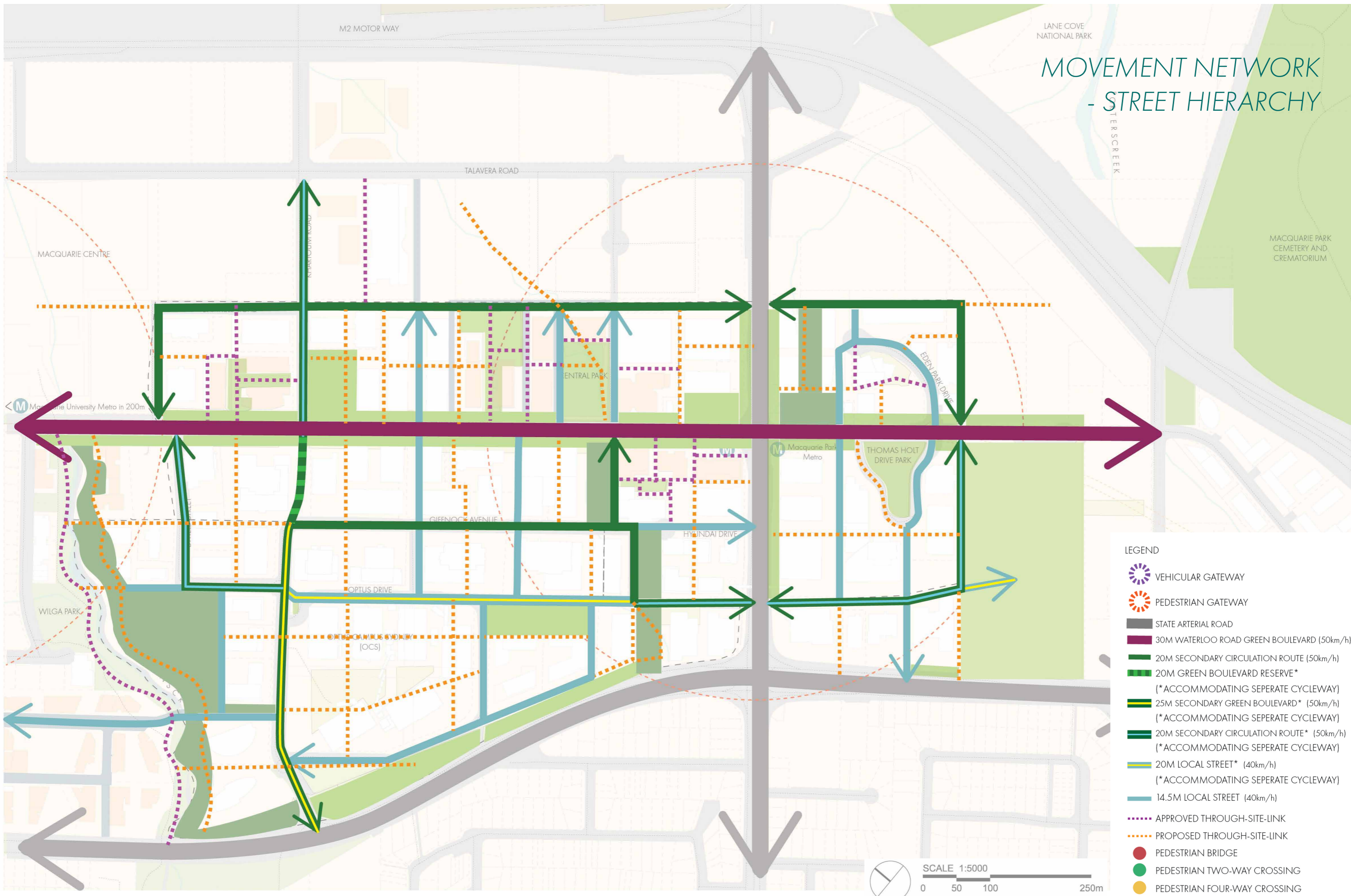


City Walk, Source: TRACT



Karingal Hub Source: Lark

# MOVEMENT NETWORK - STREET HIERARCHY



**LEGEND**

- VEHICULAR GATEWAY
- PEDESTRIAN GATEWAY
- STATE ARTERIAL ROAD
- 30M WATERLOO ROAD GREEN BOULEVARD (50km/h)
- 20M SECONDARY CIRCULATION ROUTE (50km/h)
- 20M GREEN BOULEVARD RESERVE\* (\*ACCOMMODATING SEPERATE CYCLEWAY)
- 25M SECONDARY GREEN BOULEVARD\* (50km/h) (\*ACCOMMODATING SEPERATE CYCLEWAY)
- 20M SECONDARY CIRCULATION ROUTE\* (50km/h) (\*ACCOMMODATING SEPERATE CYCLEWAY)
- 20M LOCAL STREET\* (40km/h) (\*ACCOMMODATING SEPERATE CYCLEWAY)
- 14.5M LOCAL STREET (40km/h)
- APPROVED THROUGH-SITE-LINK
- PROPOSED THROUGH-SITE-LINK
- PEDESTRIAN BRIDGE
- PEDESTRIAN TWO-WAY CROSSING
- PEDESTRIAN FOUR-WAY CROSSING



# Connecting the Neighbourhoods - Active Transport Network

## Active Transport

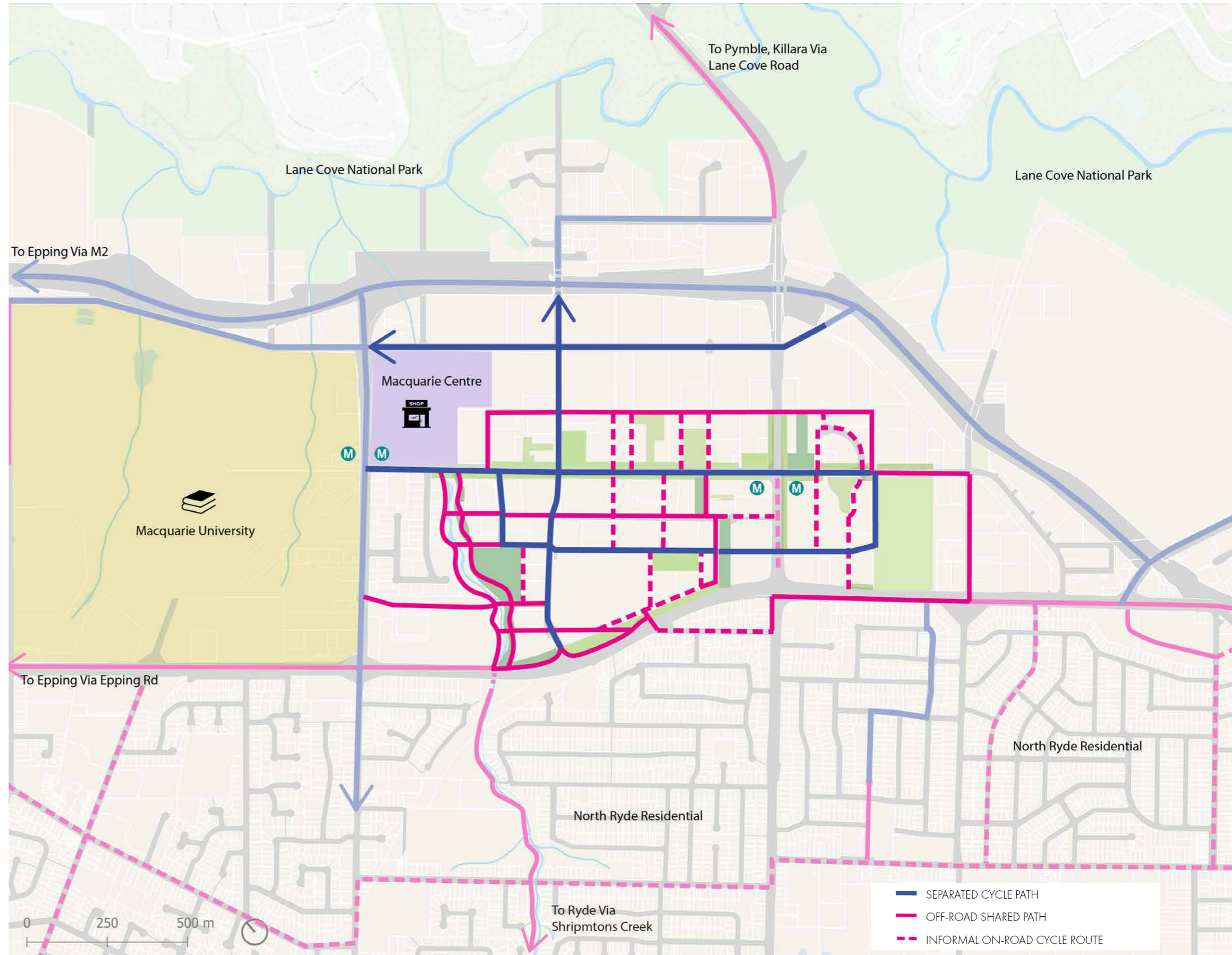
Walking and bike riding is not only the most sustainable form of transport, it also contributes to place through reducing traffic congestion, supporting busy local economies and social, vibrant streets.

The proposed cycle network is to complete the existing network not only at local level, but also to feed into the regional context.

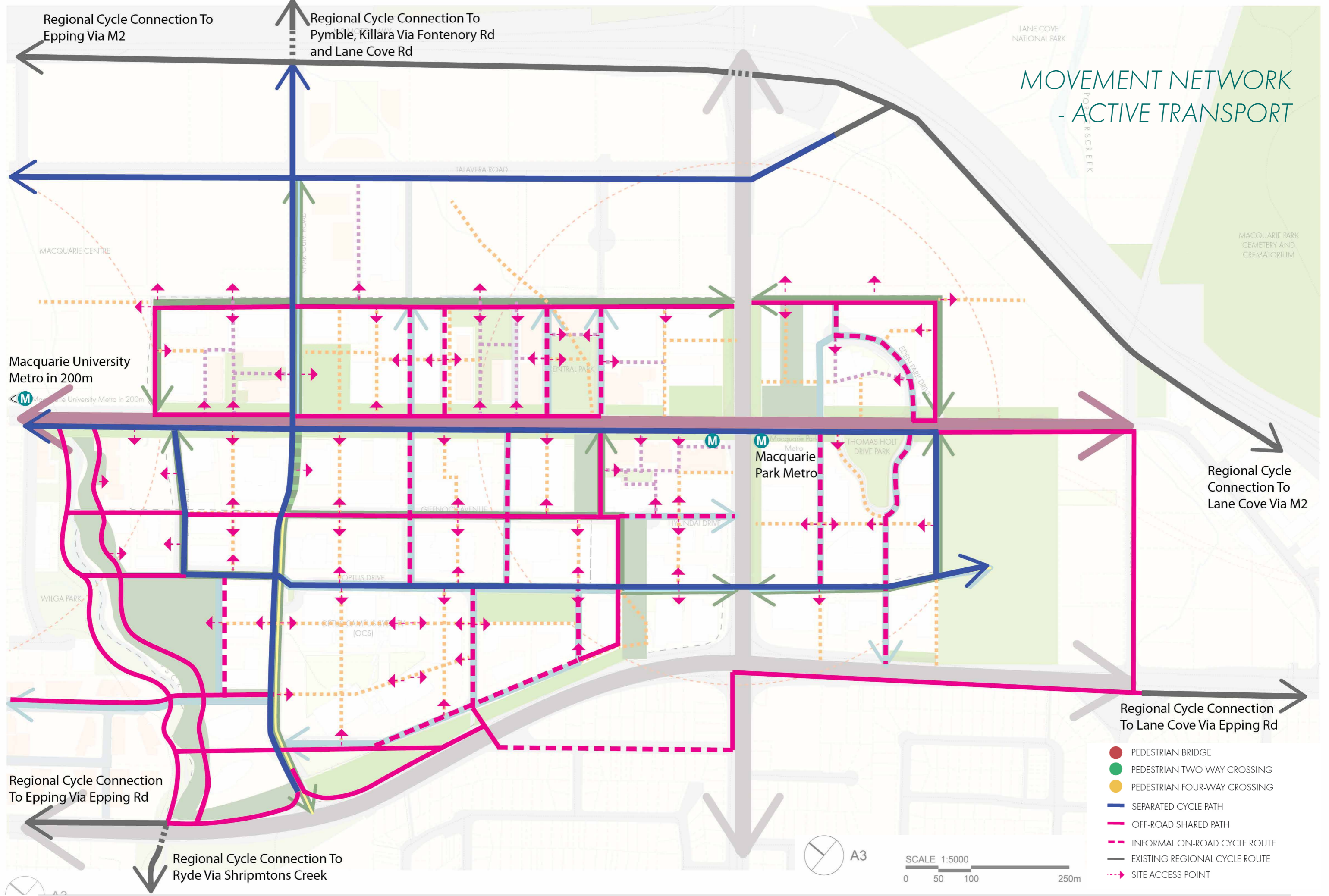
It is important to establish a high quality separate cycleway network linking the key transport hubs, facilities and destinations. This is to provide a direct, safe and day to day commute route for the cyclists, which has the least interference with the pedestrians and vehicles. The Waterloo Road running east-west and the Khartoum - Lyonpark Road boulevard running north-south form the major spines of the separate cycleway network, which are further completed by the Optus Drive link on the south and the Talavera Road link on the north.

The off-road shared paths are to be used for both pedestrians and cyclists. They are more for the slow speed, recreational riding with pedestrian priority. These shared paths are mainly along the secondary circulation routes as well as along the Shrimptons Creek Riparian Zone.

The local streets provide a quiet and low speed environment with increased street tree cover, which is safe and comfortable for pedestrian walking and informal on-road cycling.



# MOVEMENT NETWORK - ACTIVE TRANSPORT



Regional Cycle Connection To Epping Via M2

Regional Cycle Connection To Pymble, Killara Via Fontenory Rd and Lane Cove Rd

Macquarie University Metro in 200m

Macquarie Park Metro

Regional Cycle Connection To Lane Cove Via M2

Regional Cycle Connection To Epping Via Epping Rd

Regional Cycle Connection To Ryde Via Shrimptons Creek

Regional Cycle Connection To Lane Cove Via Epping Rd

- PEDESTRIAN BRIDGE
- PEDESTRIAN TWO-WAY CROSSING
- PEDESTRIAN FOUR-WAY CROSSING
- SEPARATED CYCLE PATH
- OFF-ROAD SHARED PATH
- - - INFORMAL ON-ROAD CYCLE ROUTE
- EXISTING REGIONAL CYCLE ROUTE
- - - SITE ACCESS POINT



SCALE 1:5000  
0 50 100 250m

# Connecting With Country

## Connection to Country - Public Domain

The Public Domain Plan embeds Country within the public domain strategies and designs.

As guided and directed by project studies, past and current, Design with Country is placed as a core aspect of the projects Vision and Principles, providing opportunities to embed these into the design of streets, open spaces, green connections and waterways. Stage 1 proposals are recommended to be part of an on-going Aboriginal Co-design process going forward

Two studies directly influence the Stage 1 Public Domain Plan:

1. Old Ways, New: Wallumatta Macquarie Park Draft Country Centered Design Framework (March 21) - prepared to support the preparation of Place Strategy phase; and
2. Connection to Country, Wallumedegal Country, Macquarie Park Innovation Precinct, (February 2023) - WSPs engagement and guidance work prepared to support Stage 1 phase.

These studies identify important aspects to consider and include within future public domain, streets, opens spaces, green connections and creek network. Plus acknowledging future engagement will remain a central aspect for delivery of the public domain and safeguarding ongoing relationships to direct Country within Stage 1 neighbourhoods.

Key aspects of these reports are highlighted on these pages, more detail can be found within the individual reports.

## WALLUMEDEGAL COUNTRY, MACQUARIE PARK INNOVATION PRECINCT, FEBRUARY 2023

### Planning Principles Understanding Country begins with:

**The Earth.** The earth is often referred to as Mother and everything about it is held in great reverence. The type of rock determines vegetation, tools and trade, and minerals set the prosperity of a Country as trade was sure to follow.

**The Sky.** The Father and Grandfather are often associated with the sky and sun and is where we came from and go to in the afterlife.

**Water** sets the structure of Country in the way it interacts with Earth. It carves Country up and sets the rhythm and flow of how humans experience it. It also determines where people plants and animals live by providing rich resource areas in rivers, billabongs, wetlands and riparian zones.

**Vegetation.** Determined by the above, provide the resource, tools and fuel for people to live well.

**People.** We take the Above four points and make art, culture, civilisations etc. Understanding these 4 points about Country but in a highly localised context starts to get the idea of what Country is for Aboriginal people.

## Old Ways, New

*"It will be a place for people; characterized by its connectivity and the unique setting of Wallumattagal Country – a place of rivers and fertile wetlands with a deep history of learning, trade and culture.*

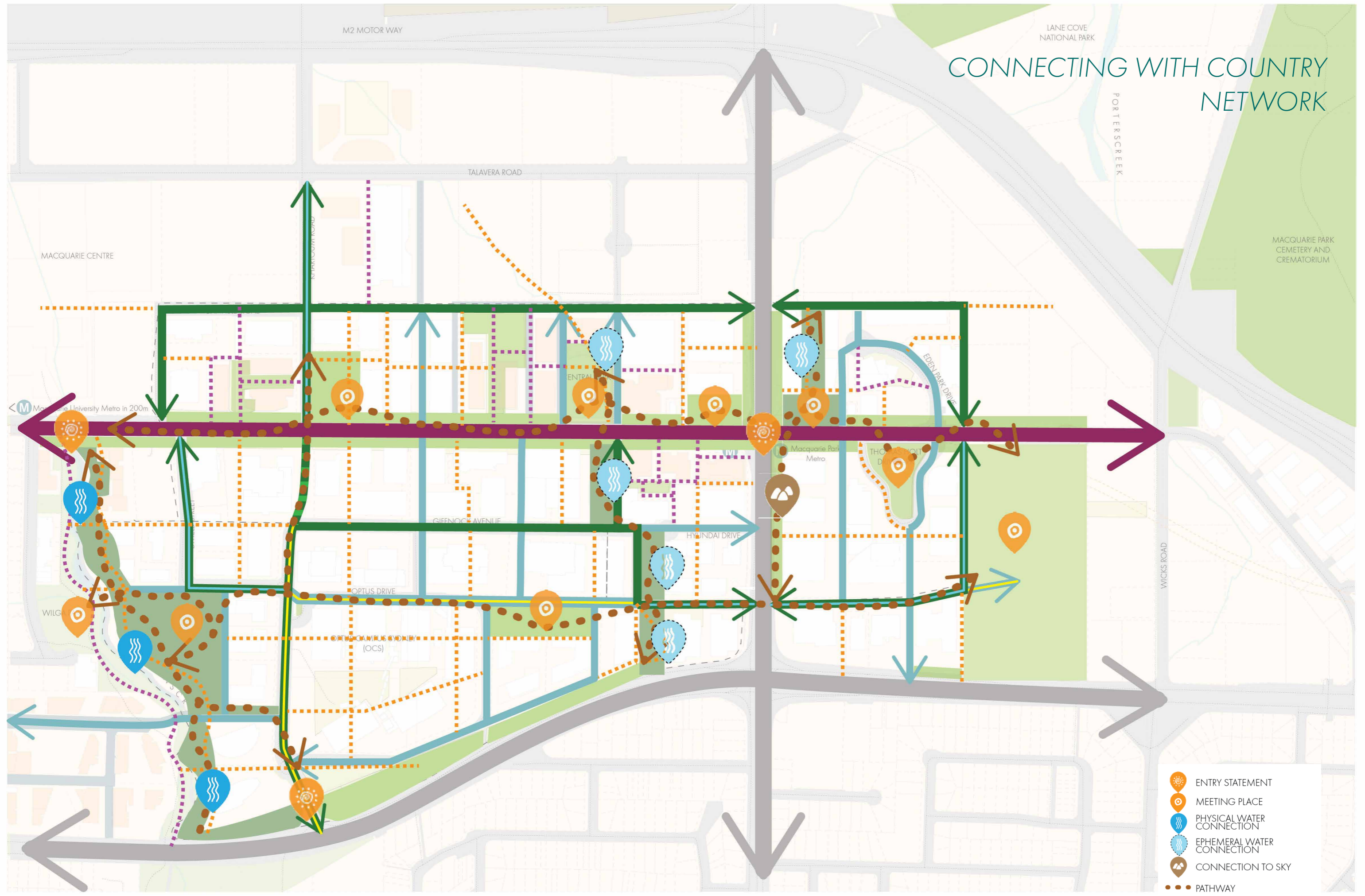
*Its current fine grain, intersecting grids and urban fabric is supported by a permeable, constant link to deep time knowledges and rich living culture. The presence and energy of Wallumattagal is both palpable, and visible within the contemporary urban fabric, demonstrating how timeless precepts of Country intersect within a contemporary business district, dedicated to creating new knowledge and higher learning."*

Wallumatta Macquarie Park Draft Country Centered Design Framework (Old Ways, New, March 21)



<p><b>Hills and high places</b> hold spiritual and practical significance including important places for stone and other alpine resources, such as bogong moths, plants, medicines etc.</p> 	<p><b>Open forest</b> a cool place important for giving cover to people and animals as well as resources and food providing a diverse range of habitats that support many species.</p> 	<p><b>Plains / Park lands</b> are important hunting grounds which are kept open using cultural fire management to provide easy access for animals and people.</p> 	<p><b>Wetlands</b> are important as they filter the water before entering rivers and provide the structure and resources for an abundance of food, ecological niches and resources.</p> 	<p><b>Rivers / Water</b> are perhaps the most significant practically and spiritually, as water sustains and promotes life.</p> 
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# CONNECTING WITH COUNTRY NETWORK



-  ENTRY STATEMENT
-  MEETING PLACE
-  PHYSICAL WATER CONNECTION
-  EPHEMERAL WATER CONNECTION
-  CONNECTION TO SKY
-  PATHWAY

## Open Space Network & Typology

**A generous provision of connected open spaces is distributed across the neighbourhood precincts. This network is led by Country and Aboriginal planning principles.**

To direct, guide, and infuse Connection to Country into the streets, open spaces, green connections and waterways, demonstrating a respect for culture and Aboriginal understanding of this place:

- Declare and share relationships with earth, water, sky relationships;
- Supports journey;
- Gathering, rest, nourish body and soul; and
- A place which holds safe memories and story.

These spaces will have a variety of scale and nature, with programming and functions that support the range of needs of the increased population and role of the precincts.

The increased provision of open space supports future development proposals and established targets, planning for an Innovation Precinct that is green and active with outdoor spaces for exercise, play and relaxation.

The network of these spaces is linked via vegetation corridors and pedestrian links which follow natural creek lines along the Woven Ways, becoming opportunities for living streets

- Aboriginal lead planting designs. Vegetation to become the breathing, growing, nourishing base layer of the neighbourhoods
- Embrace and reveal water story
- Integrate Woven Ways into site planning, movement corridors, story telling and knowledge sharing.

Increased pedestrian movement to and between the open space is encouraged with increased walkability and more active transport links.

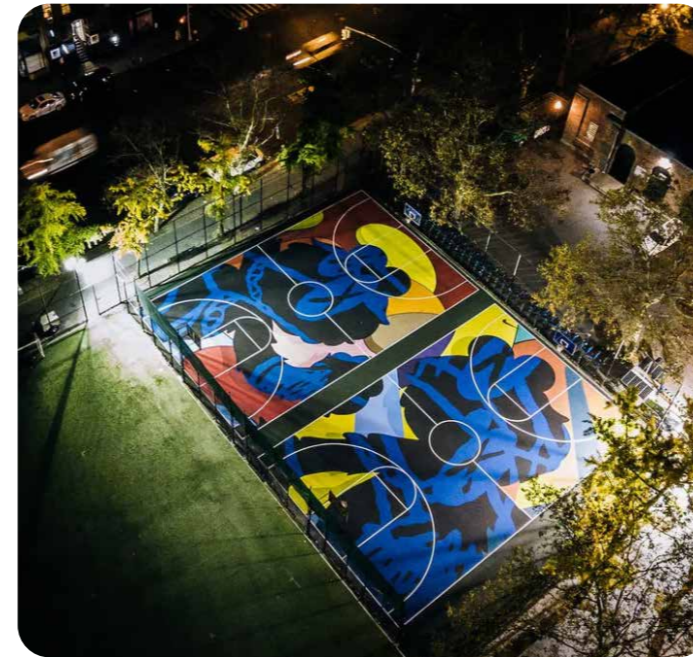
The master plan aims to maximise existing opportunities for inclusion of open space within the precinct, and ensure that all neighbourhoods have equitable access to shade, vegetation and open space, responding to the unique character of each area.

### Park and Open Space Names

The names given to the parks and open spaces are “holding names” based upon the existing street as a location for this Public Domain Plan for Stage 1. This is a significant opportunity for a local language names to be used, once been consulted on with elders.

*“Take the use of Aboriginal language and words away and share for approval ....The loss of language equals the loss of culture, but we need to get it right as words and names last forever.”*

*Connection to Country, Wallumedegal Country, Macquarie Park Innovation Precinct, (February 2023)*



Stanton Street Courts, KAWS



Horscroft Place Pocket Park, DELWP

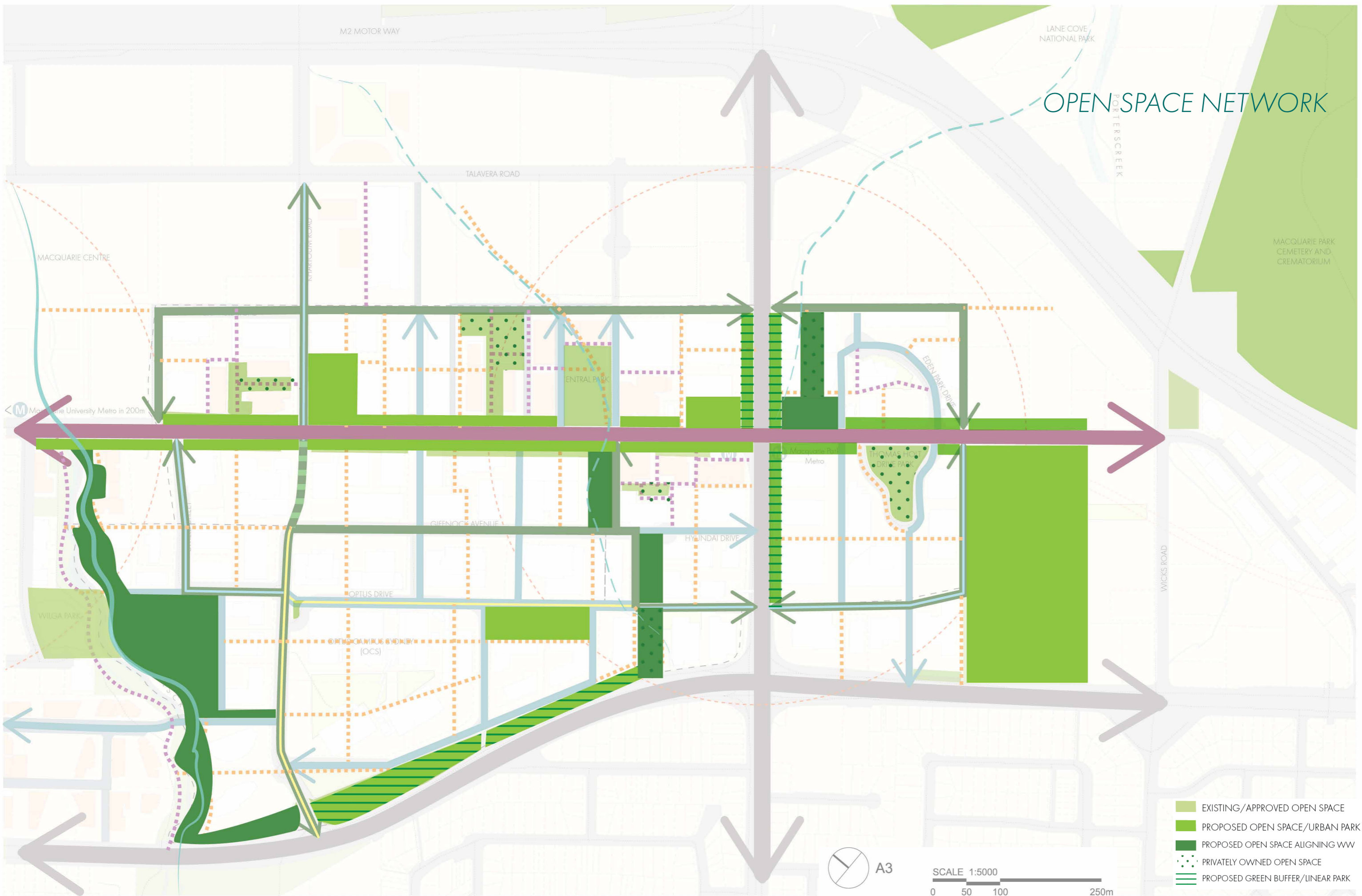


Lemon Scented Lawns, TCL



Bella Vista Pocket Park, Landcom





## Green Blue Grid & Woven Ways

### A Water Sensitive Urban Design (WSUD) streetscape will respond to the local topography and emphasise the Woven Ways and hidden creeks of Macquarie Park by bringing the hydrological story of the region into the urban landscape.

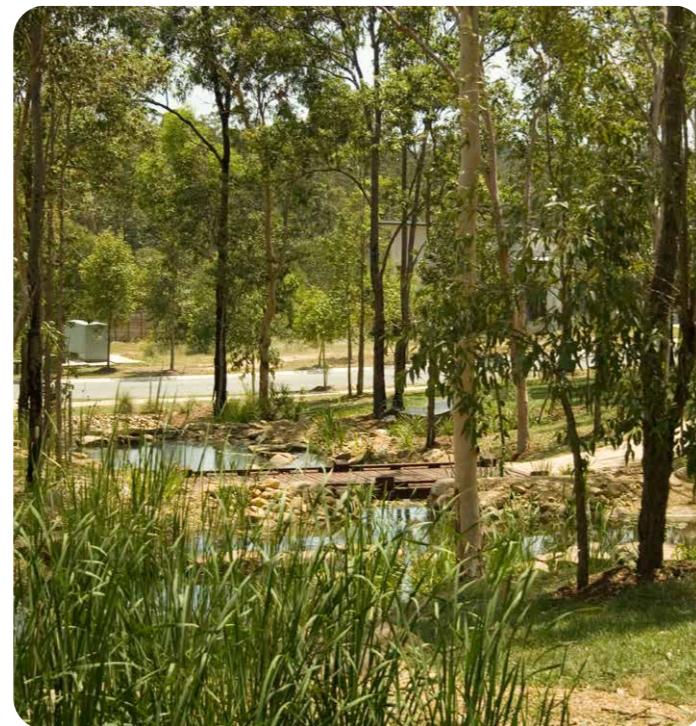
Living streets will be designed with WSUD features that nourish and supplement the tree canopy network while responding to the overland flow paths. Rainfall will be optimised where it falls throughout the public domain streets and open spaces with most surface water being directed towards root zones and planting beds. In addition, a focus will be to provide porous surfaces over root zones where possible, further to nourish sub soil and root zones.

Meeting precinct targets for tree canopy requires every opportunity to be taken to plant trees throughout the public domain spaces. This is particularly important in this urban environment with large buildings and relatively wide road corridors, to provide a connected canopy. Road corridor spaces will prioritise tree planting, with appropriate deep soil and structurally supported sub base/ root zone so that optimum growing conditions are spatially secured in each street typology.

Aboriginal designed and profiled plantings that respond to the existing vegetation remnants and pre-colonial vegetative communities found in this area. Plantings will incorporate appropriate species from: Sydney Coastal Sandstone Gully Forest; Sydney Coastal Enriched Sandstone Forest; Sydney Coastal Shale-Sandstone Forest and Sydney Turpentine Ironbark Forest. Planting will feature culturally significant species that are used in cultural practices such as weaving, smoking ceremonies and traditional bush foods. They will become the living, breathing, nourishing and repairing role within the streets and open spaces. This provides long term Connection to Country as an underlying influence for character and experience as well as enabling continuation of cultural practices, the immersion of which becomes fuller over time.

### Woven Way - Creek Revitalisation

Shrimptons Creek: An existing Creek corridor with opportunity to revitalise and regenerate the riparian zones. This Creek will be a focus for physical recognition of Woven Way, with improved access to water riparian plantings, new crossing points and holistic approach to improving the Creek corridor. Woven Way recognition will focus on riparian rejuvenation, along with opportunities for sharing stories about this Creek and the creek networks.



Bougainvillea Gdns Brook-water Source: TRACT

### Woven Way - Creek Reflected Throughout Connected Living Streets

Industrial Creek: A rich and vibrant connected series of "Living Streets" can reflect this Woven Way. Wider street setbacks and a series of distinct linked WSUD corridors can reveal the hidden creek in this location. Overland flow can be harnessed to provide an active streetscape, while rest places and shady spaces using Woven Way pallet of materials will signify and reveal the nature of this place.



Tanner Springs Park, Green Works

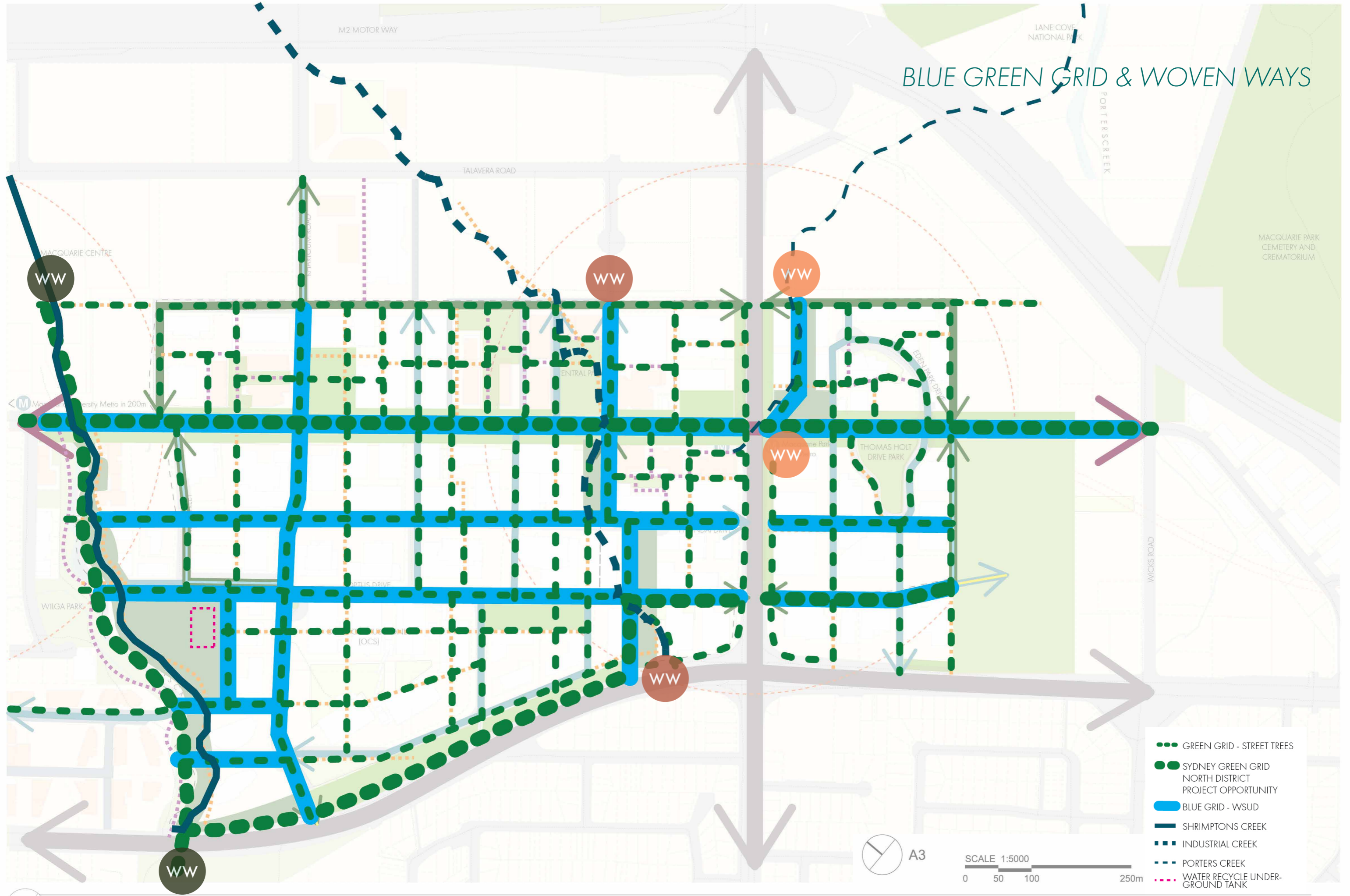
### Woven Way - Creek Recognised and Revealed

Porters Creek. A hidden creek which can be revealed and discovered. Opportunity to emphasise a level change will increase the attraction of the space and heighten the discovery element. Materials will reflect Woven Way pallets, rich textures and vegetation designs being specific to Woven Way character. Story telling here will be important to represent the hidden creek.



Fairfax Hunters View, Andrea Cochran Landscape Architecture

# BLUE GREEN GRID & WOVEN WAYS



- GREEN GRID - STREET TREES
- SYDNEY GREEN GRID NORTH DISTRICT PROJECT OPPORTUNITY
- BLUE GRID - WSUD
- SHRIMPTONS CREEK
- INDUSTRIAL CREEK
- - - PORTERS CREEK
- - - WATER RECYCLE UNDERGROUND TANK

A3

SCALE 1:5000  
0 50 100 250m

# Greening the Neighbourhoods - Street Tree Network and Tree Canopy

## Street Tree Masterplan & Tree Canopy

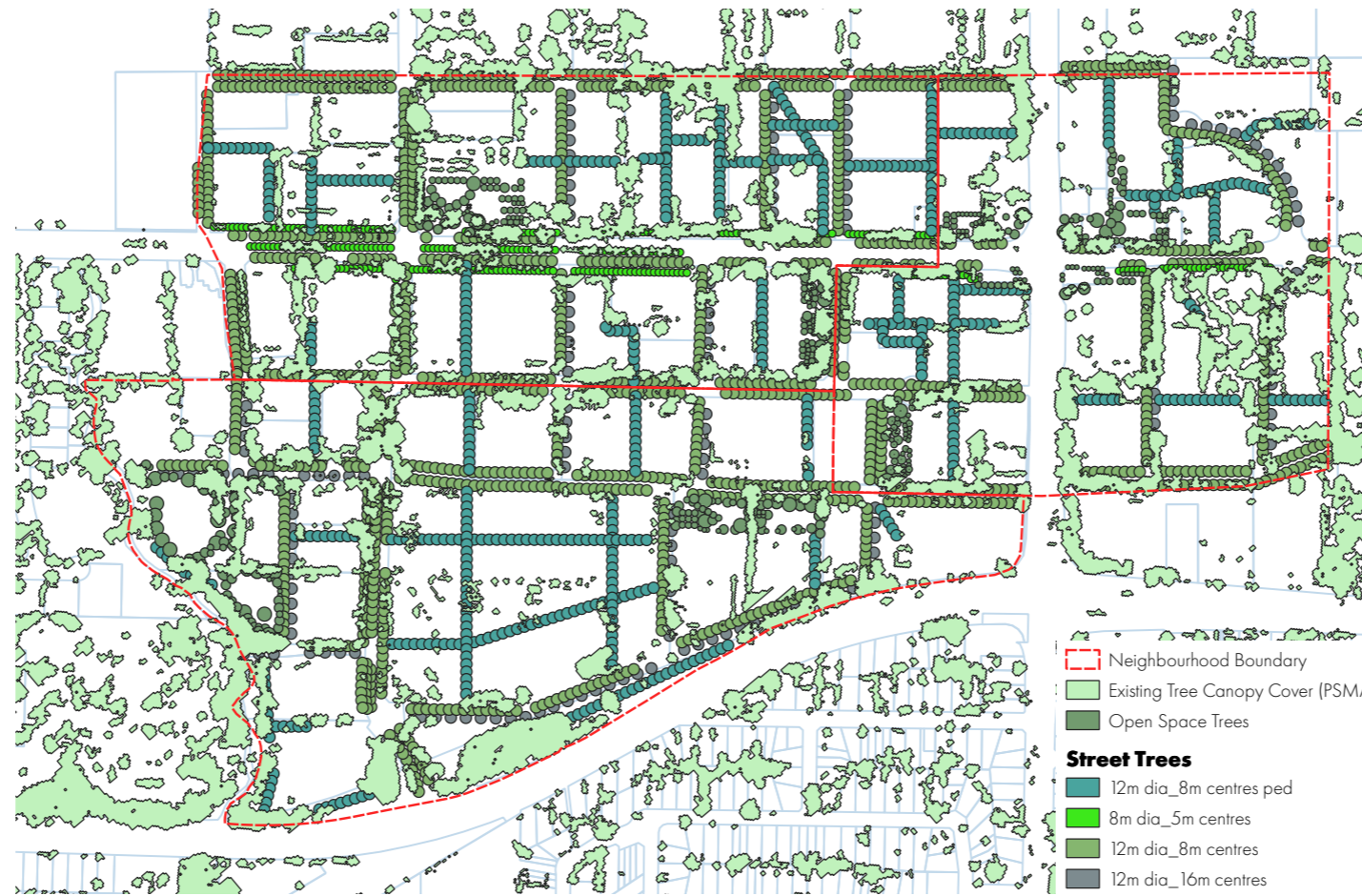
The street tree strategy creates shady, comfortable and inviting streets using native species, with scale and density that complement the street character and hierarchy.

The Street Tree Network plan guides the structure of tree presence and scale across the 3 neighbourhoods and responds to the following:

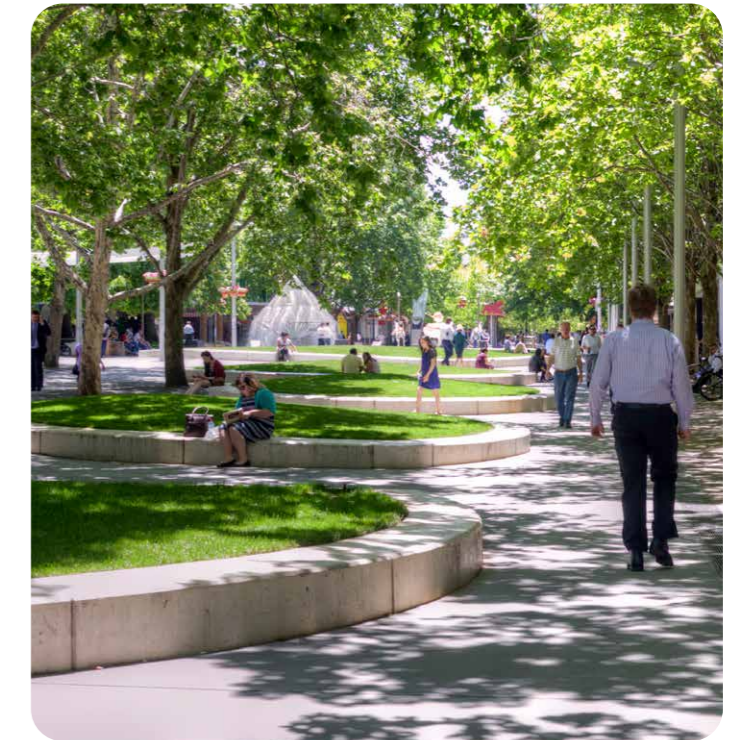
- Provides a response to neighbourhood character and experience being corporate, commercial, residential or station precinct areas.
- Presents a street experience and journey sequence, manipulating key vantage points and view axis, creating signature moments and supporting intuitive way finding and orientation, creating a unique 'sense of place' along connected corridors.
- Reflects street hierarchy through the selection of large, medium, small trees to suit the scale of the street corridor in each location, considering the street usage and the functional requirements of different users to maximise public amenity,
- Supports biodiversity, with appropriate selections that respond to the site conditions to support establishment, longevity and ongoing maintenance requirements.

Generally each street is suggested to have a dominant species arrangement from end to end, giving the opportunity for signature moments to stand out at the Woven Way interfaces, park frontages.

Tree Species selections are guided by trees lists supplied by Ryde City Council for the area, studies previously prepared for Macquarie Park and the Waterloo Road Masterplan. And are influenced by vegetation community types found in this region of Sydney Coastal Sandstone Gully Forest; Sydney Coastal Enriched Sandstone Forest; Sydney Coastal Shale-Sandstone Forest and Sydney Turpentine Ironbark Forest. Using these as a base setting for species selection is advantageous. Overall the street tree species pallets will be consistent across the 3 neighbourhoods, with some Profiled Species selected as a highlight species in each of the neighbourhoods.



Neighbourhood	Tree Canopy Targets (MPIP Strategic Master Plan)	Tree Canopy Targets (SISA Macquarie Park Green Infrastructure Report-Addendum)	Tree Canopy - Existing	Tree Canopy - Proposed
Waterloo Park 'Badu Nawi'	- Commercial Centre 35% - Open Space 45%	35% canopy cover	16% canopy cover	43.3% canopy cover
Shrimptons Quarter 'Waragal Birrung'	- Commercial Centre/ Business Park 35% - Residential 40% -Open Space 45%	35% canopy cover	19% canopy cover	40.8% canopy cover
Macquarie Living Station 'Gari Nawi'	- Commercial Centre/ Business Park 35% - Residential 40% -Open Space 45%	35% canopy cover	17.8% canopy cover	37.7% canopy cover

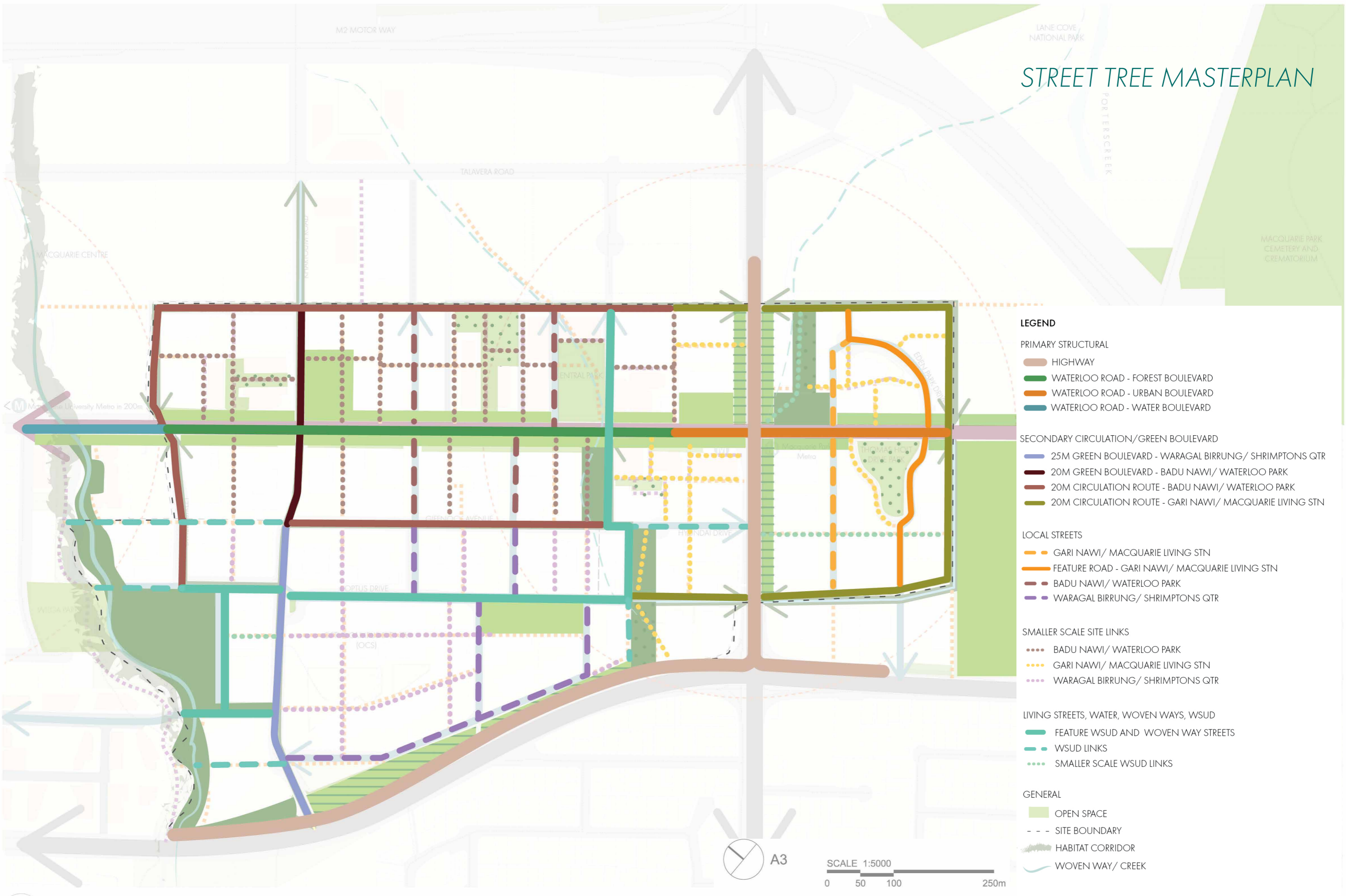


City Walk, Tract



NE Cornell Road, Hillsboro

# STREET TREE MASTERPLAN

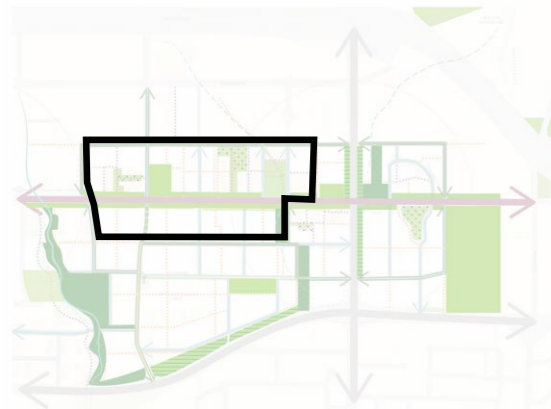


- LEGEND**
- PRIMARY STRUCTURAL**
    - HIGHWAY
    - WATERLOO ROAD - FOREST BOULEVARD
    - WATERLOO ROAD - URBAN BOULEVARD
    - WATERLOO ROAD - WATER BOULEVARD
  - SECONDARY CIRCULATION/GREEN BOULEVARD**
    - 25M GREEN BOULEVARD - WARAGAL BIRRUNG/ SHRIMPSTONS QTR
    - 20M GREEN BOULEVARD - BADU NAWI/ WATERLOO PARK
    - 20M CIRCULATION ROUTE - BADU NAWI/ WATERLOO PARK
    - 20M CIRCULATION ROUTE - GARI NAWI/ MACQUARIE LIVING STN
  - LOCAL STREETS**
    - GARI NAWI/ MACQUARIE LIVING STN
    - FEATURE ROAD - GARI NAWI/ MACQUARIE LIVING STN
    - BADU NAWI/ WATERLOO PARK
    - WARAGAL BIRRUNG/ SHRIMPSTONS QTR
  - SMALLER SCALE SITE LINKS**
    - BADU NAWI/ WATERLOO PARK
    - GARI NAWI/ MACQUARIE LIVING STN
    - WARAGAL BIRRUNG/ SHRIMPSTONS QTR
  - LIVING STREETS, WATER, WOVEN WAYS, WSUD**
    - FEATURE WSUD AND WOVEN WAY STREETS
    - WSUD LINKS
    - SMALLER SCALE WSUD LINKS
  - GENERAL**
    - OPEN SPACE
    - SITE BOUNDARY
    - HABITAT CORRIDOR
    - WOVEN WAY/ CREEK



# Public Domain Character & Materials

## Butbut (Heart) Waterloo Park



### Hard-scape, Street Furniture & Lighting

Nature of the public domain and open spaces are civic and urban, these are active city spaces.

Diverse range of users, these civic spaces which support the activities generated by the corporate and commercial buildings around them.

Materiality will reflect this and will be of a civic pallet. Larger format paving, opportunity for patterning specific to the spaces, with location designed elements which are integrated into the fabric of the space. Distinct shelters and shade structures provide added visual focus for plaza spaces.

### Pedestrian Hard Surfaces - General

Plazas/meeting points: large format surfacing



Pedestrian connections/through site links: medium format surfacing



### Street Furniture and Lighting

Bench seating



Bike hoops



Source: Australian Bollards

Bollards



Source: Tract

Bins



Source: City of Ryde model dual rubbish bins with butt bin

Drinking fountain with dog bowl



Multifunctional light pole



Pedestrian scale lights



### Character Elements

Signature median



Integrated seating



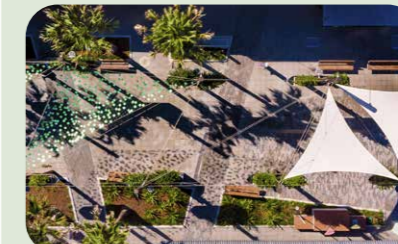
Interpretive paving at activity hubs



Permeable/signature paving at Woven Way linear park



Shelters/installations - opportunity for art integration



Source: Redman Road Plaza, Tract

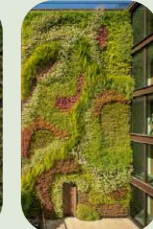
Pedestrian bridge over bio-swale

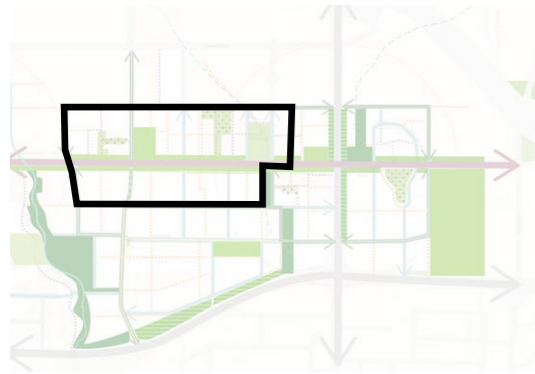


Stone/boulder elements at Woven Way linear park



Green walls at commercial building interface, screening elements, barriers and fence element





## Street Trees & Planting

Trees, shrubs and ground cover final selections to be designed in collaboration with specialist Aboriginal planting designers. Vegetation community types represented in this neighbourhood are:

- Sydney Coastal Sandstone Gully Forest;
- Sydney Coastal Enriched Sandstone Forest;
- Sydney Coastal Shale-Sandstone Forest and
- Sydney Turpentine Ironbark Forest.

Profiled Tree Species selected as a highlight in this neighbourhood:

- Sydney Red Gum
- Spotted Gum
- Forest Red Gum
- Rough-barked Apple
- Blackbutt
- Sydney Blue Gum
- Red Mahogany
- Turpentine
- Blueberry Ash
- Port Jackson Fig
- Chinese Elm
- Crow's Ash
- Grey Gum

Species selected for Living Streets:

- Swamp Mahogany
- Blackbutt
- Sydney Peppermint
- Sydney Blue Gum
- Ground covers and grasses

### Typical Tree Dimensions in Urban Areas Code (m):

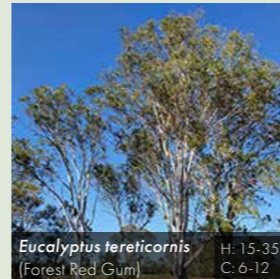
H - Height

C - Canopy

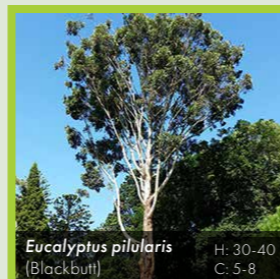
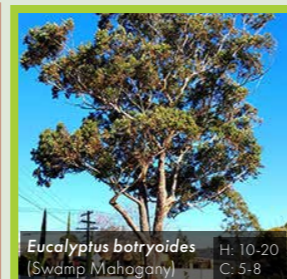
## Street Trees - Primary

20-30m Green Boulevards

### Large Smooth-barked Native Trees

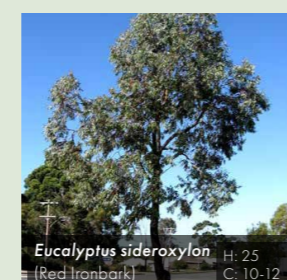


### Large-Medium Trees



### Feature Broad Canopy Trees

On street corners, entry thresholds, park entry & interface with streets



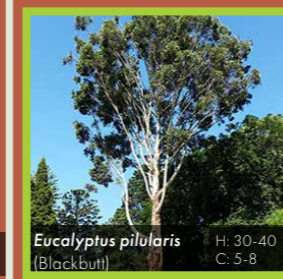
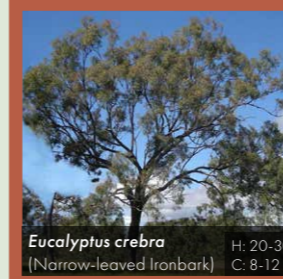
## Street Trees - Secondary

20-25m Green Boulevard & Circulation Route, Local Streets

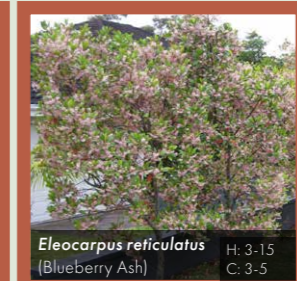
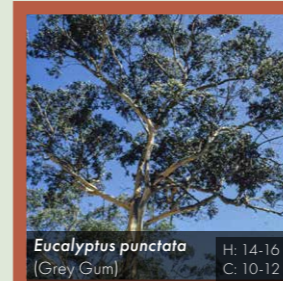
### Large Smooth-barked Native Trees



### Large-Medium Trees



### Small Trees



## Living Streets

Water/Woven Way/WSUD

### Native species

With a specific focus on site specific Aboriginal designed gardens which will feature endemic species and include plants of cultural significance which can be accessed to support cultural practices, such as weaving, along well as WSUD function where needed



### Local Streets & Through-site Links

Source: City of Ryde Public Domain Manual and City of Ryde Street Tree Master Plan 16 April 2013

# Public Domain Character & Materials

## Waragal Birrung (Evening Star) Shrimptons Quarter



### Hard scape, Street Furniture & Lighting

The presence of Shrimpton's Creek inspires a neighbourhood character which has a strong connection to nature to influence the materials pallet throughout.

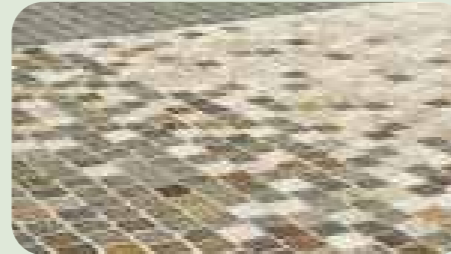
Recognition of proximity to the creek creates opportunities for bridges and board walk details. Riparian creek parkland inspired vegetation, simple linear pathway surfacing with a rich Woven Way materiality overlay offer many opportunities to reflect natural settings.

### Pedestrian Hard Surfaces - General

Pedestrian connections/through site links:  
medium format surfacing



Contrasting detail and spaces with cultural /  
central focus: small format surfacing



Transition/variation of size



### Street Furniture and Lighting

Bench seating



Bike hoops



Bollards



Source: Tract

Bins



Source: City of Ryde  
model dual rubbish bins with butt bin

Drinking fountain with dog bowl



Seats and picnic tables



Street light pole



Pedestrian scale lights



### Character Elements

Interpretation elements embedded into design



Creekside board walk



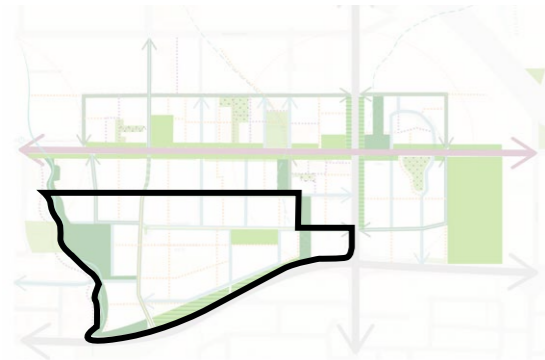
Bespoke shelters and shade structures



Gathering and event spaces







## Street Trees & Planting

Trees, shrubs and ground cover final selections to be designed in collaboration with specialist Aboriginal planting designers. Vegetation community types represented in this neighbourhood are::

- Sydney Coastal Sandstone Gully Forest;
- Sydney Coastal Enriched Sandstone Forest;
- Sydney Coastal Shale-Sandstone Forest and
- Sydney Turpentine Ironbark Forest.

Profiled Species selected as a highlight in this neighbourhood:

- Sydney Red Gum
- Spotted Gum
- Rough-barked Apple
- Blackbutt
- Sydney Blue Gum
- Sydney Peppermint
- Smooth Quandong
- Port Jackson Fig
- Grey Iron bark
- Tulipwood

Species selected for Living Streets:

- Sydney Red Gum
- Blackbutt
- Sydney Peppermint
- Ground covers and grasses

### Typical Tree Dimensions in Urban Areas Code (m):

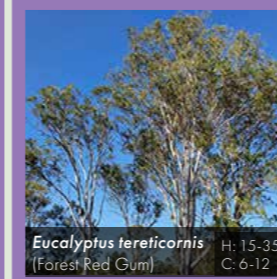
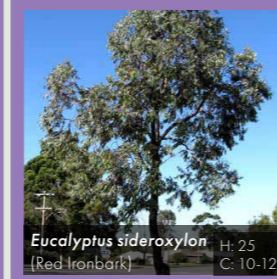
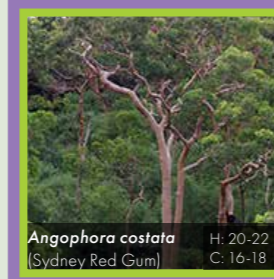
H - Height

C - Canopy

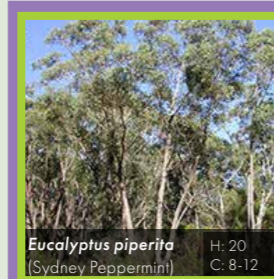
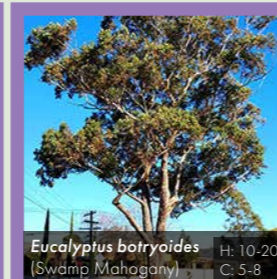
## Street Trees - Primary

20-30m Green Boulevards

### Large Smooth-barked Native Trees

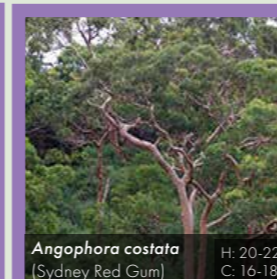
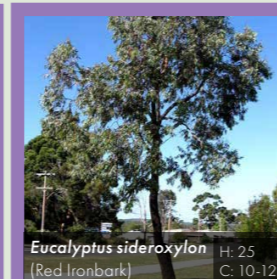


### Large-Medium Trees



### Feature Broad Canopy Trees

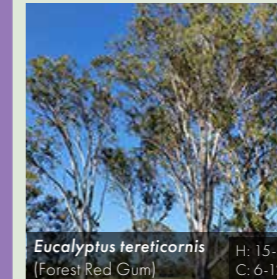
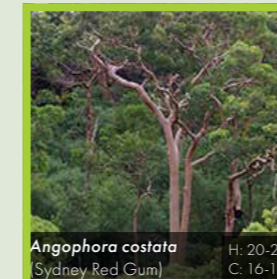
On street corners, entry thresholds, park entry & interface with streets



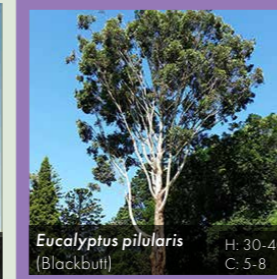
## Street Trees - Secondary

20-25m Green Boulevard & Circulation Route, Local Streets

### Large Smooth-barked Native Trees

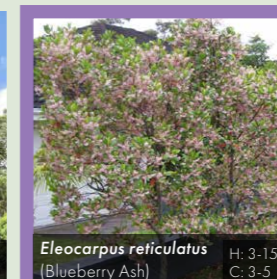


### Large-Medium Trees



### Small Trees

Local Streets & Through-site Links



## Living Streets

Water/Woven Way/WSUD

### Native species

With a specific focus on site specific Aboriginal designed gardens which will feature endemic species and include plants of cultural significance which can be accessed to support cultural practices, such as weaving, along well as WSUD function where needed



Source: City of Ryde Public Domain Manual and City of Ryde Street Tree Master Plan 16 April 2013

# Public Domain Character & Materials

## Gari Nawi (Salt-water Canoe) Macquarie Living Station



### Hard-scape, Street Furniture & Lighting

Public domain will be generally civic in nature, supporting this transport interchange precinct. Opportunity for bold larger scaled statements and vivid colours to reflect energy of this arrival place, and with a material relationship with the Waterloo Road palette linking the precincts.

Beyond this spaces materials will reflect the mix of urban and residential users, in the parks and streetscapes spaces.

Woven Way lines are gently knitted into the north east Metro Precinct open space. Richness of materiality is emphasised and indicates local presence of hidden Porters Creek. Use of hard and soft surfaces, colours, textures and vegetation will indicate and subtly reveal an ephemeral waterway.

### Pedestrian Hard Surfaces - General

Plazas/meeting points: large format surfacing



Pedestrian connections/through site links: medium format surfacing



### Street Furniture and Lighting

Bench seating



Bike hoops



Bollards



Source: Tract

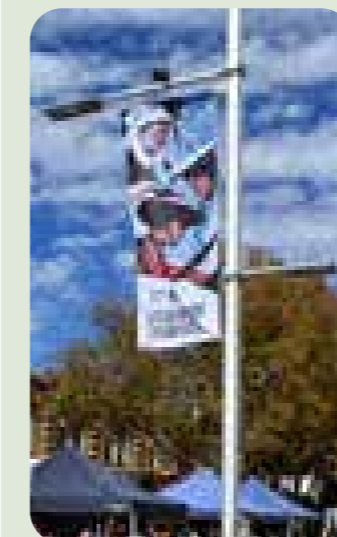


Source: City of Ryde model dual rubbish bins with butt bin

Drinking fountain with dog bowl



Multifunctional light pole



Pedestrian scale lights



### Character Elements

Interpretive paving at Metro station plaza/concourse



Stone seating and level change elements



Interpretive paving at open space



Sculpture/element to make Metro station plaza distinctive



Bespoke shelter

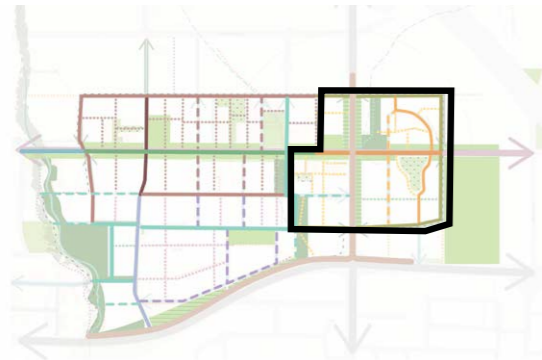


Source: 275 George Street, Brisbane, Tract

Water elements



Source: Taylor Square, NSW, Tract



## Street Trees & Planting

Trees, shrubs and ground cover final selections to be designed in collaboration with specialist Aboriginal planting designers. Vegetation community types represented in this neighbourhood are:

- Sydney Coastal Sandstone Gully Forest;
- Sydney Coastal Enriched Sandstone Forest;
- Sydney Coastal Shale-Sandstone Forest and
- Sydney Turpentine Ironbark Forest.

Profiled Species selected as a highlight in this neighbourhood:

- Sydney Red Gum
- Spotted Gum
- Rough-barked Apple
- Blackbutt
- Sydney Blue Gum
- Sydney Peppermint
- Smooth Quandong
- Port Jackson Fig
- Grey Ironbark
- Tulipwood

Species selected for Living Streets:

- Sydney Red Gum
- Blackbutt
- Sydney Peppermint
- Ground covers and grasses

### Typical Tree Dimensions in Urban Areas Code (m):

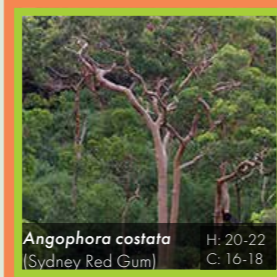
H - Height

C - Canopy

## Street Trees - Primary

20-30m Green Boulevards

### Large Smooth-barked Native Trees



### Large-Medium Trees



### Feature Broad Canopy Trees

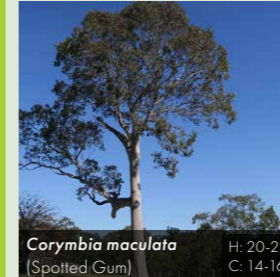
On street corners, entry thresholds, park entry & interface with streets



## Street Trees - Secondary

20-25m Green Boulevard & Circulation Route, Local Streets

### Large Smooth-barked Native Trees

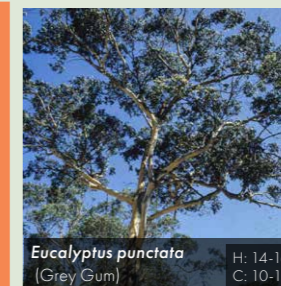
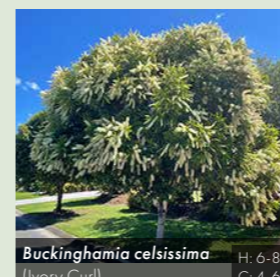


### Large-Medium Trees



### Small Trees

Local Streets & Through-Site Links



## Living Streets

Water/Woven Way/WSUD

### Native species

With a specific focus on site specific Aboriginal designed gardens which will feature endemic species and include plants of cultural significance which can be accessed to support cultural practices, such as weaving, along well as WSUD function where needed



Source: City of Ryde Public Domain Manual and City of Ryde Street Tree Master Plan 16 April 2013

## Walkability

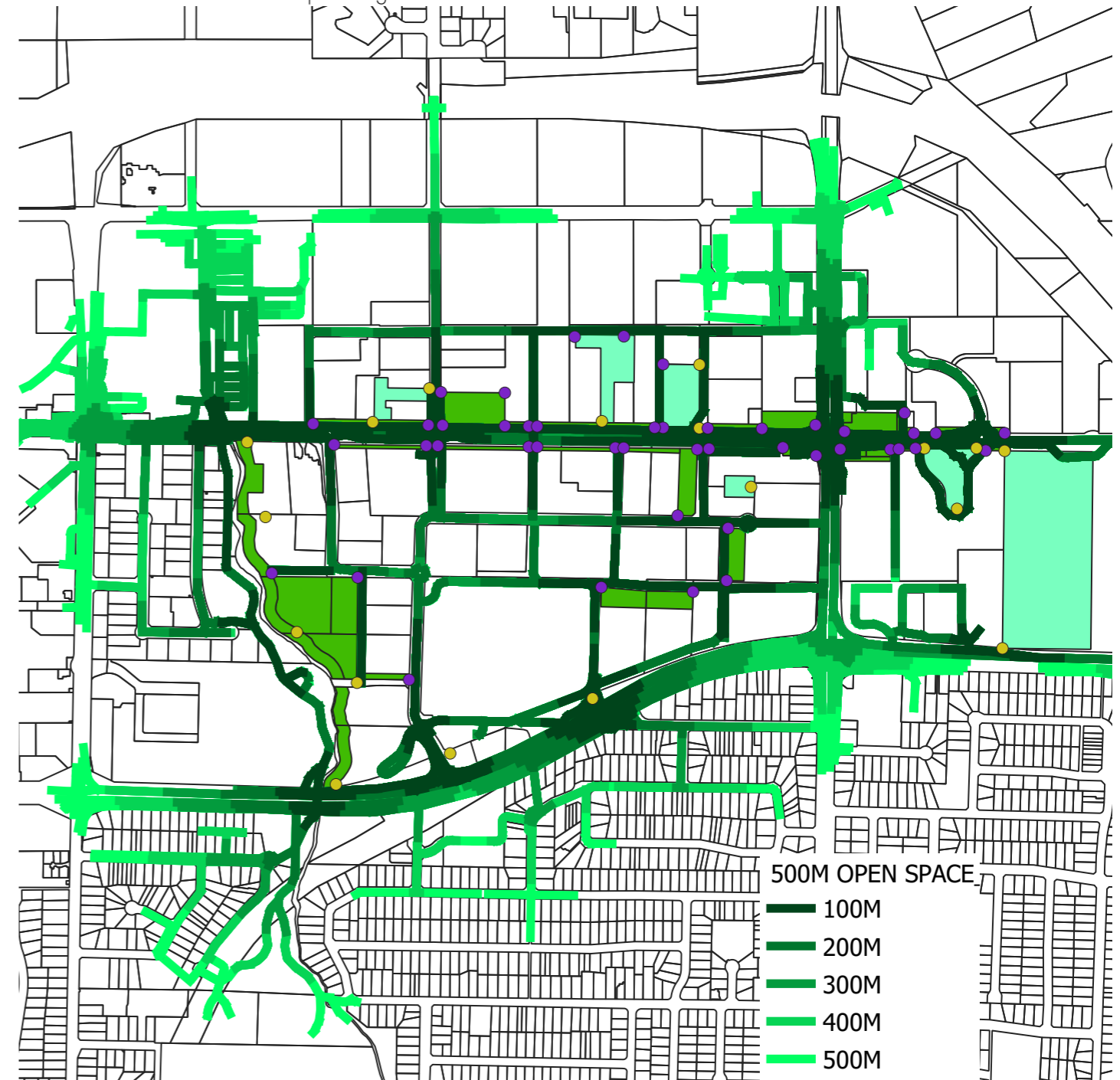
The proposed Stage 1 Structure Plan has been analysed to demonstrate the impact of the proposed structure plan upon walkability of the neighbourhood. Finer grain network allows for increased walkability generally throughout the neighbourhoods.

Public Open Space is analysed to demonstrate the catchment and accessibility of each park space and show the impact of the new open spaces for the benefit of the whole Stage 1 Precinct.

Public transport assessment is split into Bus and Metro as each mode of travel has a different catchment reach. The individual diagrams to demonstrate the increased walkability for each.

## Walkability: Public Open Spaces

More open space, more suited to local needs, closer and more accessible for more people. The provision and introduction of new open spaces provides increased access to open spaces across the Stage 1 precinct, plus has reach beyond the neighbourhood boundaries in all directions. Waterloo Road is evident as a major linking corridor.



Walkability to Public Open Spaces

### Walkability: Public Transport - Bus

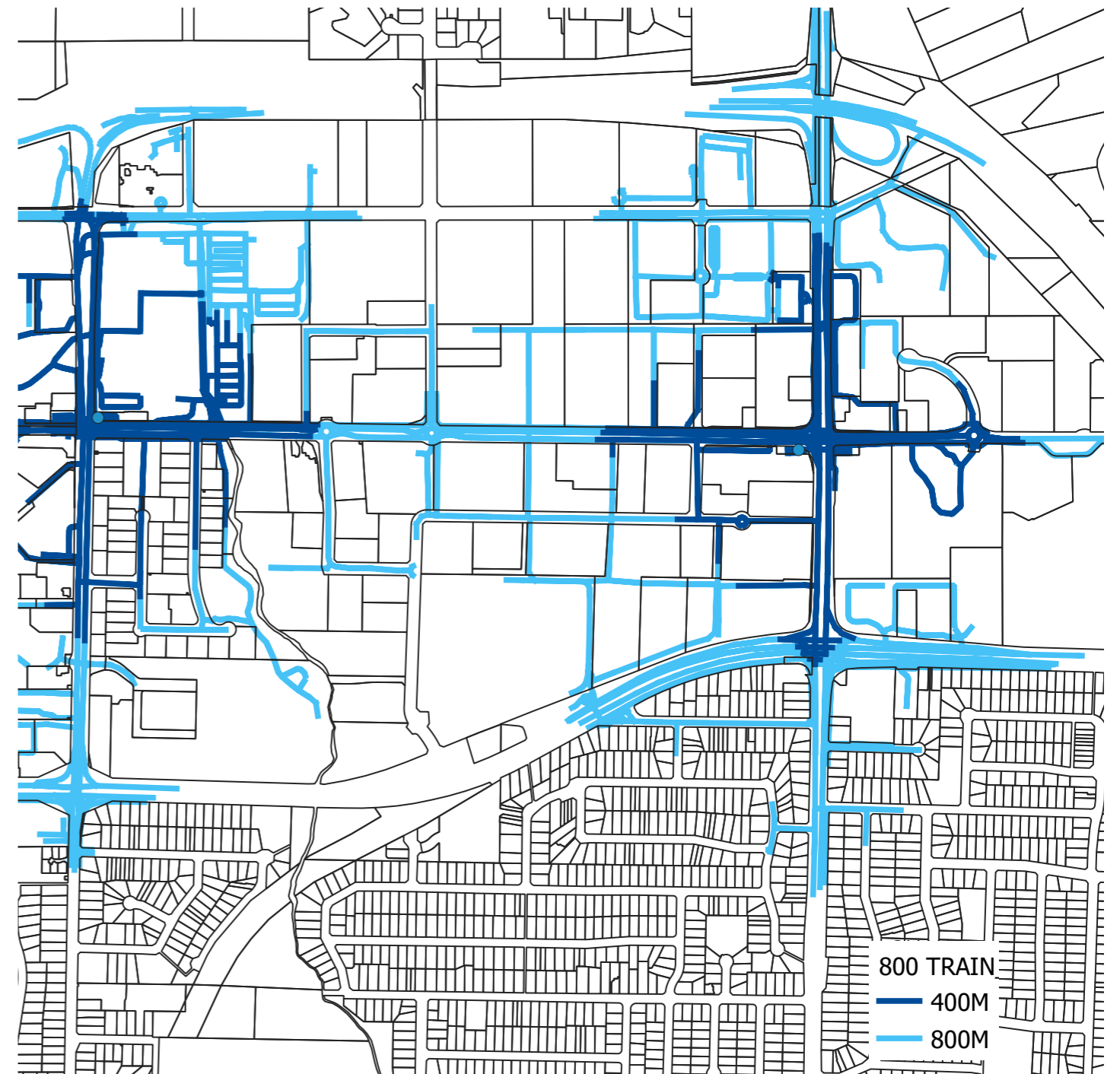
A catchment of 200m is demonstrated as a reasonable walking catchment to bus stops within the precincts. Waterloo Road is evident as a major linking corridor. Notable that a portion of Waragal Birrung is not well catered for using the 200m walking distance, this area achieves a 400m walking distance where applied to the north and south.



Walkability to Bus Stops

### Walkability: Public Transport- Metro

Metro transit hubs to east and west are easily within reach of the majority of the neighbourhood in all directions. Waterloo Road evident as a major linking element.



Walkability to Transport Hubs/Metro Stations

## Public Domain Lighting Strategy

Lighting strategy provides an opportunity to establish a positive, distinct and memorable night time environment. The after-dark character of these neighbourhoods is a major contributing factor to create thriving public domain streets and open spaces.

The Lighting Strategy outlines practical proposals for minimum lighting requirements for streets and spaces plus provides opportunities for creative approaches to lighting, as appropriate in each location to influence night time character and experiences across the neighbourhoods.

Provision of well-considered Public Domain lighting is one of the significant contributors to users safety experience and comfort. Further measure which contribute to Crime Prevention Through Environmental Design (CPTED), such as creating inviting socially active areas, an environment which is maintained and cared for, support feeling of safety, along with well illuminated spaces.

Connection to Country opportunities exist to reflect Country within the night time environment, including Woven Way representation, such as reflection of topography, highlighting creek edges, play a way finding role, integration of stories and contribute to educational opportunities throughout the streets and parks.

The lighting strategy also provides for areas where darkness and lower levels of lighting is appropriate, these are largely where ecological impacts and minimising contribution to light pollution is required.

Parks, gathering areas and civic spaces can have more specific lighting approaches where the lighting designs can highlight alternative aspects of the spaces, providing memorable night time experiences and locally distinct moments:

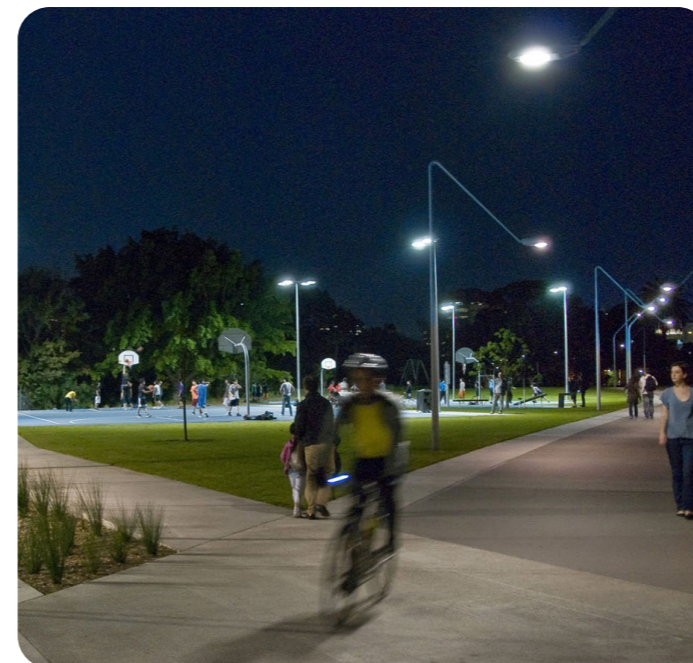
- **Waterloo Rd Linear Park** A focus on provision of inviting and safe pedestrian and cyclist environment to where the linear park supports Waterloo Road as a movement corridor and connections to public transport.
- **Civic/ Station Precinct Parks** Clearly defined and inviting through routes, access to transport entry points and waiting areas. Inclusions of feature lighting/ art elements to supplement general public domain lighting
- **Urban, Community and Residential Parks** Through routes, share paths entry points to facilities and social areas intended for evening use. Inclusion of feature lighting to complement the parks character. Opportunities exist in these park spaces for a more vibrant and bold approach where appropriate
- **Woven Way Parks and Streets** Emphasis can be suggested to highlight hidden features and alternative evening resting spaces. Option for street spaces to be included in the lighting designs to heighten presence and profile of these spaces.
- **Buffer parkland spaces** Lighting will be focused on access/ footpaths to be well lit routes through buffer spaces.



Bondi Mall, Waverley Council



Bio Swale Seating, Cullen Meves

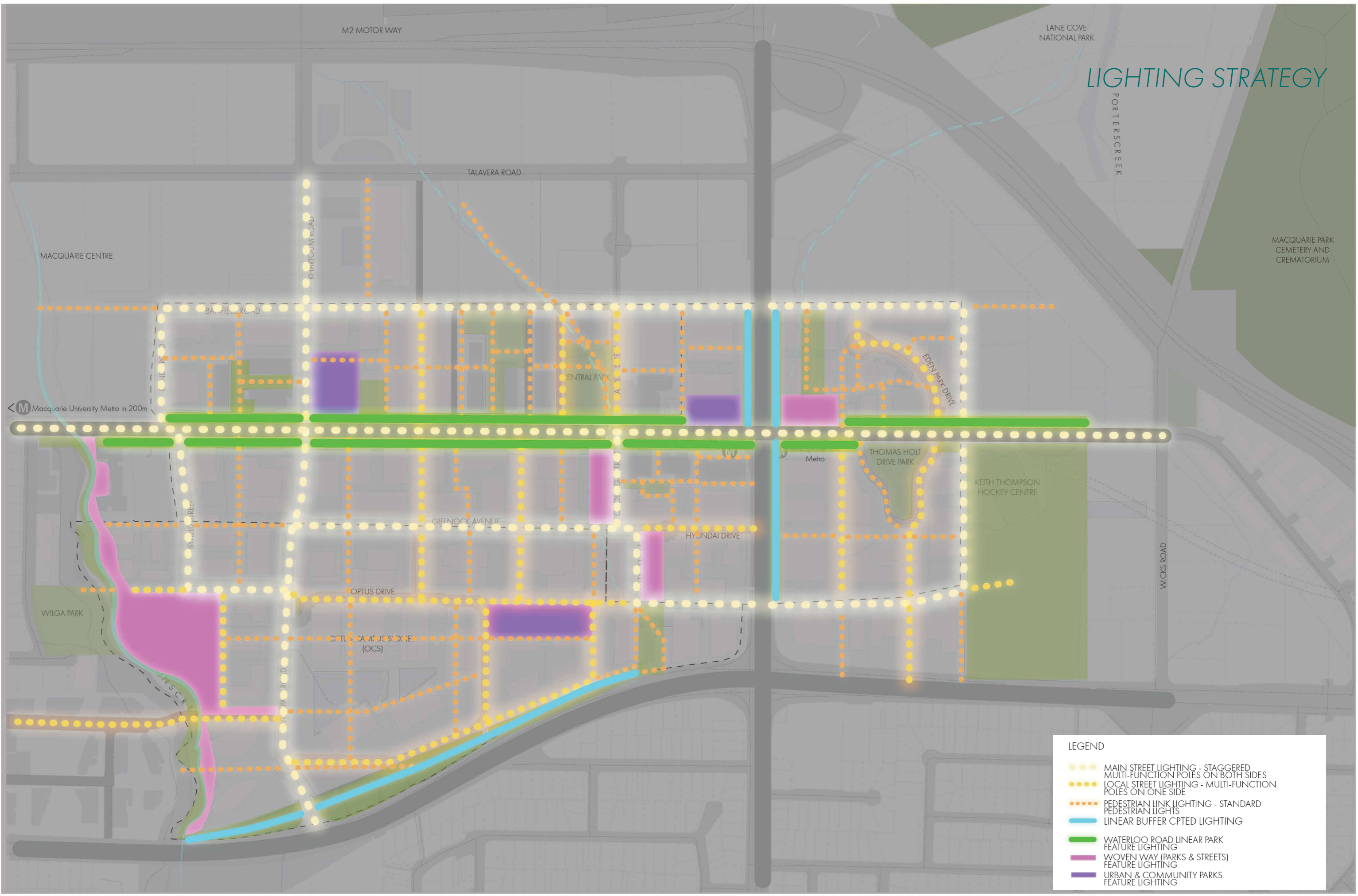


Prince Alfred Park, Neeson Murcutt Neille



Taylor's Square, Sydney

# LIGHTING STRATEGY



LEGEND	
	MAIN STREET LIGHTING - STAGGERED MULTI-FUNCTION POLES ON BOTH SIDES
	LOCAL STREET LIGHTING - MULTI-FUNCTION POLES ON ONE SIDE
	PEDESTRIAN LINK LIGHTING - STANDARD PEDESTRIAN LIGHTS
	LINEAR BUFFER CPTD LIGHTING
	WATERLOO ROAD LINEAR PARK FEATURE LIGHTING
	WOVEN WAY (PARKS & STREETS) FEATURE LIGHTING
	URBAN & COMMUNITY PARKS FEATURE LIGHTING

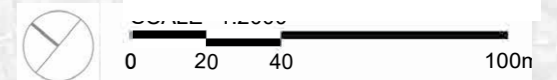






- Legend**
- Existing tree cover
  - Proposed trees
  - Separated bi-directional Cycleway
  - Footpath/shared Path
  - Macquarie Park Metro Station
  - Bus stop
  - 1 Waragal Biringung Parklands
  - 2 Waterloo Road Park
  - 3 Industrial Creek Woven Way
  - 4 Station Plazas
  - 5 Drake Avenue Park
  - 6 Waterloo Road Linear Park Corridor

**Macquarie Park Innovation Precinct Stage 1 - Public Domain Landscape Master Plan**



## Butbut (Heart) Waterloo Park

### Neighbourhood Public Domain Landscape Master Plan

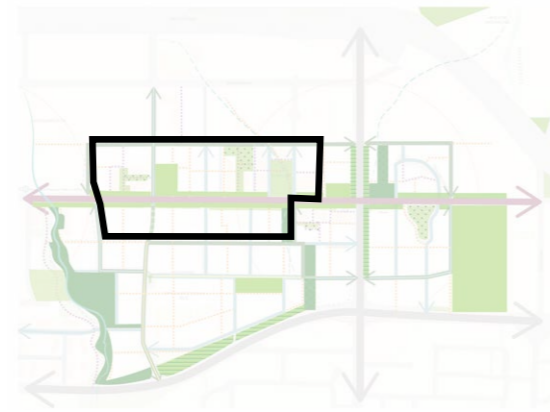
Butbut “will be the main central neighbourhood and open space for Macquarie Park. The Neighbourhood connects Herring Road to Macquarie Park Station, cutting across the ridges between Industrial Creek and Shrimptons Creek Riparian Zone. It has significant potential to form a new ‘green’ focus for Macquarie Park, a connecting link, and a welcoming space of arrival to Wallumattagal Country.” Macquarie Park Innovation Precinct

Strategic Master Plan, 2022

This neighbourhood is civic/ corporate in nature.

With a focus being Waterloo Road as a central green boulevard, this is a key movement corridor for pedestrians, cyclists and public transport. Forming an important core for Macquarie Park CDB, this is an iconic green statement of a streetscape, with central median, and linear parks to either side of the corridor providing expanded well vegetated public domain space.

Nature of the public domain and open spaces are civic and urban, these are active city spaces. With a diverse range of users expected in this neighbourhood, the civic public domain open spaces will support the activities generated by the buildings around them. From corporate/ commercial employment to local residents and visitors.



### Key Public Domain aspects are

#### Revitalized Waterloo Road – as a key connection linking the precinct with a focus on

- Linear parks to north and south of the road corridor
- Increased tree canopy and vegetation layer,
- Improved pedestrian amenity
- Creation of a separated cycle path
- Increased pedestrian crossing points
- Improved bus interchanges

#### Increased open space – three new open spaces/ urban parks.

- Catherine Hamlin Park – civic park space
- Waterloo Road Park – civic park space
- Industrial Creek Woven Way North - Woven Way linear park

#### Finer grain well vegetated street layout - Introduction of new streets bring porosity and comfort

- Improved walkability
- Shorter distances to destinations, transport interchanges.
- Better access to open spaces
- Increased tree canopy cover to all streets
- Increased WSUD street functions

#### Improved Cycleway network - addition of infrastructure

- New North-South separated cycle path to Lyonpark road, connected to Khartoum Road
- Increased shared path provision throughout



Spring Street New York Pocket park, Source: Elizabeth Felicella



Westpac Park (Aspect), photo source: TRACT






KEY PLACE 2 - WATERLOO ROAD PARK

CATHERINE  
HAMLIN PARK

KEY PLACE 3 - INDUSTRIAL CREEK WOVEN WAY NORTH

Legend

-  Existing Tree Cover
-  Proposed Trees
-  Separated Bi-directional Cycleway
-  Footpath/Shared Path
-  B Bus Stop

-  1 Waterloo Road Linear Park Corridor
-  2 Signalised Crossing Points
-  3 New pedestrian and cycle link between Giffnock Avenue and Waterloo Road - New link in N/S cycle network. Vehicle access provided via shared pedestrian environment.



SCALE 1:2000



## Waragal Birrung (Evening Star) - Shrimptons Quarter

### Neighbourhood Public Domain Landscape Master Plan

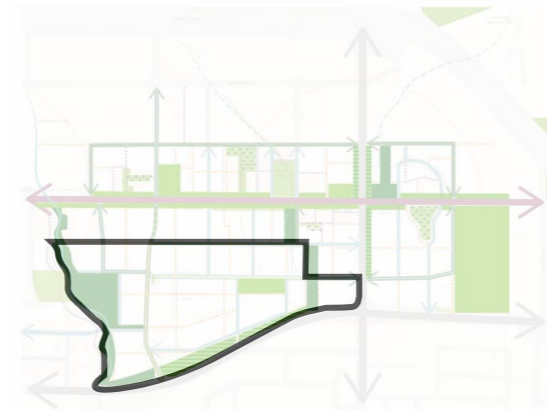
“Waragal Birrung meaning Evening star (or Bangali meaning weaving) is the neighbourhood that sits between two creeks: the northern boundary of Shrimptons Creek and the southern boundary of Industrial Creek. The neighbourhood is characterised by its landscaped edges and proximity to stations and the Waterloo-Badu Nawi open spaces.” Macquarie Park Innovation

Precinct Strategic Master Plan, 2022

Shrimptons Creek is a signature element for this neighbourhood, with the opportunity to celebrate the this physical water body with revitalisation, improved access and more connections across.

Connection to nature inspires the neighbourhood character and directs open space locations and materiality. The creation of a large scale recreational parkland which is focused on Shrimptons Creek Riparian Zone is a central aspect of this neighbourhood.

The neighbourhood has a residential/ community aspect. Public domain will retain a focus towards a connection with nature experience, the character of which will transition at boundaries north and east towards more civic materials in response to business and corporate users.



### Key Public Domain aspects are

#### Revitalised Shrimptons Creek Riparian Zone – improvements to the existing creek

- Riparian vegetation regeneration
- Creek waterway improvements
- Increased pedestrian and cycle crossing points
- Introduction of shared path

#### Increased open spaces –two new open spaces

- Waragal Birrung Parklands – Woven Ways recreational park
- Douglass Park – urban park

#### Finer grain well vegetated street layout. Introduction of new streets bring porosity and comfort

- Improved walkability
- Shorter distances to destinations.
- Better access to open spaces
- Increased tree canopy cover to all streets
- Increased WSUD street functions

#### Improved Cycleway network - addition of infrastructure

- New East-West separated cycle path along Optus Drive and new connections to Douglas Avenue, as an alternative to Waterloo Road.
- Increased shared path provision throughout



Hanlon Park Masterplan Source: TRACT



Bougainvillea Gdns Brookwater Source: TRACT



KEY PLACE 1 - Waragal Birrung Parklands

KEY PLACE 5 - Drake Avenue Park

OPTUS CAMPUS SYDNEY (OCS)

**Legend**

-  Existing Tree Cover
-  Proposed Trees
-  Separated Bi-directional Cycleway
-  Footpath/Shared Path
-  Bus Stop
-  Proposed cycleway connect to existing shared use path
-  Signalised crossing points
-  Proposed pedestrian/cycle bridge across creek
-  Existing pedestrian/cycle bridge

SCALE 1:2000

0 20 40 100m

## Gari Nawi (Salt-water Canoe) - Macquarie Living Station

### Neighbourhood Public Domain Landscape Master Plan

“Gari Nawi, meaning the salt-water canoe, is the Southern end of Nawi or Waterloo Corridor. The Macquarie Living Station is characterised by high levels of metro connectivity and access to strategic bus routes. The neighbourhood has capacity to develop into a denser and more integrated place to support economic vitality.” Macquarie Park Innovation Precinct

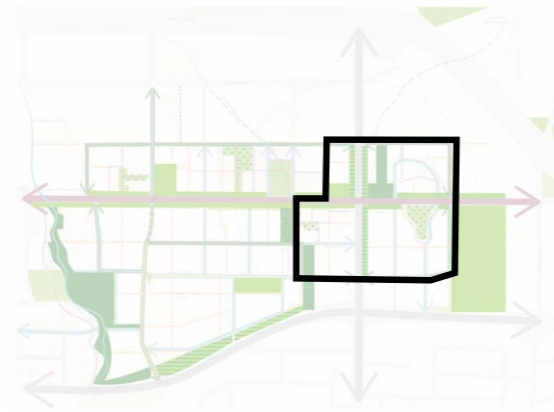
Strategic Master Plan, 2022

The precinct has transit interchange activity at its core, this neighbourhood celebrates the energy and character of the Metro Station precinct plazas. Open space at the intersection of Waterloo Road and Lane Cove Road creates opportunity for a noticeable gateway statement.

Public domain will be generally civic in nature, supporting the pedestrian, cyclist and public transport activity generated by this transport interchange space. Beyond these open spaces will reflect the mix of urban and residential users, with more passive quieter parks and streetscapes.

A landscape buffer to Lane Cove Road brings the benefit of retention of existing trees, retaining a level change to the busy road, providing alternative pedestrian pathways and increased vegetation. Within this buffer a local vantage point is retained with views north along to Lane Cove National Park acknowledged with formalised resting space.

Woven Way lines are gently knitted into the north east Metro Precinct open space. Materiality is emphasised and reflected, indicating local presence of hidden Porters Creek. Use of hard and soft surfaces, colours, textures and vegetation will indicate and subtly reveal an ephemeral waterway.



### Key Public Domain aspects are

#### Station Precinct Gateway- acknowledge Metro station arrival moment

- Station precincts at core of neighbourhood, with new Metro station access points
- Improved pedestrian crossing point at Lane Cove Road

#### Lane Cove Road - landscape buffer parks

- Secure space for tree planting and alternative pedestrian movement to Lane Cove Road environment
- Provides interface buffer for properties along this boundary

#### Increased open spaces – four new open spaces

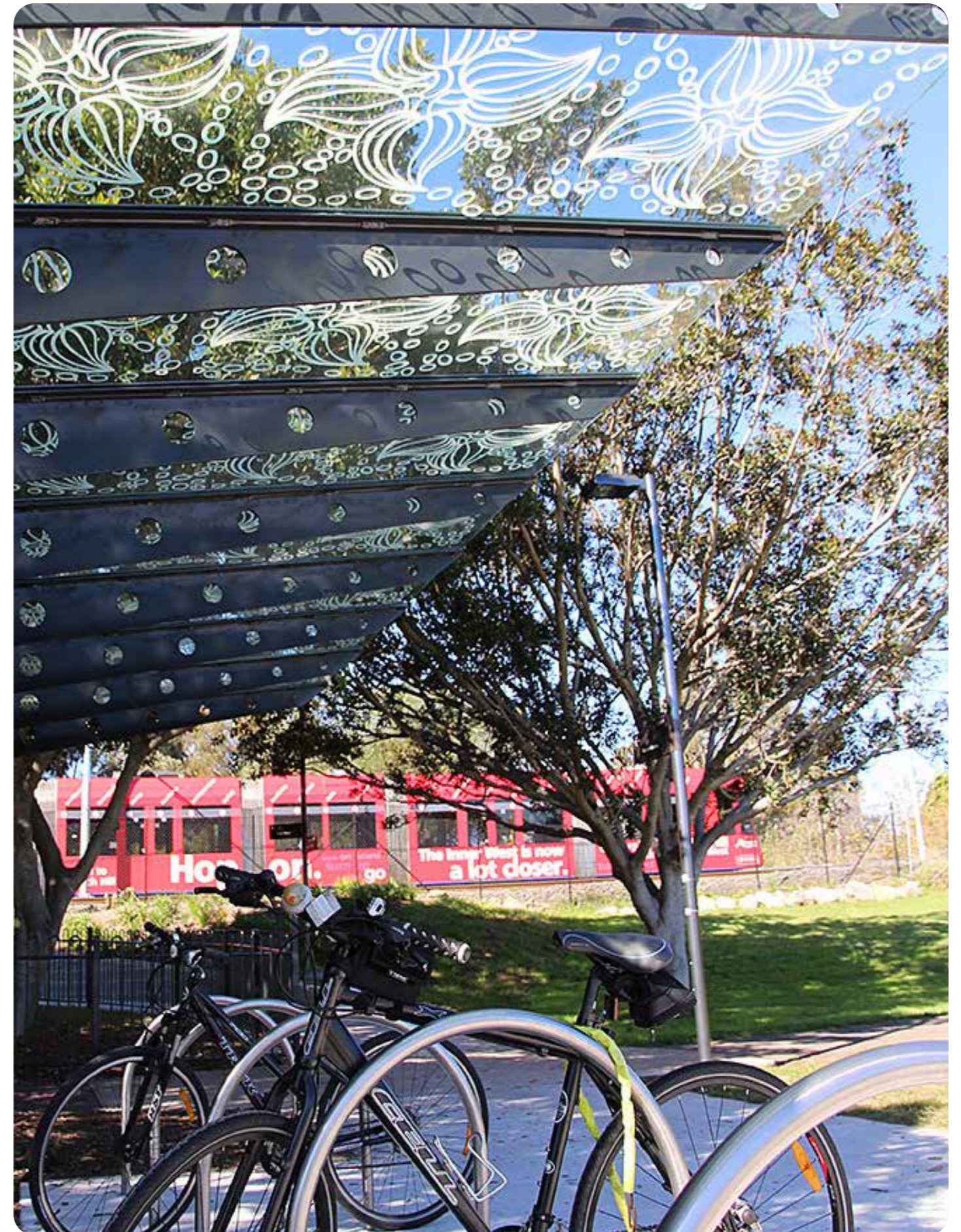
- Industrial Creek Woven Way South – Woven Way linear park
- Station Plaza Northeast – Woven Way transport interchange park
- Station Plaza Northwest – Civic transport interchange plaza
- Station Plaza Southeast – Civic transport interchange plaza

#### Finer grain well vegetated street layout -Introduction of new streets bring porosity and comfort

- Improved walkability throughout
- Shorter distances to destinations, transport interchanges.
- Better access to open spaces
- Increased tree canopy cover to all streets
- Increase WSUD street functions

#### Improved Cycleway network - addition of infrastructure

- New East-West separated cycle path as an alternative to Waterloo Road
- New pedestrian/ cycle bridge over Lane Cove Road
- Increased shared path provision throughout

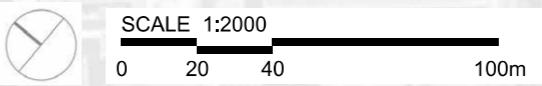


Bike Shelter : “The Source” by Bronwyn Bancroft



KEY PLACE 4 - STATION PLAZAS EAST

- Legend
- Existing Tree Cover
  - Proposed Trees
  - Separated Bi-directional Cycleway
  - Footpath/Shared Path
  - Bus Stop
  - 1 Industrial Creek Woven Way South
  - 2 Signalled crossing points
  - 3 Proposed pedestrian/cycle bridge
  - 4 Future pedestrian/cycle bridge



### Key Place Plan 1 - Waragal Birrung Parklands



#### Waragal Birrung Parklands

This creek side park space provides a welcome large open space which will cater to the immediate community as well as have broader neighbourhood reach as a destination parkland. Provides areas for active and passive recreation, formal play areas, multi-sports spaces, informal picnicking and rest. The park has the opportunity to cater for larger events with pavilion an open lawns arranged to suit casual and official uses.

The engagement with Knowledge Holders identified waterways as culturally significant and so Shrimpton's Creek has been included as a Keep Site. The park will have Country and Woven Way themes throughout, with some dedicated Woven Way gathering areas having more focused architectural expression to the spaces and elements.

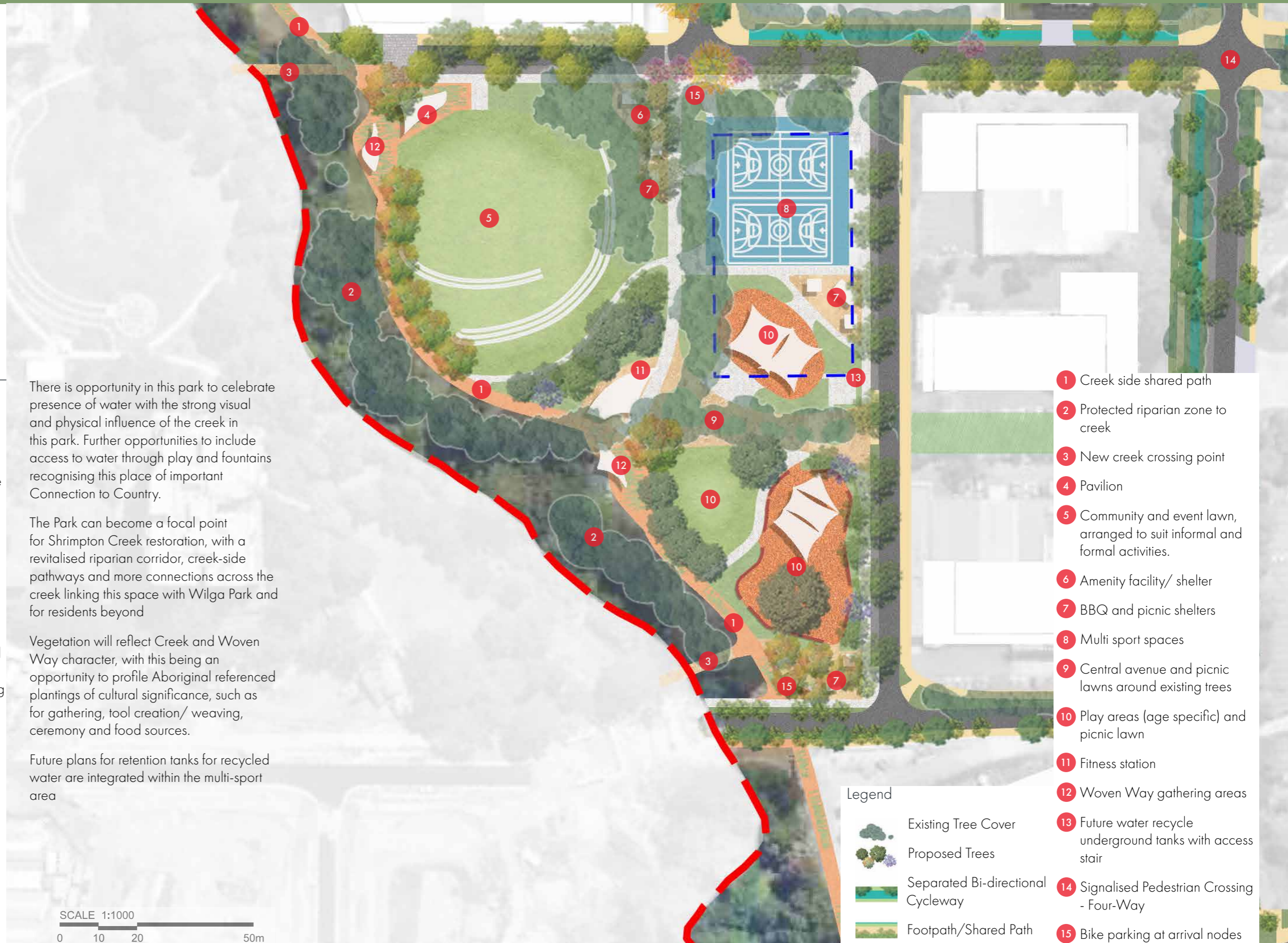
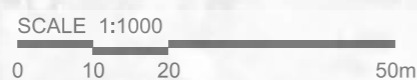
The Park can become a focal point for Shrimpton Creek restoration, with a revitalised riparian corridor, creek-side pathways and more connections across the creek linking this space with Wilga Park and for residents beyond.

There is opportunity in this park to celebrate presence of water with the strong visual and physical influence of the creek in this park. Further opportunities to include access to water through play and fountains recognising this place of important Connection to Country.

The Park can become a focal point for Shrimpton Creek restoration, with a revitalised riparian corridor, creek-side pathways and more connections across the creek linking this space with Wilga Park and for residents beyond

Vegetation will reflect Creek and Woven Way character, with this being an opportunity to profile Aboriginal referenced plantings of cultural significance, such as for gathering, tool creation/ weaving, ceremony and food sources.

Future plans for retention tanks for recycled water are integrated within the multi-sport area



- 1 Creek side shared path
- 2 Protected riparian zone to creek
- 3 New creek crossing point
- 4 Pavilion
- 5 Community and event lawn, arranged to suit informal and formal activities.
- 6 Amenity facility/ shelter
- 7 BBQ and picnic shelters
- 8 Multi sport spaces
- 9 Central avenue and picnic lawns around existing trees
- 10 Play areas (age specific) and picnic lawn
- 11 Fitness station
- 12 Woven Way gathering areas
- 13 Future water recycle underground tanks with access stair
- 14 Signalised Pedestrian Crossing - Four-Way
- 15 Bike parking at arrival nodes

#### Legend

- Existing Tree Cover
- Proposed Trees
- Separated Bi-directional Cycleway
- Footpath/Shared Path





## Key Place Plan 2 - Waterloo Road Park



- 1 Plaza paved space
- 2 Architectural kiosk
- 3 Feature shelter
- 4 Grove of trees, opportunity for cafe spill out
- 5 Pedestrian access spine
- 6 Bus interchange space
- 7 Existing significant trees
- 8 Central walkway
- 9 Urban lawns
- 10 Building frontage circulation spaces
- 11 Signalised Pedestrian Crossing - Four-Way
- 12 Bike parking at arrival nodes

**Legend**

- Existing Tree Cover
- Proposed Trees
- Separated Bi-directional Cycleway
- Footpath/Shared Path
- Bus Stop

## Waterloo Road Park

An urban plaza set within the heart of this precinct and a companion to Catherine Hamlin Park. The location on a natural plateau in the precinct landforms provides an opportunity to create a generous open space and has the benefit of embracing the existing trees within the urban park space.

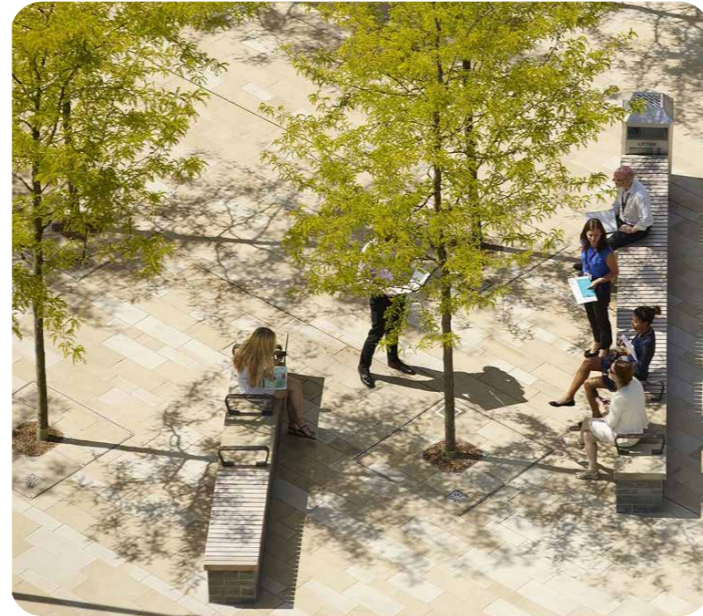
The opportunity for rest on the plateau and gathering/ meeting spaces being an important Connection to Country in this civic space. As this park is a high point in the landscape and views being identified culturally significant it has been included as a Keep Site, with views being maintained where possible .

The plaza experience expands to encompass Waterloo Road linear park areas and accommodating multiple pedestrian connections through the space, and provides easy access to the adjacent bus stop.

Proximity to signalised crossing points at Waterloo Road further extends accessibility.

The plaza will have a strong relationship with the surrounding buildings, providing an appropriately energised space, one which can become a destination within this neighbourhood, and have a distinct character.

Groves of new trees set around geometric lawns complement the existing established canopy trees. Centrally located kiosk/ shelters provides a visual and activity focus for the space.



Sovereign Square Source: Re-form



Westpac Place, Source: ASPECT







Darling Square Source: ASPECT

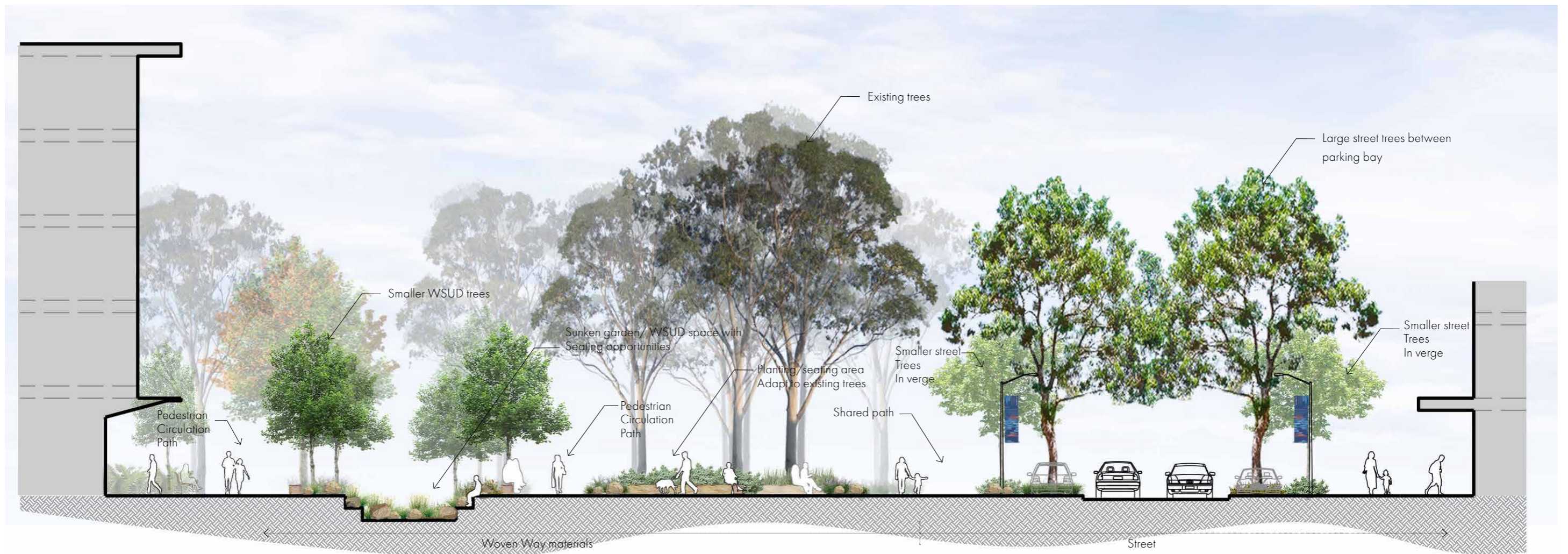
# Key Place Plan 3 - Industrial Creek Woven Way North



## Legend

-  Existing Tree Cover
-  Proposed Trees
-  Separated Bi-directional Cycleway
-  Footpath/Shared Path

- 1** Linear set down space, formed edges provide informal gathering spots under trees.
- 2** Mix of planting, boulders and stone inserts.
- 3** Variety of seating options, formal and informal arrangements. Primary overland flow detention areas
- 4** Hard scape spaces, focus on porous materials. Secondary overland flow areas
- 5** Park levels manipulated around existing trees
- 6** Informal decking crossing points
- 7** Woven way materials spill out onto streetscape
- 8** Signalised Pedestrian Crossing - Four-Way
- 9** Signalised Pedestrian Crossing - Two-Way
- 10** Bike parking at arrival nodes



## Proposed Section

### Industrial Creek Woven Way

A liner park with rich Woven Way character. Opportunity is taken to re-awaken a hidden creek line as well as offer a creative and practical approach to embrace localised storm-water and overland flow.

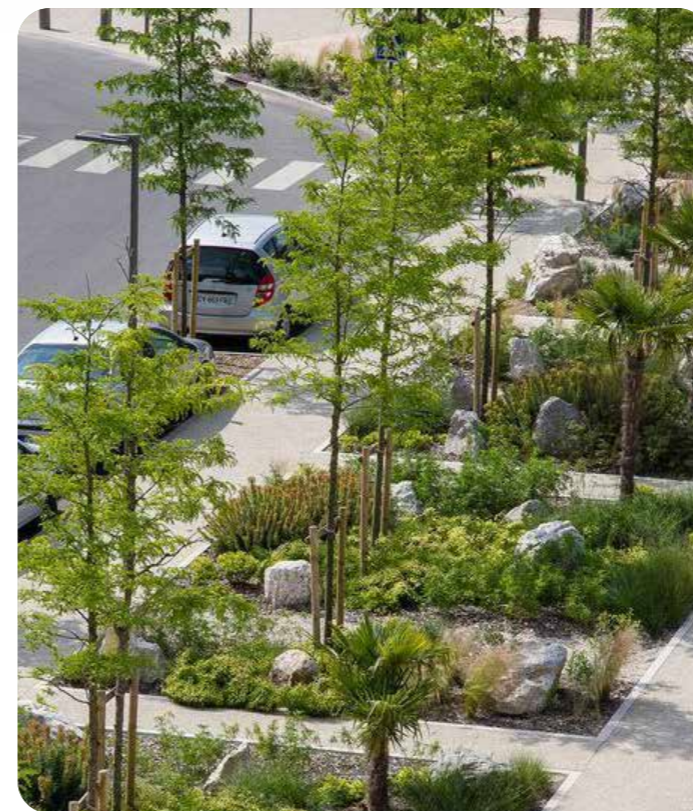
Organic shapes direct and influence the layout, small but distinct level changes create a sequence of shady spaces to stop, rest and stay. Existing trees are retained and protected within this new park space, their presence providing immediate benefit for shade, comfort and character.

Opportunity to slow down water and have a visual and physical representation of water in this park space being an important Connection to Country aspect. Plantings in the park will feature endemic species from vegetation communities of the area which will reinforce a sense of place, enhance ecosystem resilience and increase biodiversity.

The distinct pallet of Woven Way materials will extend to the immediate streetscape spaces, being a bold and visual contrast within the streetscape experience and a unifying element across the precincts along the Woven Way lines.

Vegetation will reflect WSUD park and Woven Way character, with this being an opportunity to profile Aboriginal referenced plantings which focus on weaving and references to water.

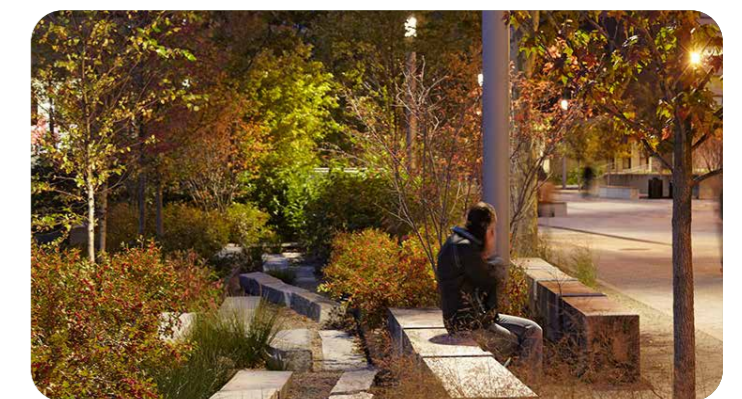
The linear park functional use to manage larger volumes of storm-water can be arranged as a primary and secondary attenuation, where gently sunken park spaces reveal their practical dual role when needed.



Tanner Springs Park, Green Works



Fairfax Hunters View, Andrea Cochran Landscape Architecture



Bio Swale Seating, Cullen Meves

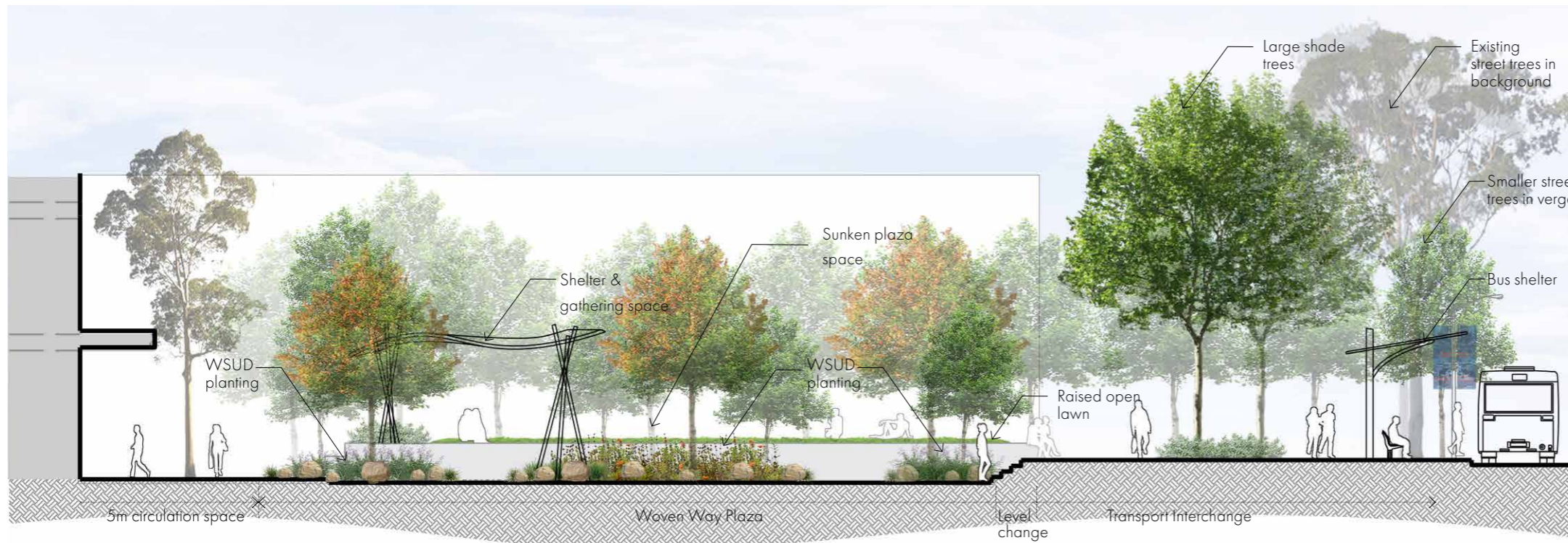
# Key Place Plan 4 - Station Plazas East



- Legend**
- Existing Tree Cover
  - Proposed Trees
  - Separated Bi-directional Cycleway
  - Footpath/Shared Path
  - Bus Stop
- 1** Architectural Woven Way Kiosk/ potential Metro entrance.
  - 2** Woven Way plaza with set down space, opportunity to reflect woven way/ ephemeral creek edges
  - 3** Indicative porous hard scape materials/ woven way materials reflected in park detailing and spill out onto streetscape
  - 4** Woven Way gathering space/ feature shelter
  - 5** Informal tree layout, groupings in a clustered arrangement
  - 6** Raised park lawns
  - 7** Pedestrian circulation
  - 8** Pedestrian/ cycleway shared path through station precinct area
  - 9** Station precinct formal plaza space
  - 10** Signalised Pedestrian Crossing - Four-Way
  - 11** Bike parking at arrival nodes



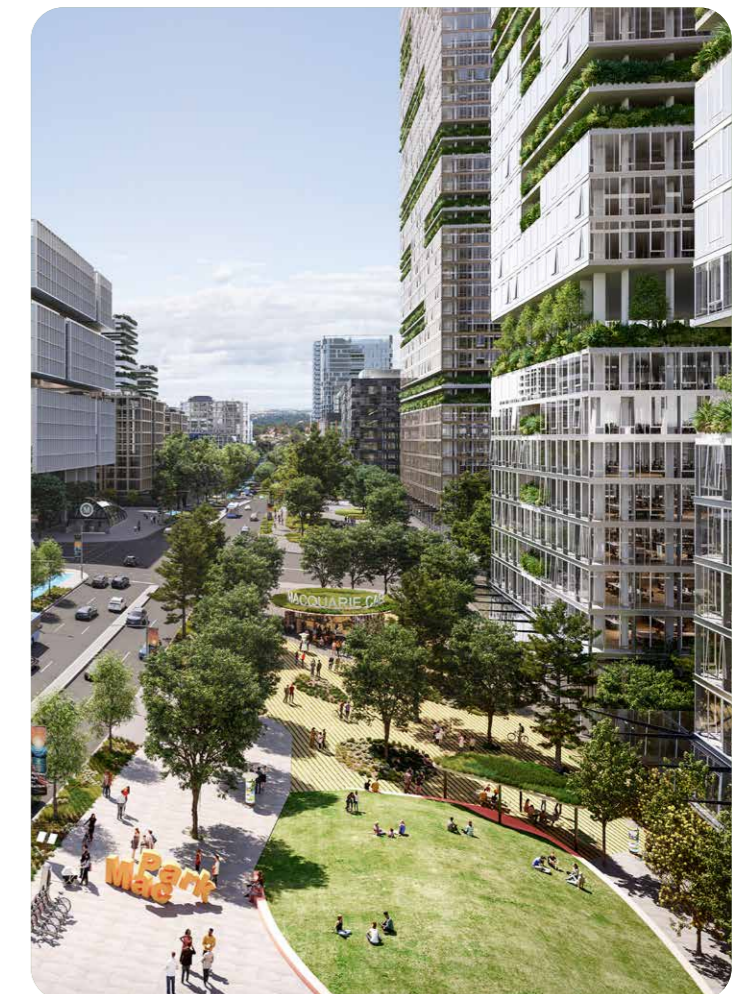
SCALE 1:500  
0 5 10 25m



**Proposed Section**



The Canopy, Andy Roberts



**Station Plazas East**

**Gari Nawi Station Precincts/ Woven Way**

Station Plaza Northeast: At the heart of Gari Nawi and being a significant arrival area to the precinct there is an opportunity to recognise the Woven Way with visual and spatial references to reveal and reflect the hidden creek.

This Woven Way being represented as a ephemeral creek, subtle level changes can inform and reveal the creek line, with an element of discovery embedded into the precinct plaza spaces. The sense of water shared visually and physically in this park space being an important Connection to Country and opportunity to reflect hidden stories and knowledge

The use of organic shapes to influence the open space layout with Woven Way material pallet, and vegetation mixes will heighten the experience of the space. Endemic species plantings from this area will be included to enhance park character, and support ecosystem resilience and biodiversity.

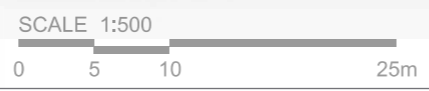
Vegetation will reflect WSUD park and Woven Way character, with this being an opportunity to profile Aboriginal referenced plantings which focus on more subtle references to water and opportunities for resting and gathering activities.

Station Plaza Southeast: Opportunity is taken to extend the open space to establish a station precinct space in association with Waterloo Road liner park.

A more geometric and formally arranged space than the Station Plaza Northeast, this will provide appropriate scaled public domain response with generous plaza spaces for commuters and local users.

Ample pedestrian links to surrounding precincts are provided in all directions, including pathways North/ South through landscape buffer spaces along Lane Cove Road corridor.

# Key Place Plan 5 - Drake Avenue Park



### Legend

- Existing Tree Cover
- Proposed Trees
- Separated Bi-directional Cycleway
- Footpath/Shared Path

- 1** Community lawn and garden space
- 2** Local play area and shelter
- 3** Garden beds and trees planting at interface to streetscape
- 4** Shady groves of trees with rest areas
- 5** Local orientation and meeting points
- 6** Community gathering/ shelters and picnics
- 7** Central avenue with seating opportunities manipulated around existing trees
- 8** Bike parking at arrival nodes





Clara Apartments: Verticali

## Drake Avenue Park

A local park with residential scale and character.

Garden beds shape lawn spaces and provide a separation to streetscape. Shady groves of trees grouped to provide numerous smaller scaled spaces within the park to absorb a variety of activities. Endemic species plantings, from vegetation communities of the area, will be included in the park which will reinforce a sense of place, enhance ecosystem resilience and increase biodiversity.

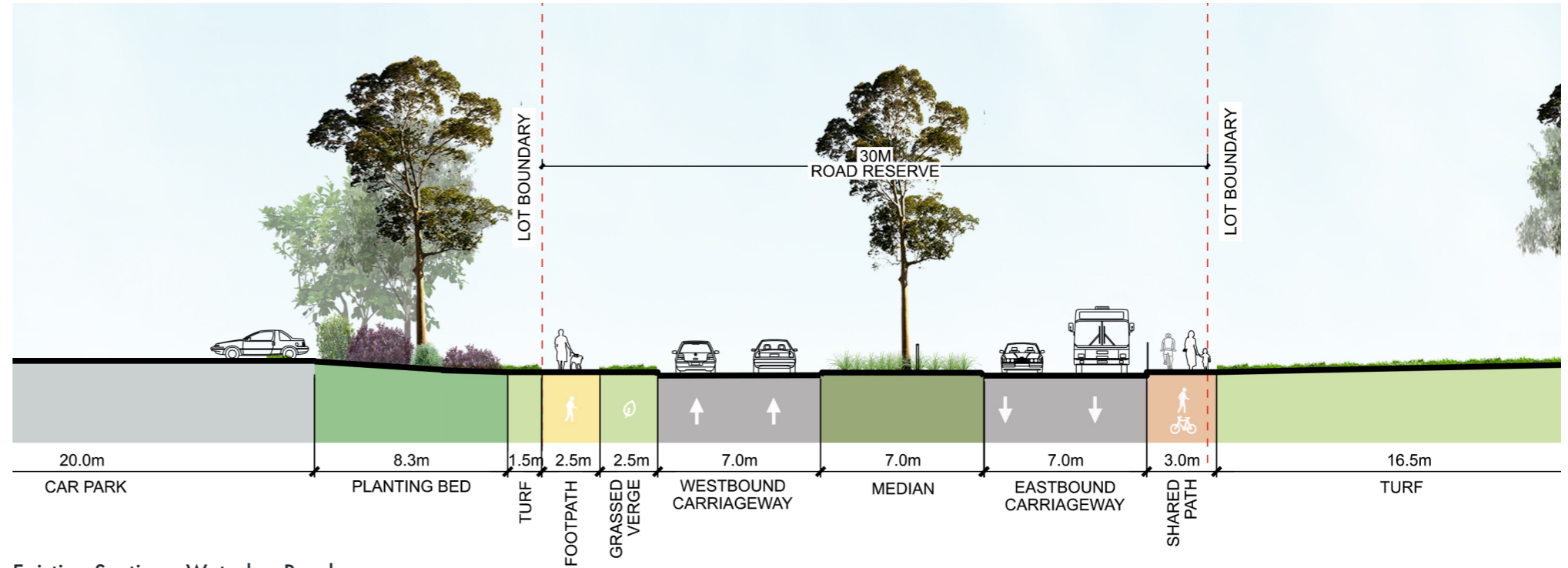
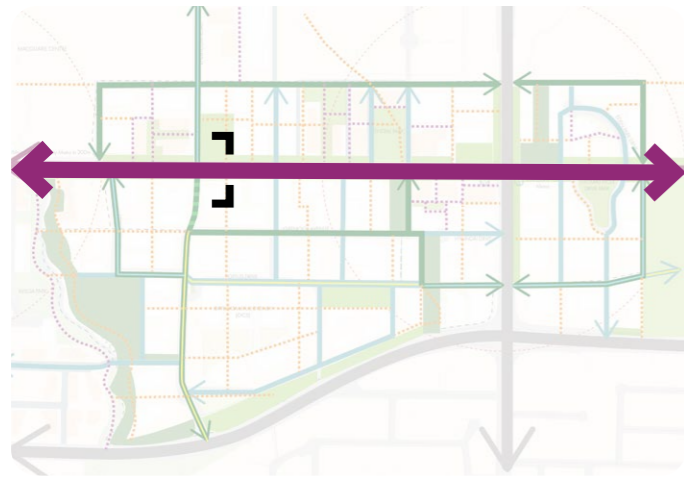
As a residential focused park, there is provision for local play area, BBQ shelters, and shade structures. This park will provide flexible spaces for formal, informal, active and passive community uses.

The opportunity for gathering spaces and nurturing of community relationships in this park space being an important Connection to Country element in this residential focused park.

Existing trees are embraced within the park layout for immediate benefit to park and streetscape character and comfort.



### Typical Section 1 - 30m Waterloo Road Green Corridor



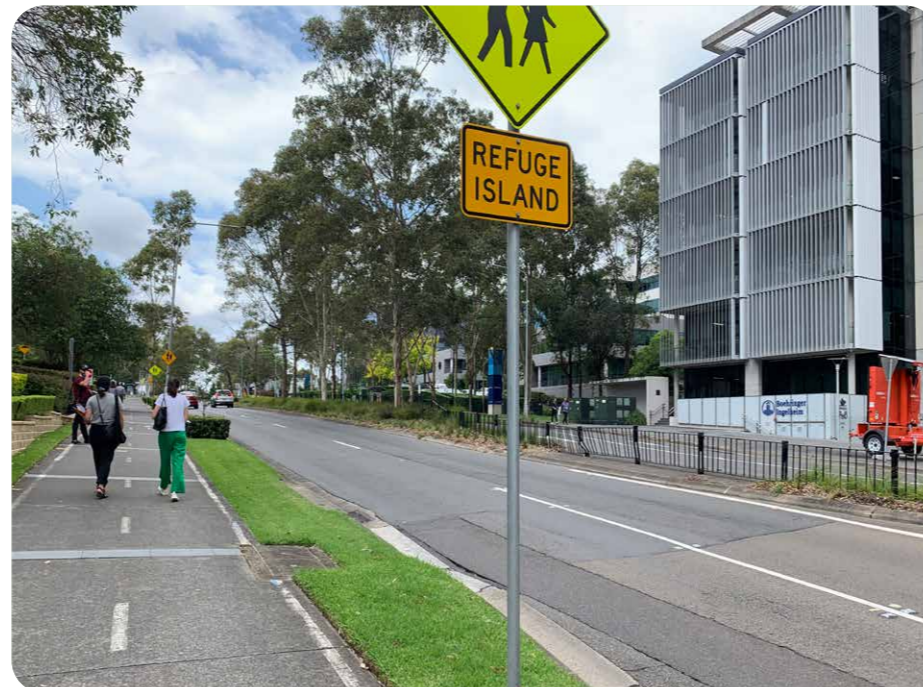
Existing Section - Waterloo Road

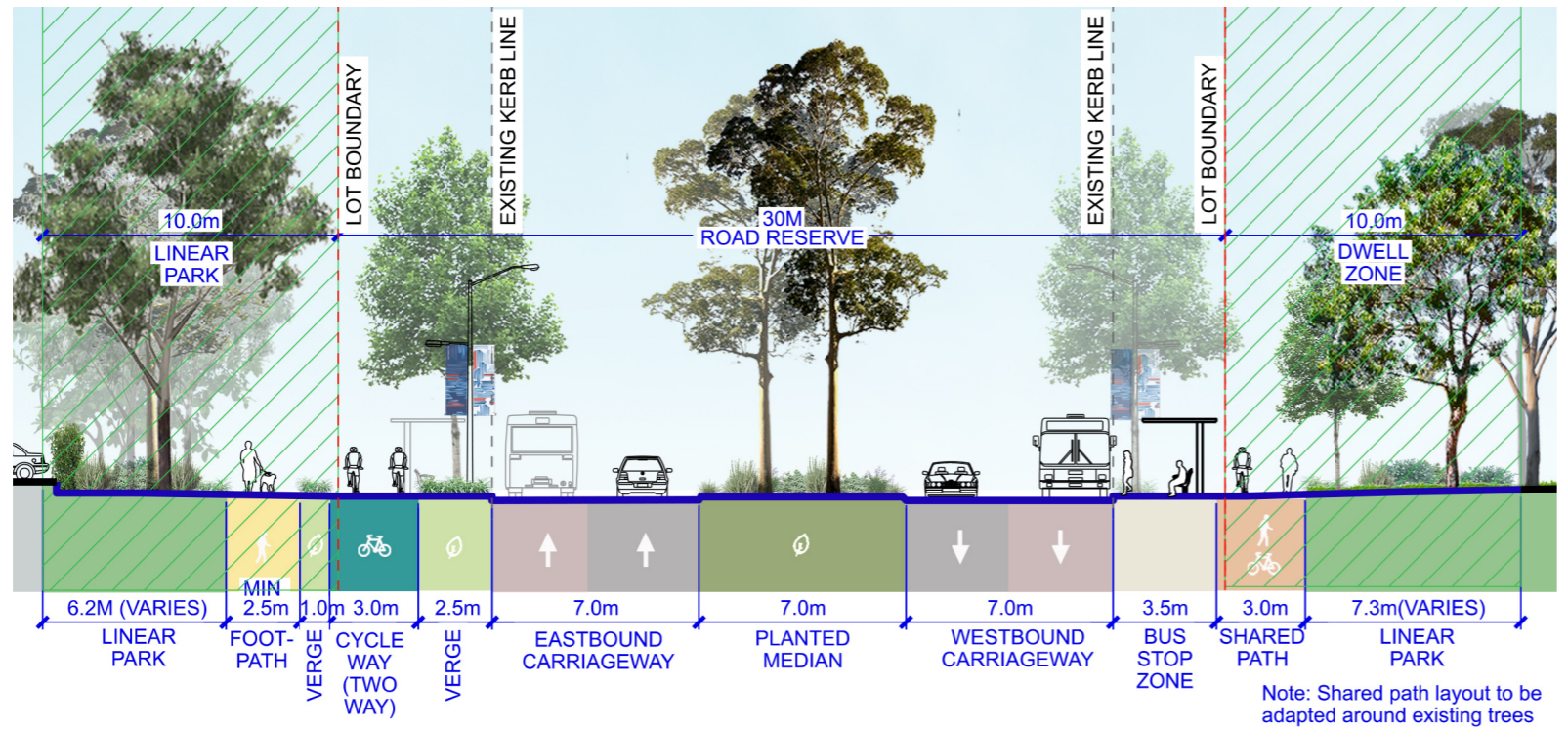
#### Existing Condition:

Waterloo Road carries a high volume of traffic with limited crossing opportunities, and pedestrians observed crossing outside of these points. There is a distinct planted central median and numerous existing mature trees providing significant amenity and visual contribution for the corridor. There are limited street trees within the public domain, many of the existing trees currently being in privately owned areas.

#### Proposed Corridor:

- In keeping with the Waterloo Road Linear Park Strategy, this corridor is proposed as a green spine through the city centre providing passive recreational opportunities and publicly accessible open space.
- Linear park proposals to integrate retention of significant existing trees.
- New street tree planting in public realm to offer amenity to pedestrians and a buffer from vehicle space.
- New 2 way cycle path proposed on southern side of road corridor, with separate pedestrian footpath to minimise conflict between cyclists and pedestrians.
- Northern verge becomes a pedestrian space, with opportunities maximised to integrate with linear park spaces.

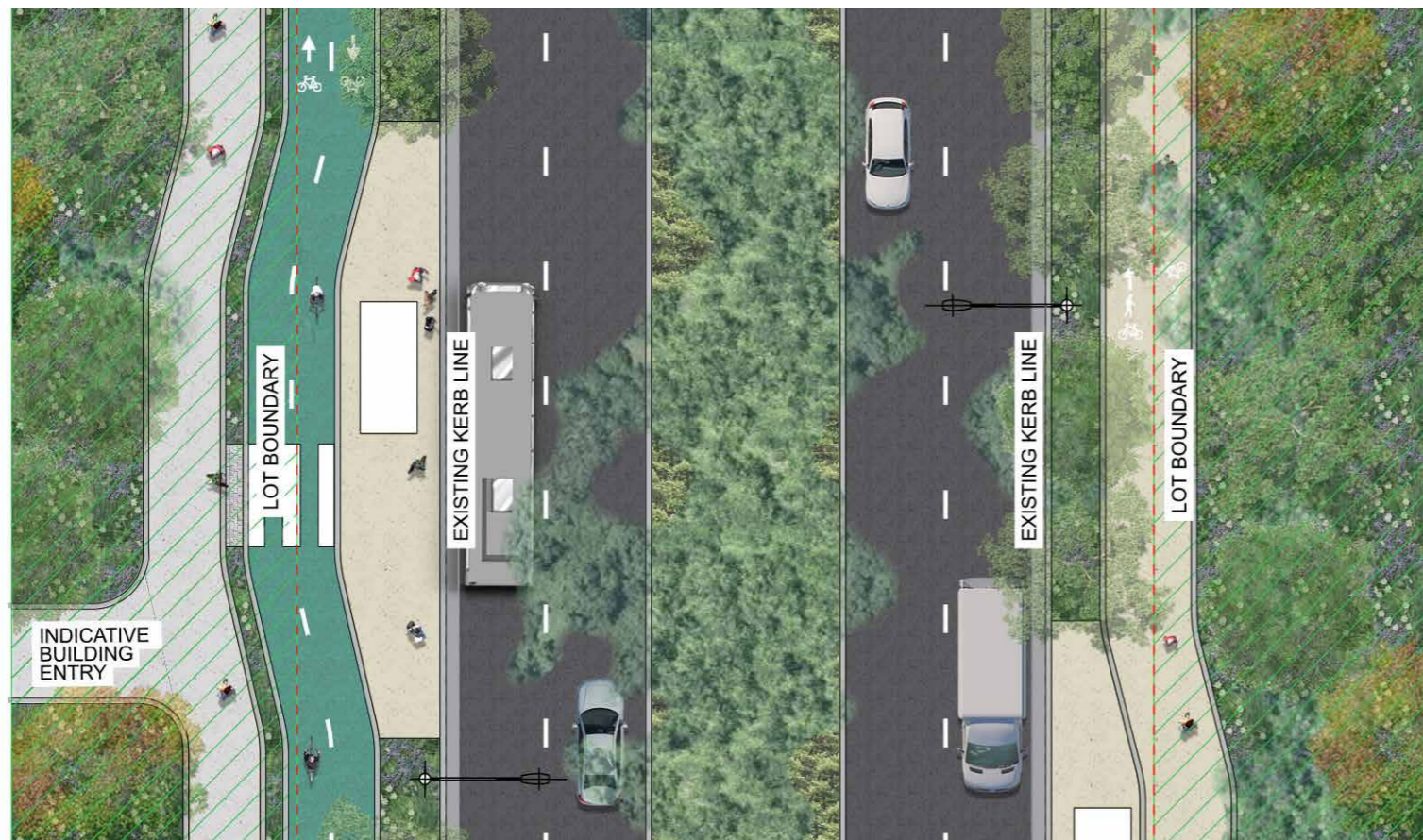




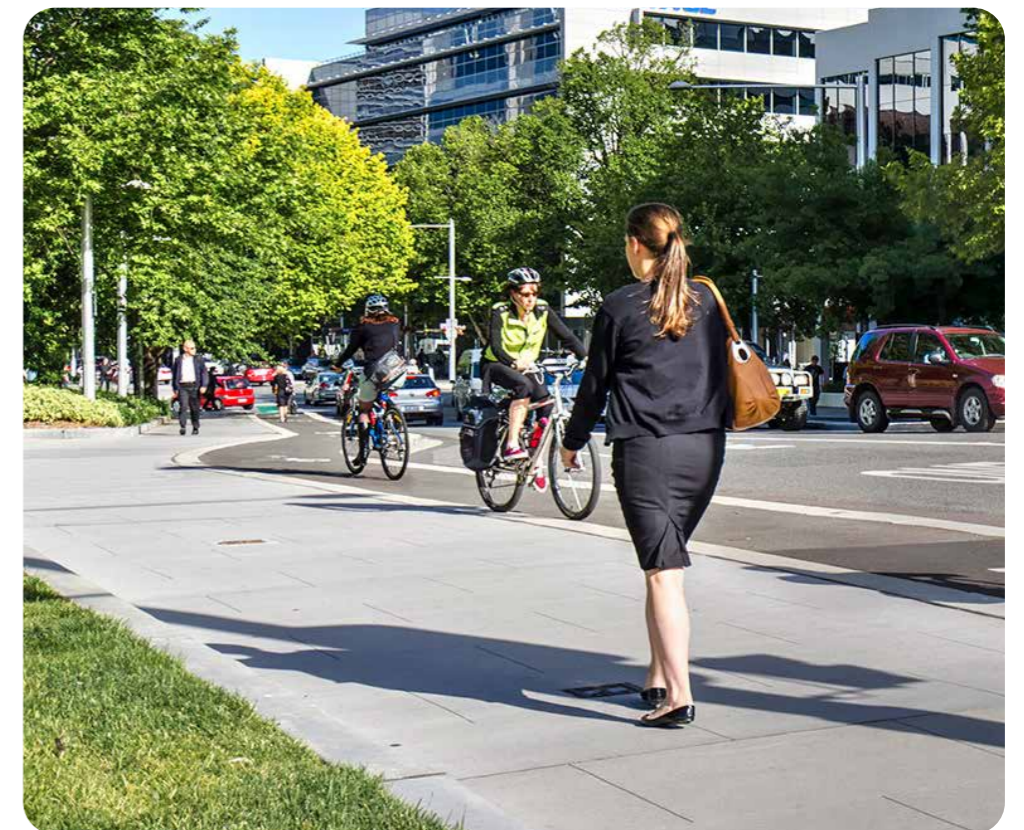
Typical Proposed Section - Waterloo Road



Marcus Clarke Cycleway, Tract



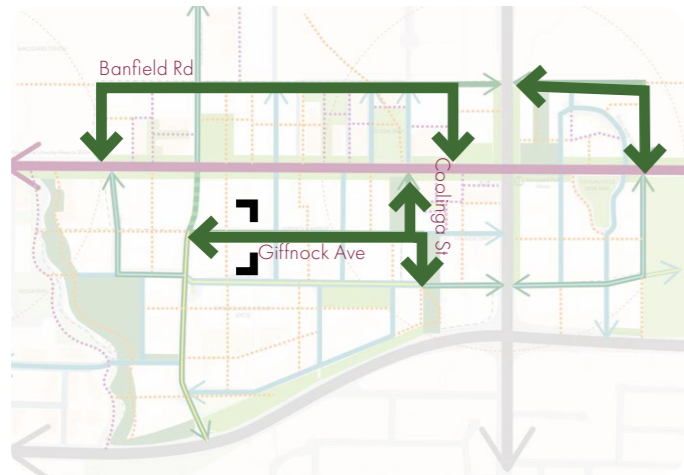
Typical Proposed Plan - Waterloo Road



Bunda Street Cycleways, Tract

Subject to Traffic Advice

## Typical Section 2 - 20m Secondary Circulation Route



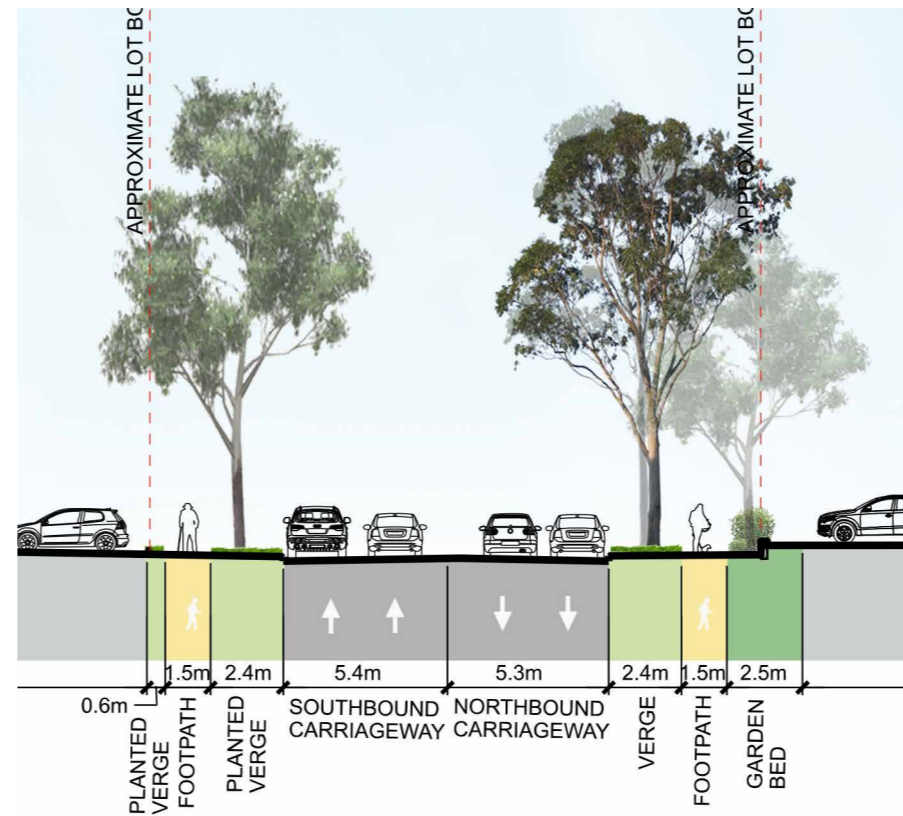
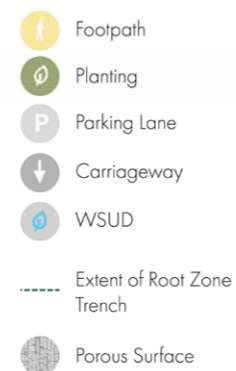
### Existing Condition:

Much of the secondary circulation routes are new proposed links, connecting existing sections of Banfield Road, Byfield St, Giffnock Ave and Coolinga St.

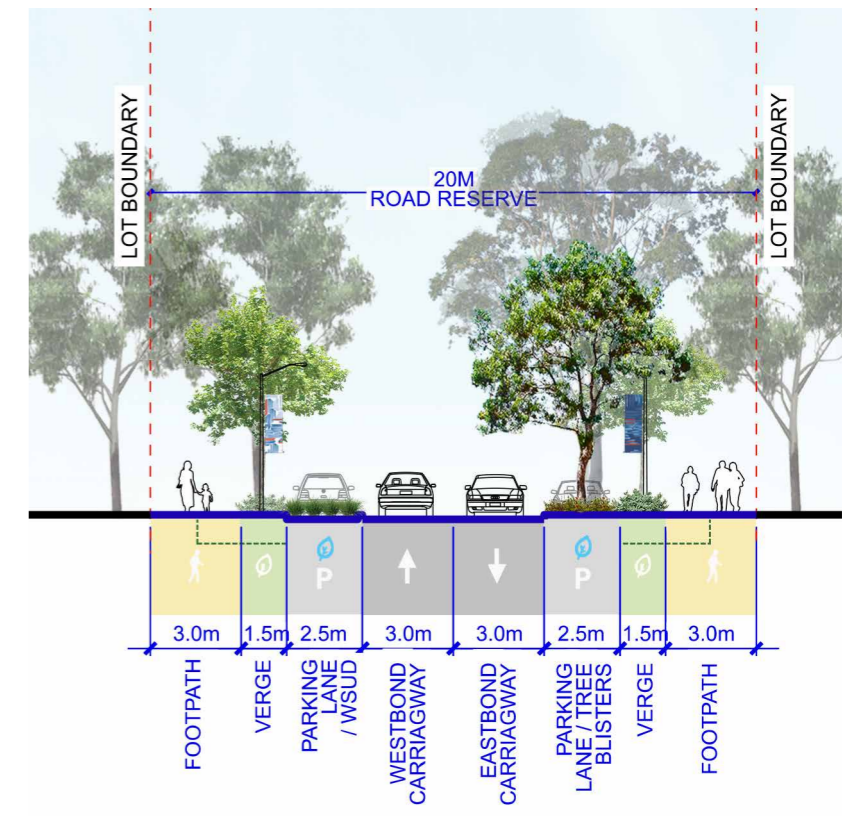
Over recent years Giffnock Avenue has had progressive improvements to supplement tree and verge planting, and widen footpath. Generally the north verge remains to be updated.

### Proposed Corridor:

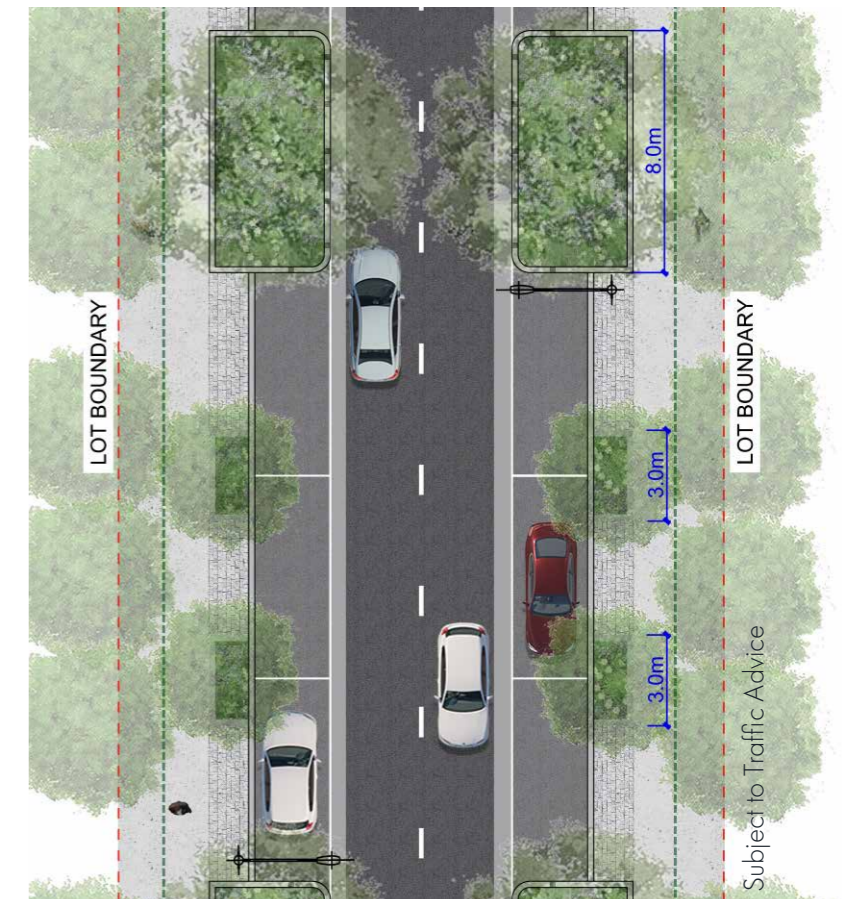
- The parking lane layout restructured to introduce deep soil zones to accommodate new large street tree planting.
- Footpaths are increased to 3m on each side to create a generous pedestrian experience and accommodate a shared cycle path.
- Water sensitive urban design features are incorporated into the verge and tree root zones such as slotted kerbs and porous surfaces.
- Upgraded paving, lighting and sign-age enhances the user experience.
- Assumption for the retention of existing trees. Proposed trees to have supportive root zone trench as required to meet minimum soil volume.



Existing Section - Giffnock Avenue

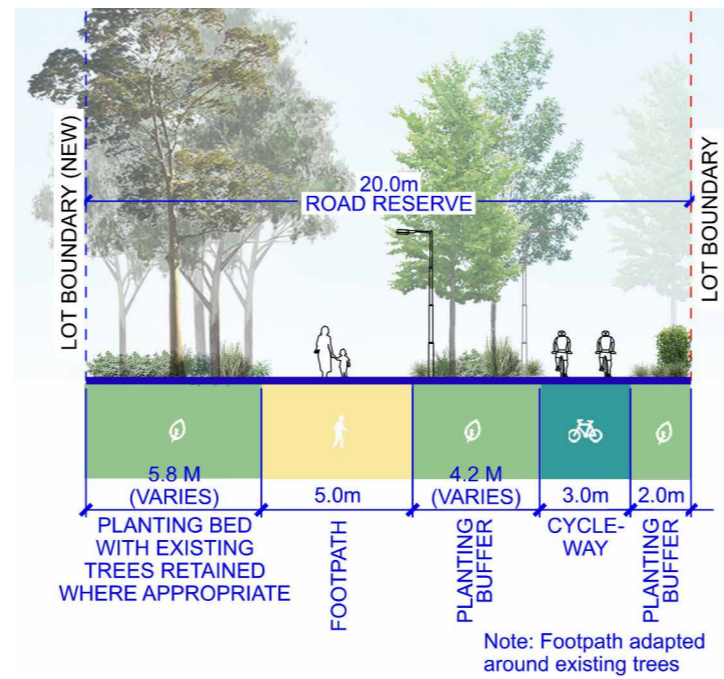


Typical Proposed Section - 20m Secondary Circulation Route



Proposed Typical Plan - 20m Secondary Circulation Route

## Typical Section 3 - 20M Green Boulevard Reserve (Accommodating Separate Cycleway)



Proposed Typical Section - 20M Green Boulevard Reserve



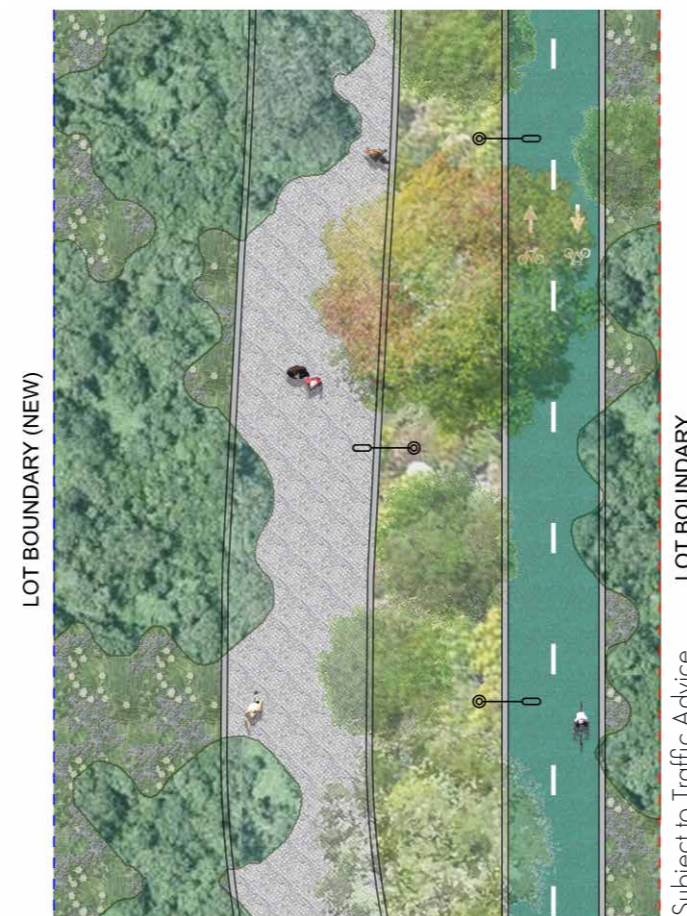
Queensboro Bridge Greenway, Queens, City of NY

This is a new proposed link between Lyonpark Road, and Khartoum Road. This is a shared pedestrian and cycle link which also provides a vehicle access to future development to the west.

### Proposed Corridor:

- The Green Boulevard Reserve is proposed as a key precinct north south active transport connection.
- Part of the wider district active transport links.
- Presenting as a pedestrian environment, a meandering pedestrian path and separated cycleway through a shady, vegetated corridor.
- Water sensitive urban design features are incorporated into the verge and tree root zones such as slotted kerbs and porous surfaces.

- Footpath
- Planting
- Separated Cycleway
- Porous Surface

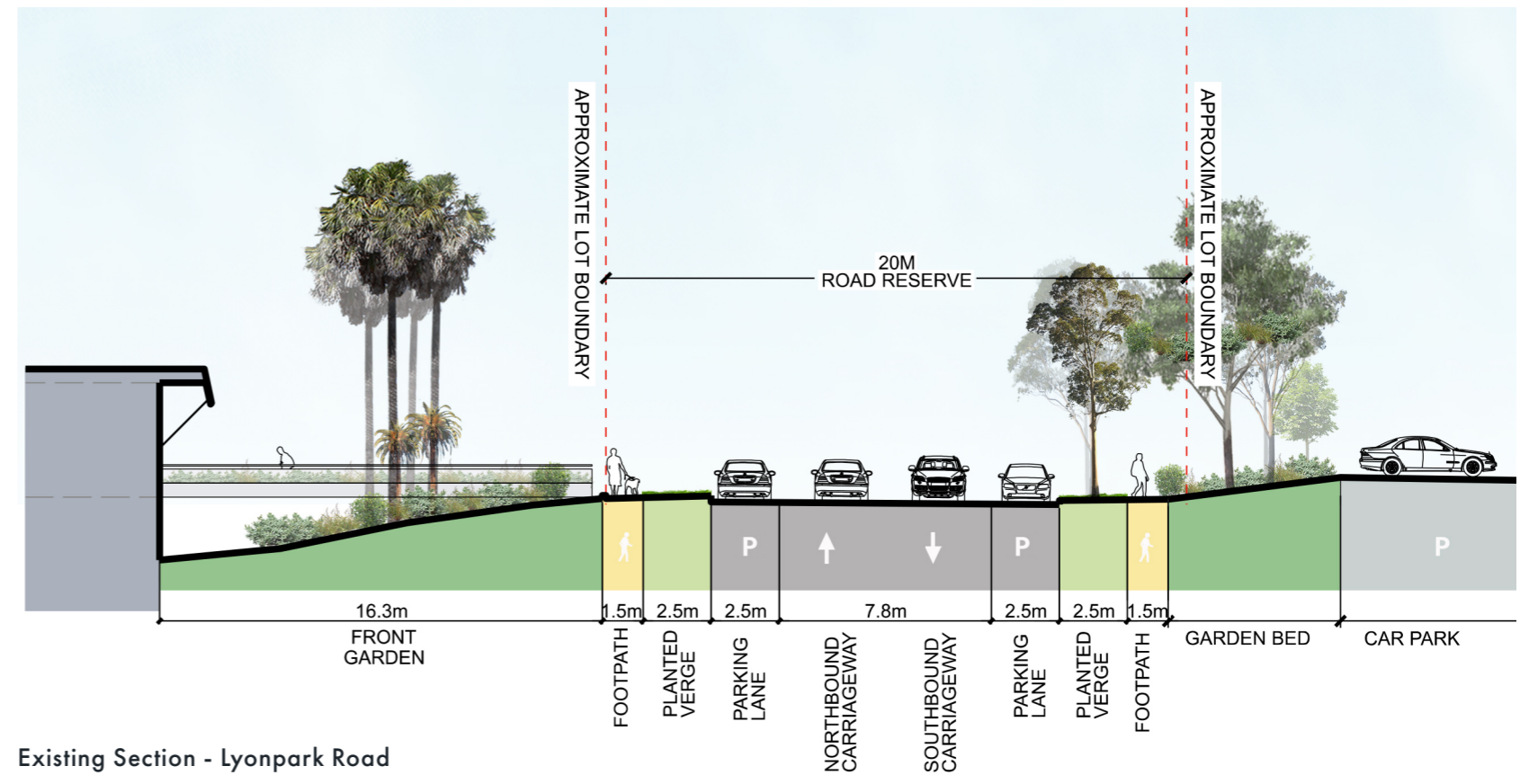
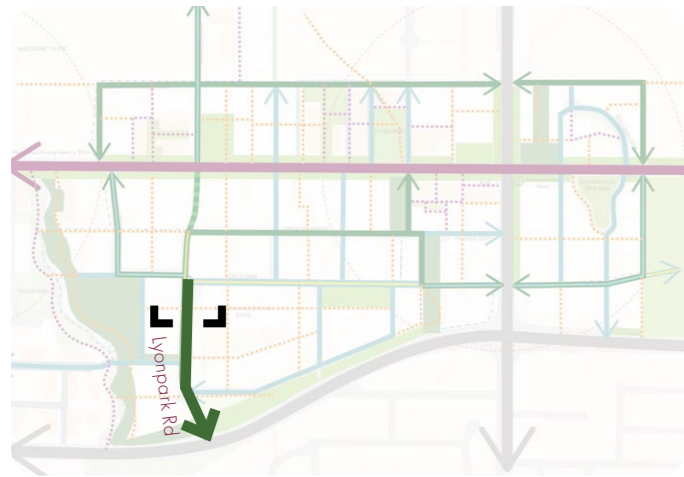


Proposed Typical Plan - 20M Green Boulevard Reserve



Minneapolis bike path, Colin Hunter

## Typical Section 4 - 25m Secondary Green Boulevard (Accommodating Separate Cycleway)



Existing Section - Lyonpark Road

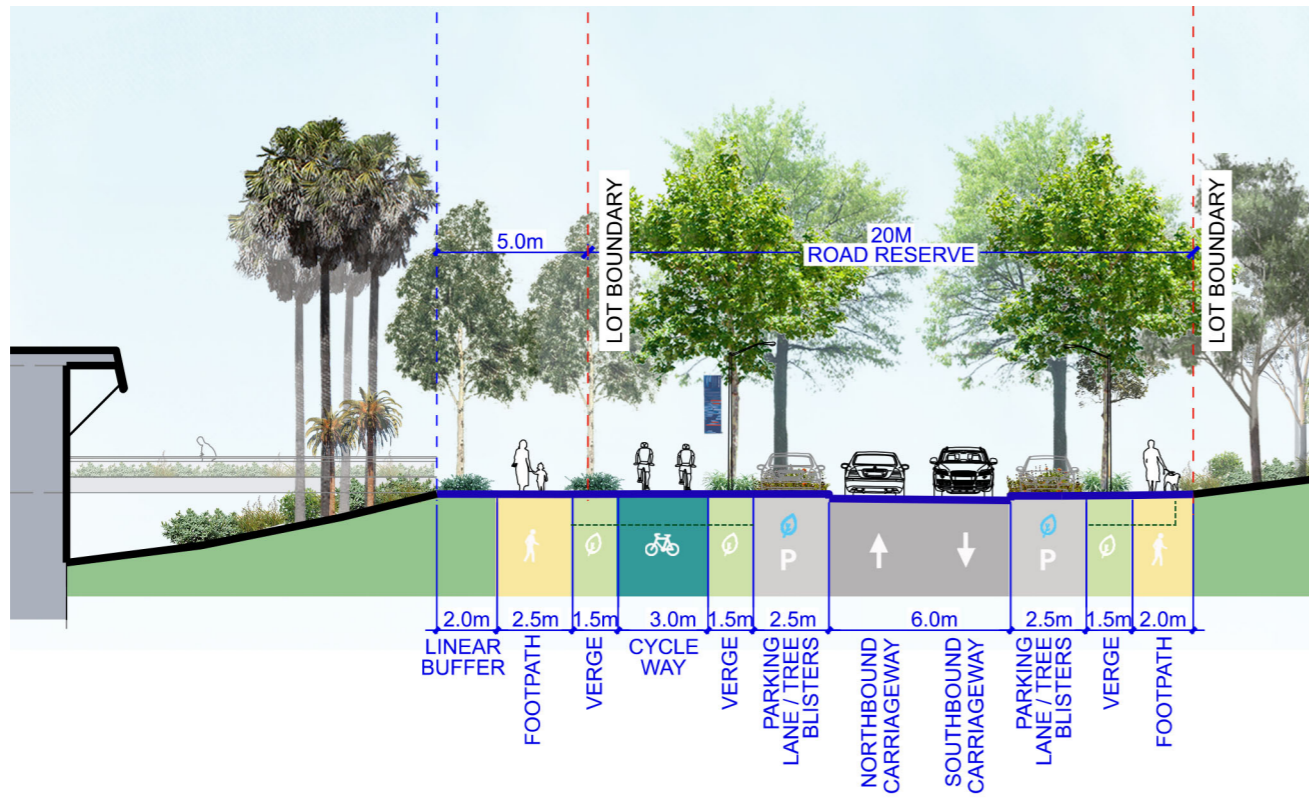
### Existing Condition:

Lyonpark Road is characterised by a wide road carriageway with parking on both sides, and a narrow footpath and verge with occasional street trees. The character is currently dominated by the scale of the wide open road corridor..

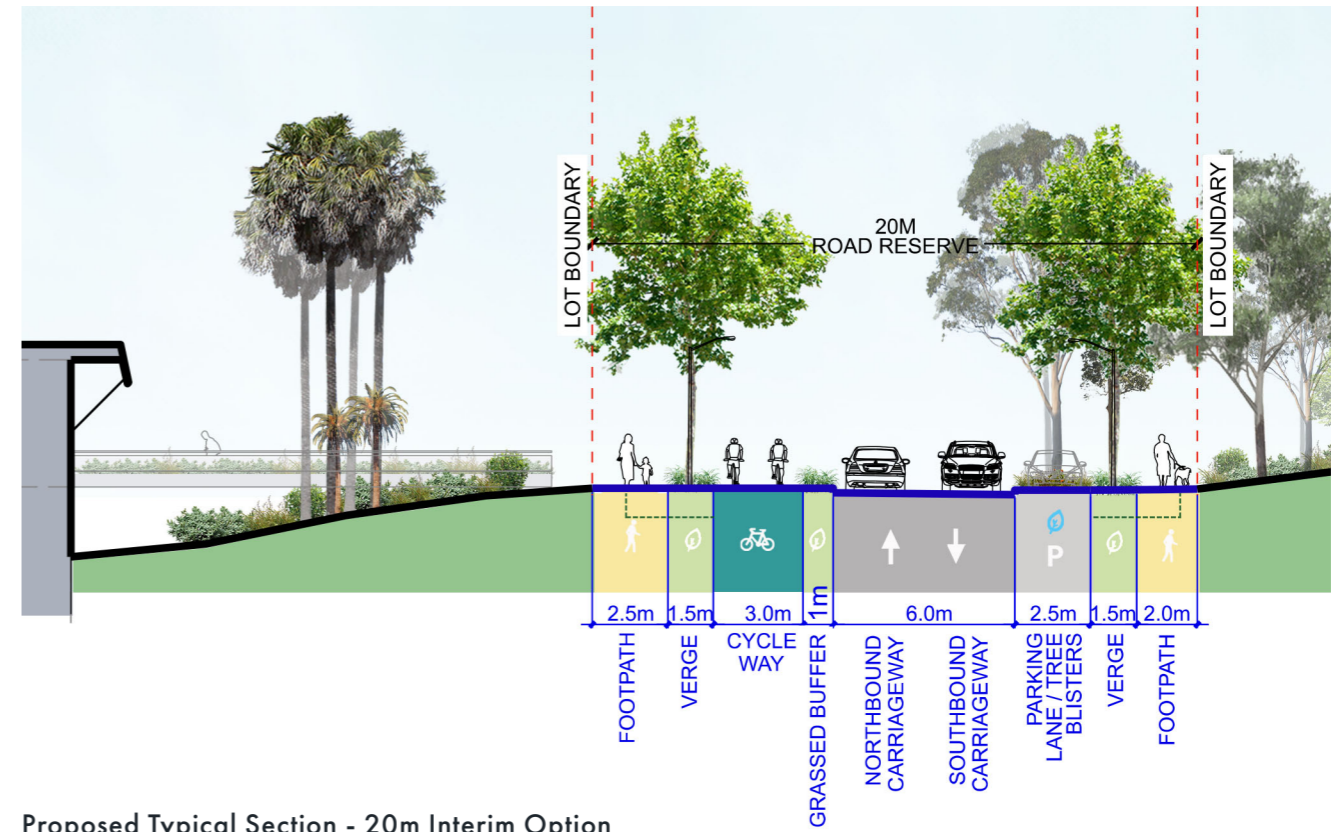
### Proposed Corridor:

- Creation of an arrival experience into precinct with the creation of a green entry with distinctly layered tree canopy planting.
- With parking on both sides, kerbside grass verge has occasional street tree.
- Parking lane features introduction of street trees in deep soil zones to establish generous tree canopy with new character planting and WSUD rain gardens throughout.
- Street experience further benefits from increased planting on boundaries and within private development.
- Acquisition of 5m additional road corridor space allows for a separated cycle path and increased shade tree planting to be introduced. An interim option removes a parking lane to create space for cycle path within the existing road corridor.
- Proposed trees to have supportive root zone trench as required to meet minimum soil volume.





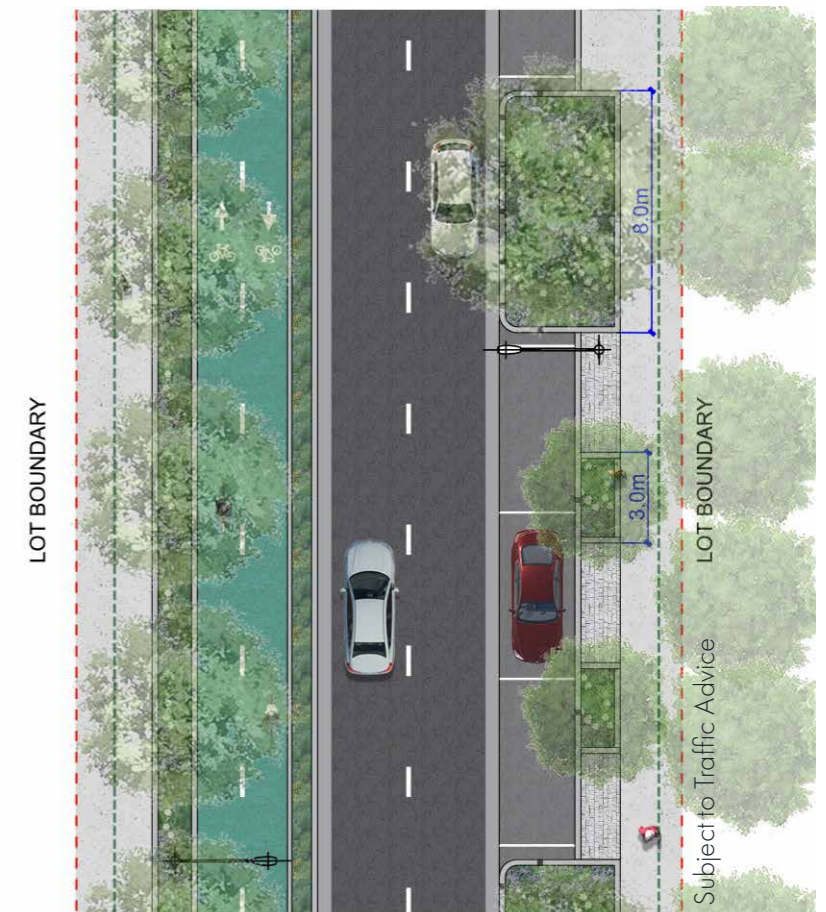
Proposed Typical Section - 25m Secondary Green Boulevard (Accommodating Separate Cycleway)



Proposed Typical Section - 20m Interim Option

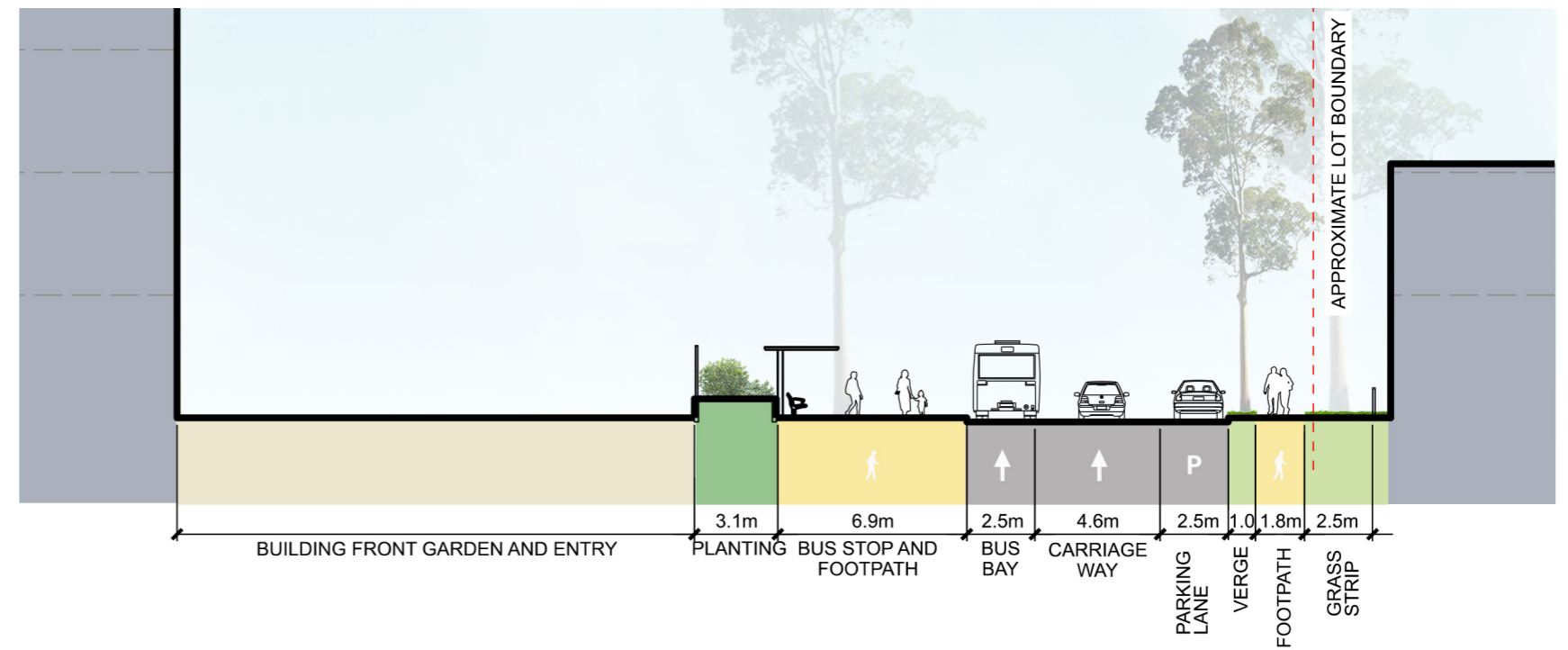
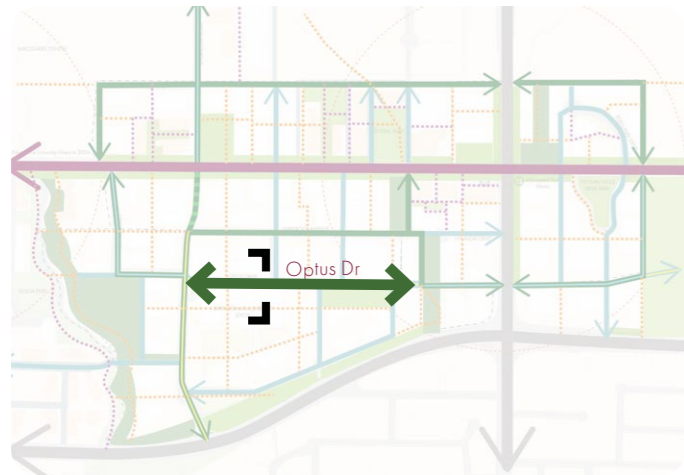


Proposed Typical Plan - 25m Secondary Green Boulevard (Accommodating Separate Cycleway)



Proposed Typical Plan - 20m Interim Option

## Typical Section 5 - 20m Local Street (Accommodating Separate Cycleway)



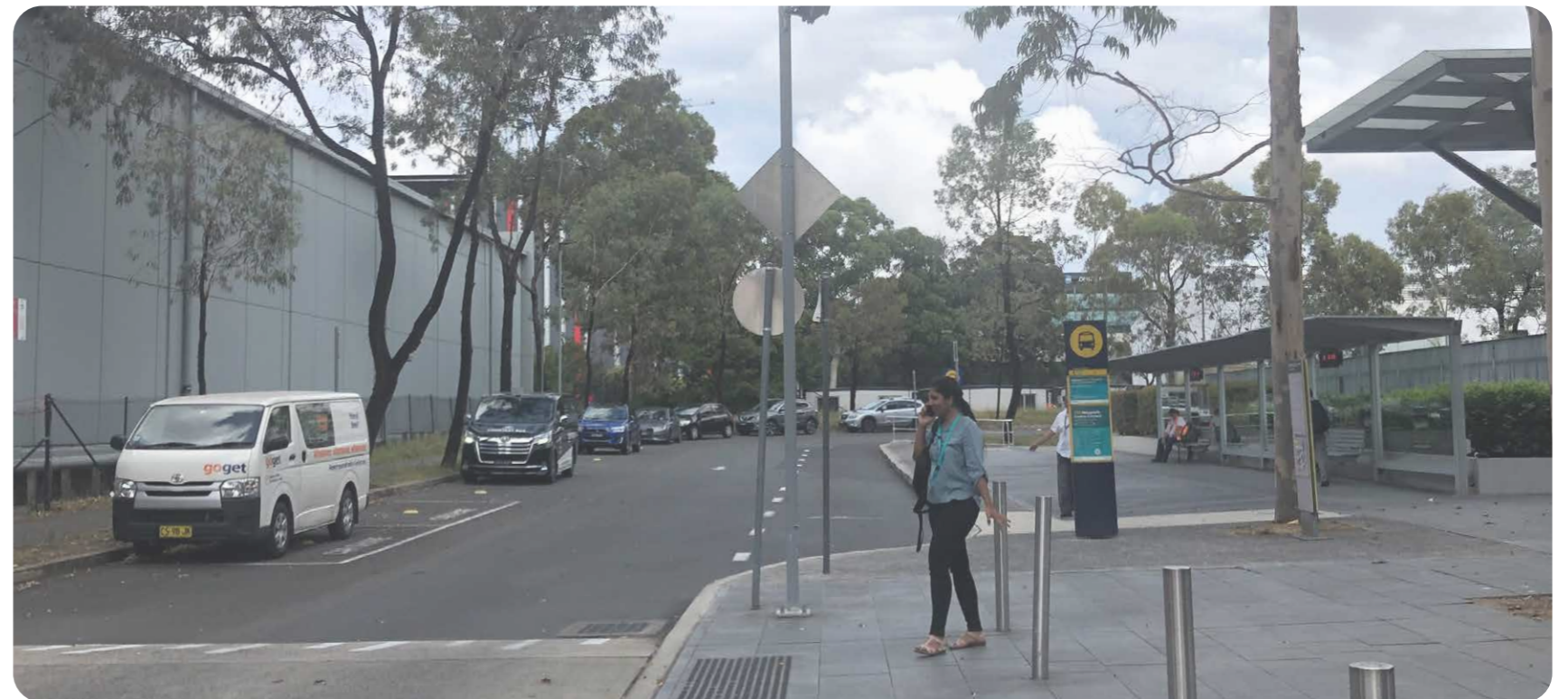
Existing Section - Optus Drive

### Existing Condition:

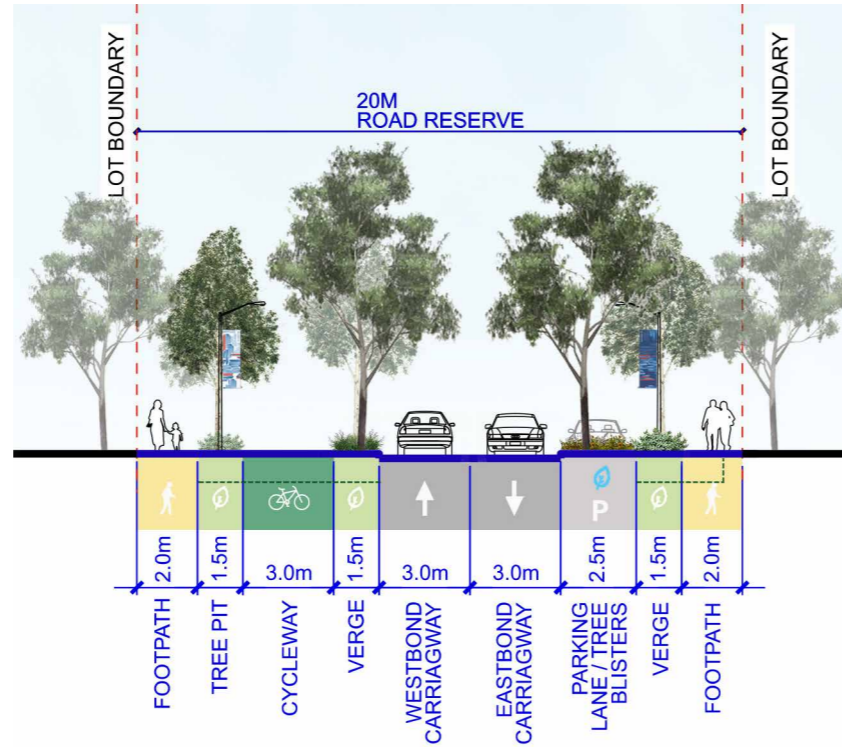
Optus Drive features large commercial buildings on either side, and some existing tall street trees. It is also the location of a large public transport interchange plaza space for Optus staff. The scale is not particularly welcoming to pedestrians, and there are no current cycle provisions.

### Proposed Corridor:

- Pedestrian-scale street with a continuous tree canopy and pedestrian lighting and sign-age.
- Optus public transport interchange plaza space becomes inviting and comfortable gathering spot with a kiosk, street furniture and tree planting.
- Separate cycleway accommodates active transport network.
- Proposed trees to have supportive root zone trench as required to meet minimum soil volume.



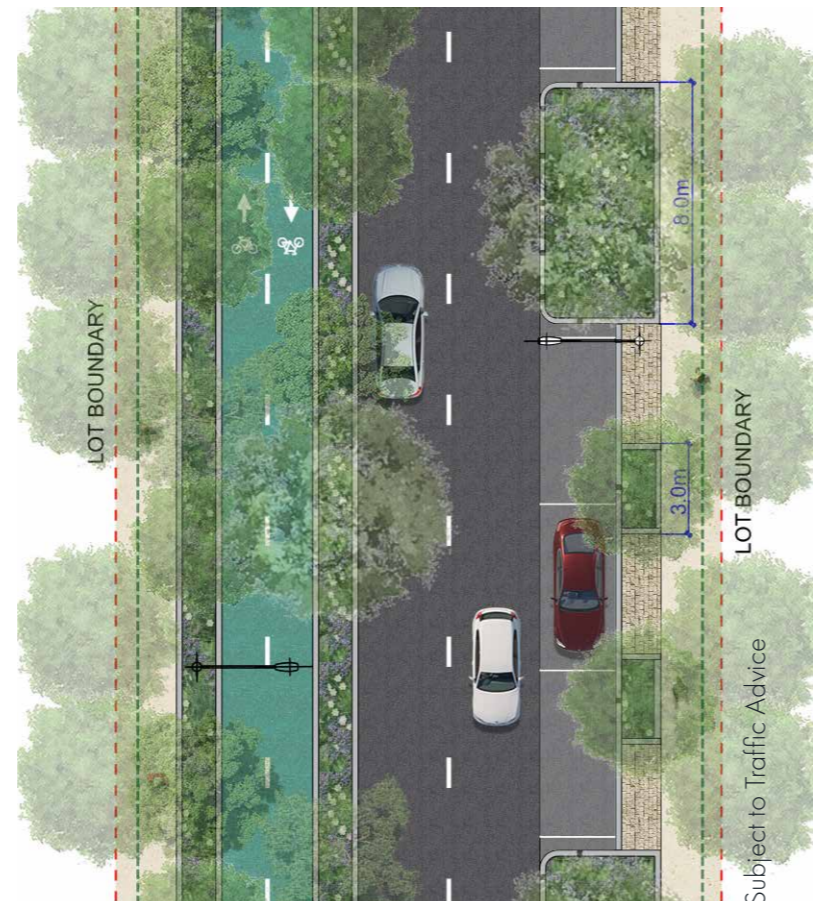




Proposed Typical Section - 20m Local Street (Accommodating Separate Cycleway)

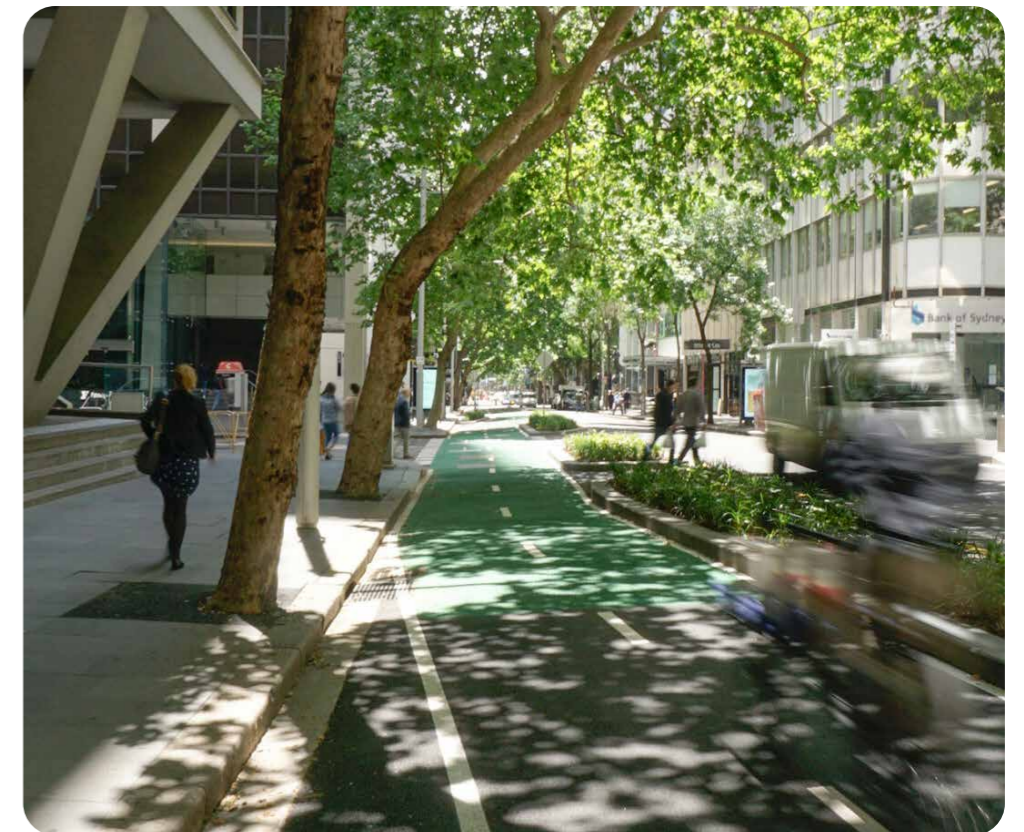


Street Trees in Lyon, Sue James



Proposed Typical Plan - 20m Local Street (Accommodating Separate Cycleway)

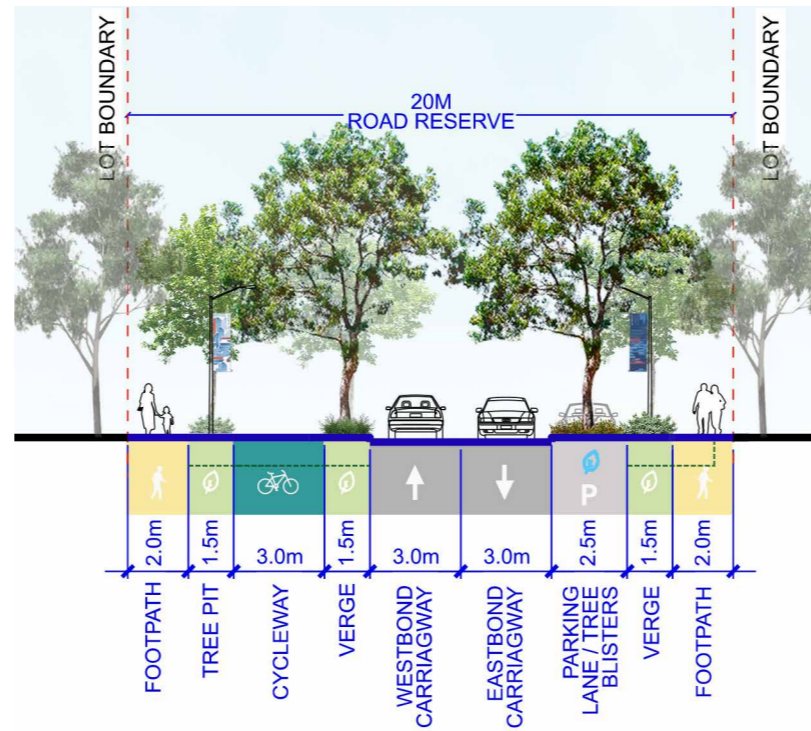
- Footpath
- Planting
- Separated Cycleway
- Parking Lane
- Carriageway
- WSUD
- Extent of Root Zone Trench
- Porous Surface



Pitt Street Cycleway, Tract

# New Street Typologies

## Typical Section 6 - 20m Secondary Circulation Route (Accommodating Separate Cycleway)



Proposed Typical Section - 20m Secondary Circulation Route (Accommodating Separate Cycleway)



Bondi Junction Cycleway, Tract

This circulation route includes a section of Khartoun Road to establish the separated cycle network northwards. This has narrow footpaths and a short section of shared cycle path which forms part of the existing Waterloo road shared path network.

A portion of new road corridor is introduced east of Optus Drive to connect the east/ west circulation route.

### Proposed Corridor:

- New linking streets proposed to provide a connected separated cycleway network for the precinct.
- Pedestrian-scale street with a continuous tree canopy and pedestrian lighting and sign-age.
- Separate cycleway accommodates active transport network.
- Proposed trees to have supportive root zone trench as required to meet minimum soil volume.

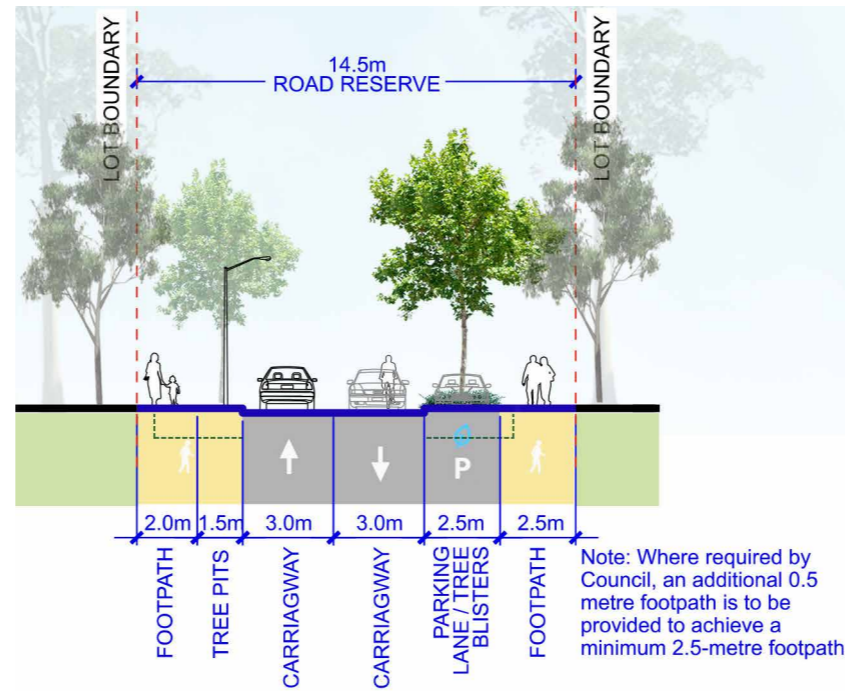
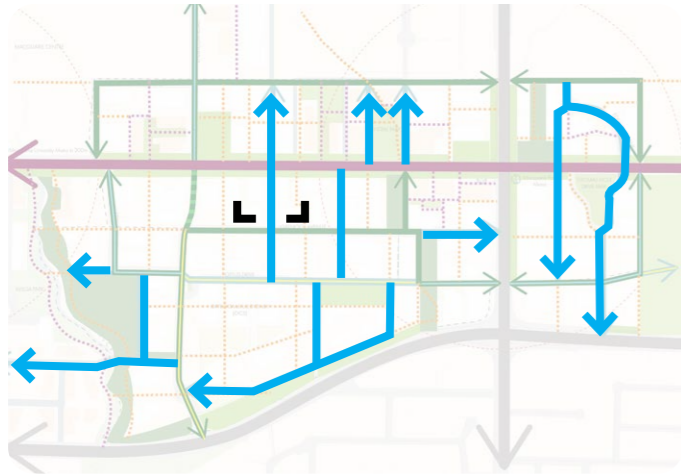


Proposed Typical Plan - 20m Secondary Circulation Route (Accommodating Separate Cycleway)



Bondi Junction Cycleway, Tract

## Typical Section 7 - 14.5m Local Street



Proposed Typical Section - 14.5m Local Street



Alinga Street, Tract

Creation of new linking streets where none currently exist.

### Proposed Corridor:

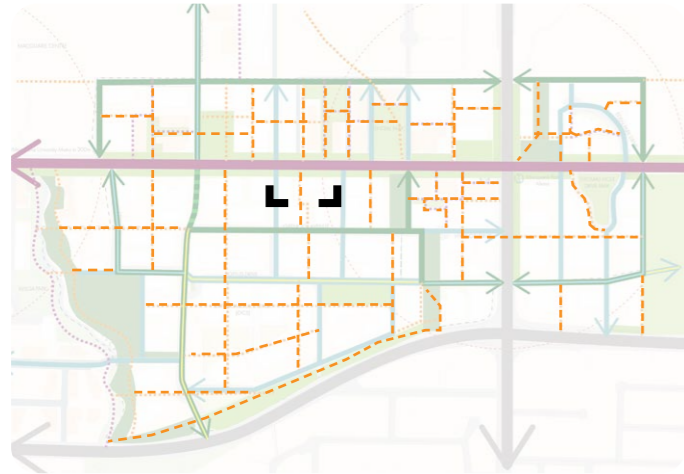
- Local streets are pedestrian priority, slow speed environments to encourage walkability in this fine grain network
- Street parking is proposed on one side, broken up with landscaped blisters which support tree canopy and WSUD features
- Landscaping and paving contribute to the fine-grain human-scale of this network.
- Proposed trees to have supportive root zone trench as required to meet minimum soil volume.



Proposed Typical Section - 14.5m Local Street



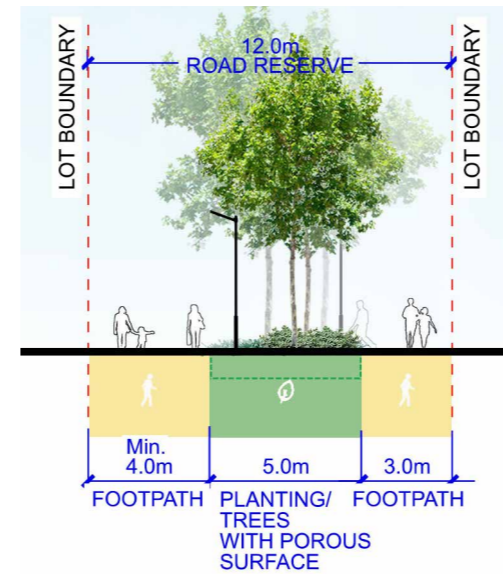
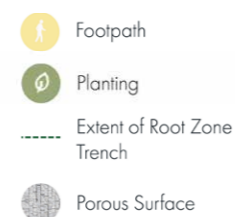
## Typical Section 8 - Pedestrian Through-Site Link



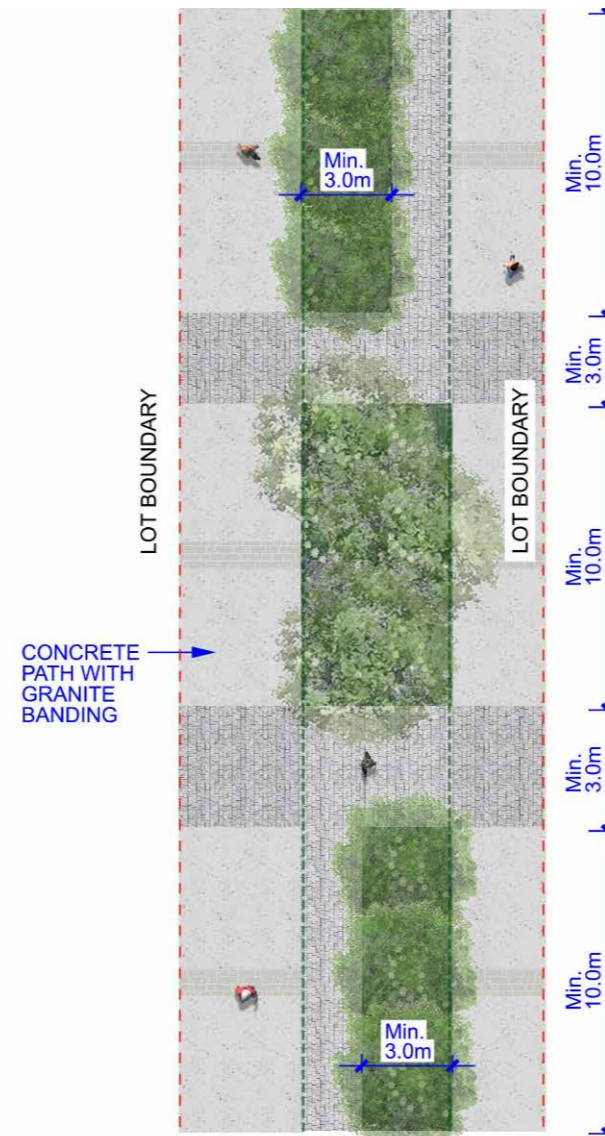
Creation of new linking streets where none currently exist.

### Proposed Corridor:

- Through site links are to provide increased network of pedestrian access through the neighbourhoods, to create a fine grain network and encourage walkability.
- Inclusion of trees and vegetation to contribute to pedestrian comfort and amenity, and contribute to increased canopy cover in the precinct.
- Links will adopt WSUD techniques to support healthy vegetation and support tree canopy and WSUD features
- Landscaping and paving contribute to the fine-grain human-scale of this network.
- Proposed trees to have supportive root zone trench as required to meet minimum soil volume.



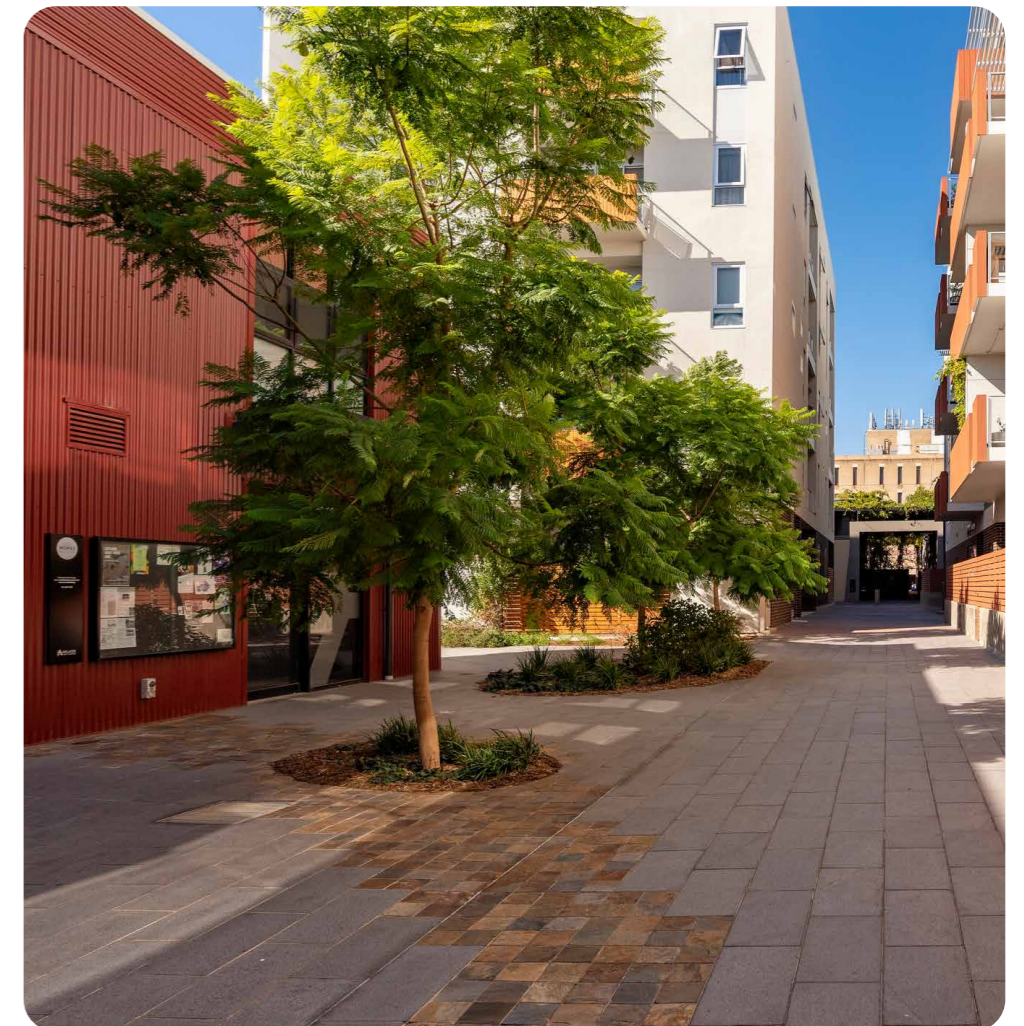
Proposed Typical Section - 12m Pedestrian Through-Site Link



Proposed Typical Plan - 12m Pedestrian Through-Site Link

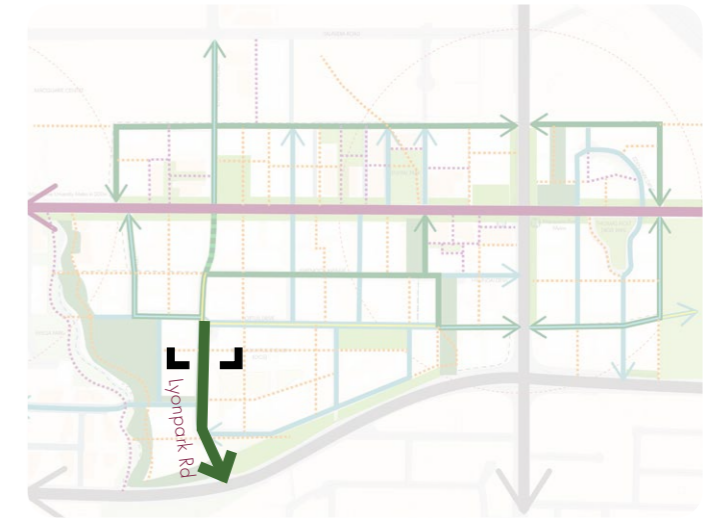
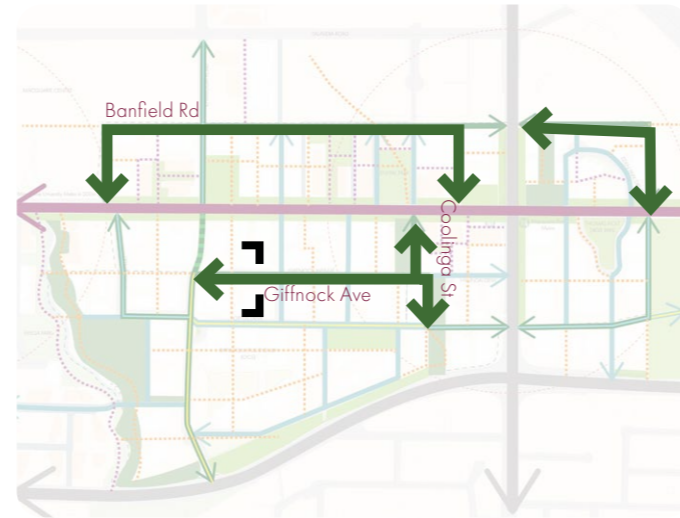


Ergo Apartments, Tract



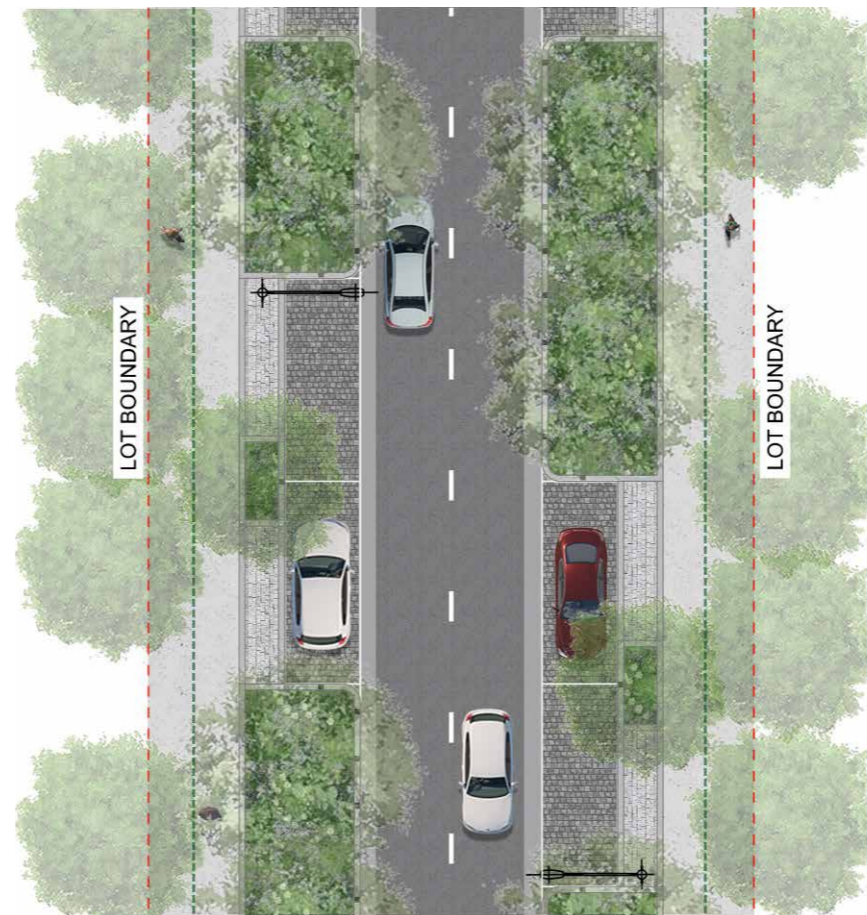
Ergo Apartments, Tract

## Future Proofing Typical Streetscape Layouts

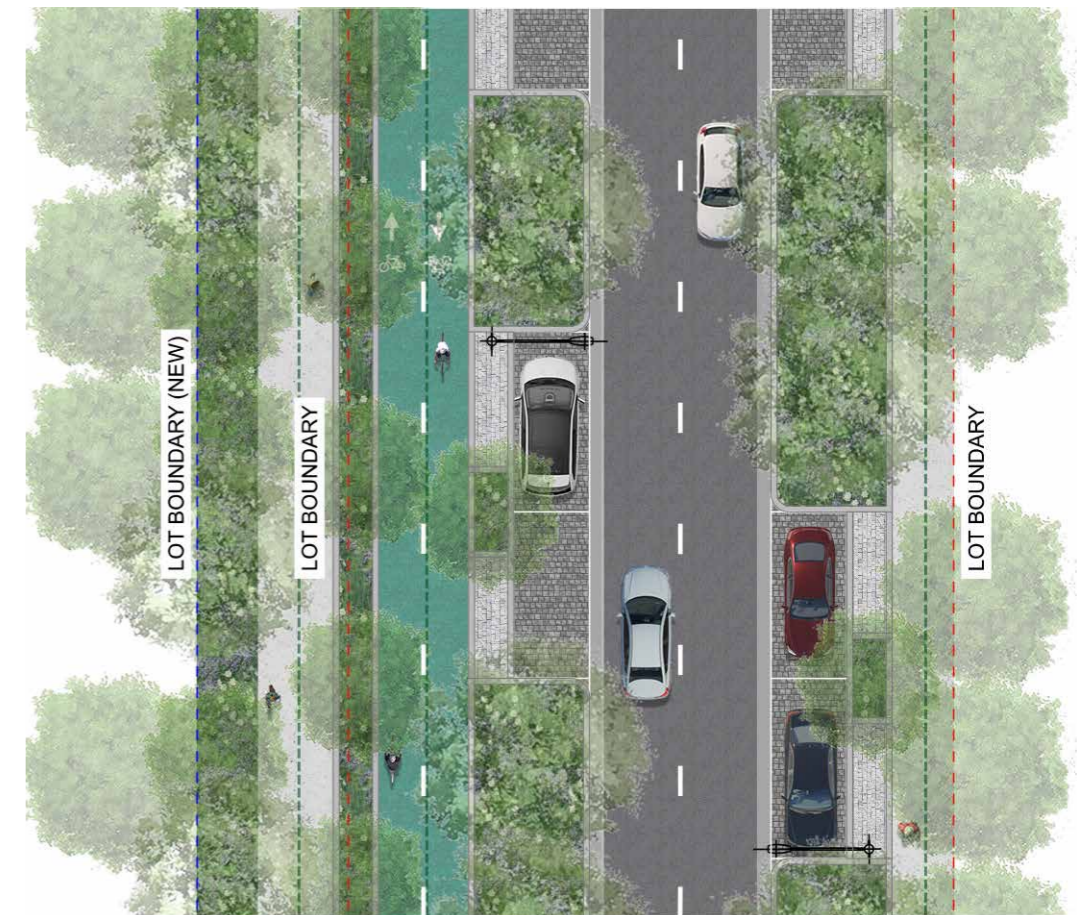


### Adaptable Streetscapes: Future proofing street spatial arrangements

- Opportunity for future replacement of kerbside parking with additional trees and planting beds.
- Current typical street layouts are adaptable and have a street tree structure that can be supplemented over time with increased vegetation and canopy coverage.
- Benefit of progressively infilling kerbside parking on an as-needs basis, can increase tree canopy and shade coverage and react to evolving precinct Public Domain needs.
- Additional benefit where tree species selected can be in response to localised micro climate and reflect most appropriate tree for anticipated future conditions at time of planting.



Future Opportunity Typical 20m Secondary Circulation



Future Opportunity Typical 25m Secondary Green Boulevard (Accommodating Separate Cycleway)

# 7. Public Domain Design Guidelines

## 7.1 Introduction

### Purpose & Objectives

The purpose of these Public Domain Design Guidelines is to lay out the intended master plan outcomes to guide development of the public realm within the Macquarie Park Innovation Precinct neighbourhoods. The Design Guidelines apply to development of public land within Fig. 1 known as Macquarie Park Innovation Precinct (the site), as well as privately-owned publicly accessible land, and that which adjoins the public realm and therefore impacts on the quality of the public domain.

The objective is to ensure the qualitative outcome of the Macquarie Park rezoning will be better than or equal to the developed master plan, while permitting enough flexibility to support landowner-specific requirements and to be able to respond to an ever-evolving environment.

### Environmental Principles

Generally there is an assumption of retention of existing trees throughout, recognising the importance of these trees for canopy/ shade and heat mitigation, habitat and ecology, micro-climate and air quality, plus visual and amenity benefits for the character and experience of the whole precinct. Retention of existing tree brings an understanding that localised levels and layout will be adapted for the benefit of their on-going health and survival. Proposed measures for all public domain vegetation includes adoption of WSUD best practice techniques to capture localised rainwater and increase moisture and health of existing soils. Street trees further benefit with the integration of best practice root zone requirements, with a focus on the provision of appropriate soil volumes and connected root trenches. An preference for trees within deep soil, which is connected to ground, rather than podium or on structure.

### Relationship to Other Planning Documents

These guidelines should be read in conjunction with the MPIP Macquarie Park Public Domain Masterplan (PDMP)



Figure 5. Land to which the design guidelines apply

## 7.2 Vision & Principles

### 7.1.1 Vision

Integrating with the adjoining Metro Stations, the Innovation Precinct is the accessible, vibrant, mixed use and transit oriented heart of Macquarie Park, capable of attracting the very best firms and the brightest global talent.

The public domain reflects a distinct sense of place as an urban centre and exhibits a high level of urban design quality, providing for a relatively dense, human scale built form complemented by a fine-grain, high quality public domain that celebrates Country and connection.

### 7.1.2 Principles

The Innovation Precinct's Public Domain reflects the following design principles, as established in the Public Domain Plan:

#### DP1 - Greening the Neighbourhoods:

##### 1-1: Generous number of open spaces that:

- Satisfy the future population growth and demands
- Connect with the walkable catchment
- Include well located pocket parks within each neighbourhood

##### 1-2: Strong tree canopy within green links that contributes to a target of minimum 35% canopy cover to:

- Strengthen street and open space amenity
- Ameliorate the effects of urban heat island

##### 1-3: Revitalised creeks and revealed Woven Ways, with:

- Focus to establish generous open space with a focus on Shrimptons Creek Riparian Zone, nearby residential areas activating the open space
- Industrial Creek revealed through active and functional linear parks, themes are continued through connected streetscape and pedestrian links
- Porters Creek acknowledged within transit plaza space and celebrated at key arrival moment.



Bougainvillea Gdns Brook water Source: TRACT

#### DP2 - Connecting the Neighbourhoods:

##### 2-1: Fine grain, permeable urban grid that:

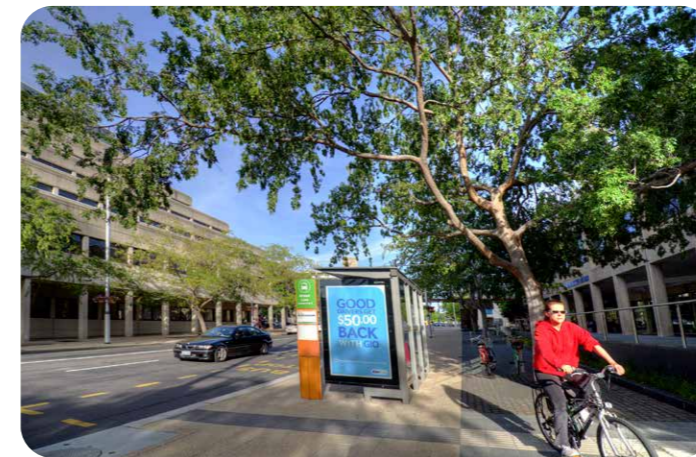
- Prioritises pedestrians with appropriate crossing points
- Provides connected streets for permeability across major roads

##### 2-2: Strong public and active transport networks that:

- Prioritise access and way finding of the public transport network to create legible and safe cycle networks

##### 2-3: Arrival experiences and gateway moments that:

- Acknowledge the different scale and arrival experiences of diverse individuals and visitors



Alinga Street Source: TRACT

#### DP3 - Designing with Country:

##### 3-1: Connecting the site to Country:

- As an important gathering place overlooking two waterways and ancient trails

##### 3-2: An open and accessible site

- That supports a diverse range of users

##### 3-3: Celebrate Country:

- As a threshold for international visitors

##### 3-4: Tell our stories:

- In a place of ceremony, lore and settlement through place based interventions



Westmead Hospital Source: Brett Broadman



## 7.3 The Structure Plan

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 3: The Structure Plan

The Urban Structure Plan has been re-imagined in the 3 neighbourhoods of this Master Plan to create high-density commercially-oriented mixed-use neighbourhoods. Breaking down the traditionally large urban blocks with pedestrian-oriented streets, and filling in the gaps and surface parking between existing buildings aims to transform the sense of place.

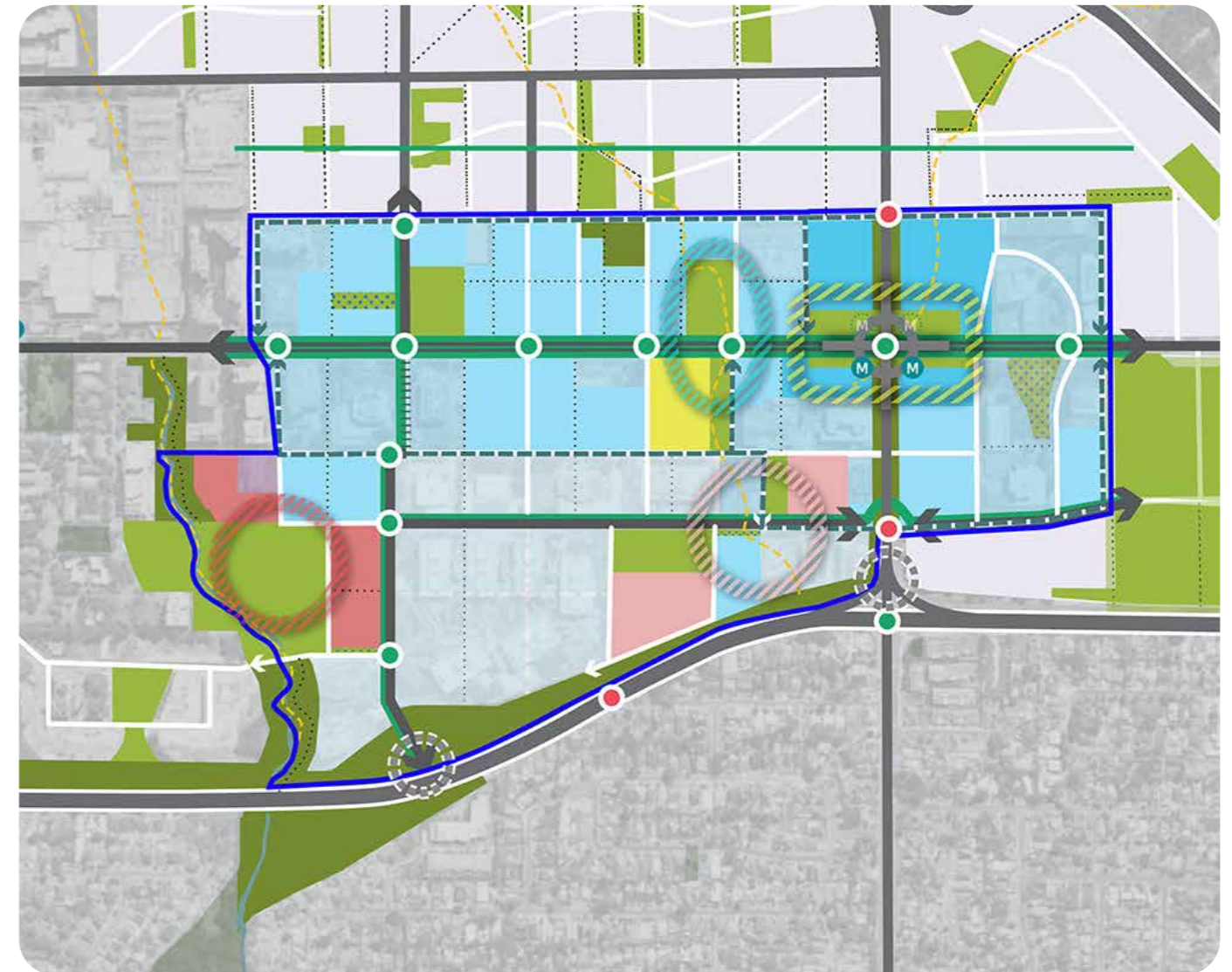
### Design Outcomes

An urban structure within MPIP that:

- Reinforces the valued character of the streets and public realm,
- Creates a well-defined, green public domain,
- Maximises activation of the public domain,
- Balances the demand for commercial, residential and mixed-use precincts within the neighbourhoods,
- Reinforces the fine grain and vertical rhythm of streetscapes.

### Amended Clauses

<b>Fig 3.2.1</b>	Update to reflect MPIP Neighbourhoods Structure Plan
<b>3.2</b>	<p><i>Macquarie Park Corridor Innovation Precinct will include new residential communities around the North Ryde and Macquarie University Stations Shrimptons Creek Riparian Zone while the Commercial Centre will be centred on the Macquarie Park Station and Waterloo Road. Intensive development centred on Waterloo Road is proposed to transition through the Business Park areas to the lower scaled residential areas adjoining the Macquarie Park Corridor. <b>Mixed-use precincts will be introduced in the south-west of the study area.</b></i></p> <p><i>The Commercial Centre will evolve from its business park roots to become an urban employment centre a thriving, vibrant Innovation Precinct supported by key public transport infrastructure notably the Epping to Chatswood Rail Link which opened in 2009 and is due to be expanded to link to Sydney's north-west.</i></p> <p><i>This Development Control Plan Design Guide seeks to enhance the public domain and implement new roads and parks to support future residents, workers, university students and visitors. <b>The structure plan aims to create a fine-grain, permeable environment that prioritises pedestrians and supports active transport.</b></i></p>



## 7.4 Access Network Streets

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 4: Access Network, 4.1: Streets

The Macquarie Park Innovation Precinct street hierarchy is clearly defined in the Master Plan, and includes the following street typologies:

- 30m Waterloo Road Green Boulevard
- 20m Secondary Circulation Route
- 20m Green Boulevard Reserve with Separate Cycleway
- 25m Secondary Green Boulevard with Separate Cycleway
- 20m Secondary Circulation Route with Separate Cycleway
- 20m Local Street with Separate Cycleway
- 14.5m Local Street
- 12.m Pedestrian Through Site Link

### Design Outcomes

The master plan defines green street corridors that are well connected, with a logical hierarchy that defines their character and supports intuitive way finding. Streets are more than just movement corridors, and also inform the sense of place and include areas to socialise and dwell.

The street network seeks to:

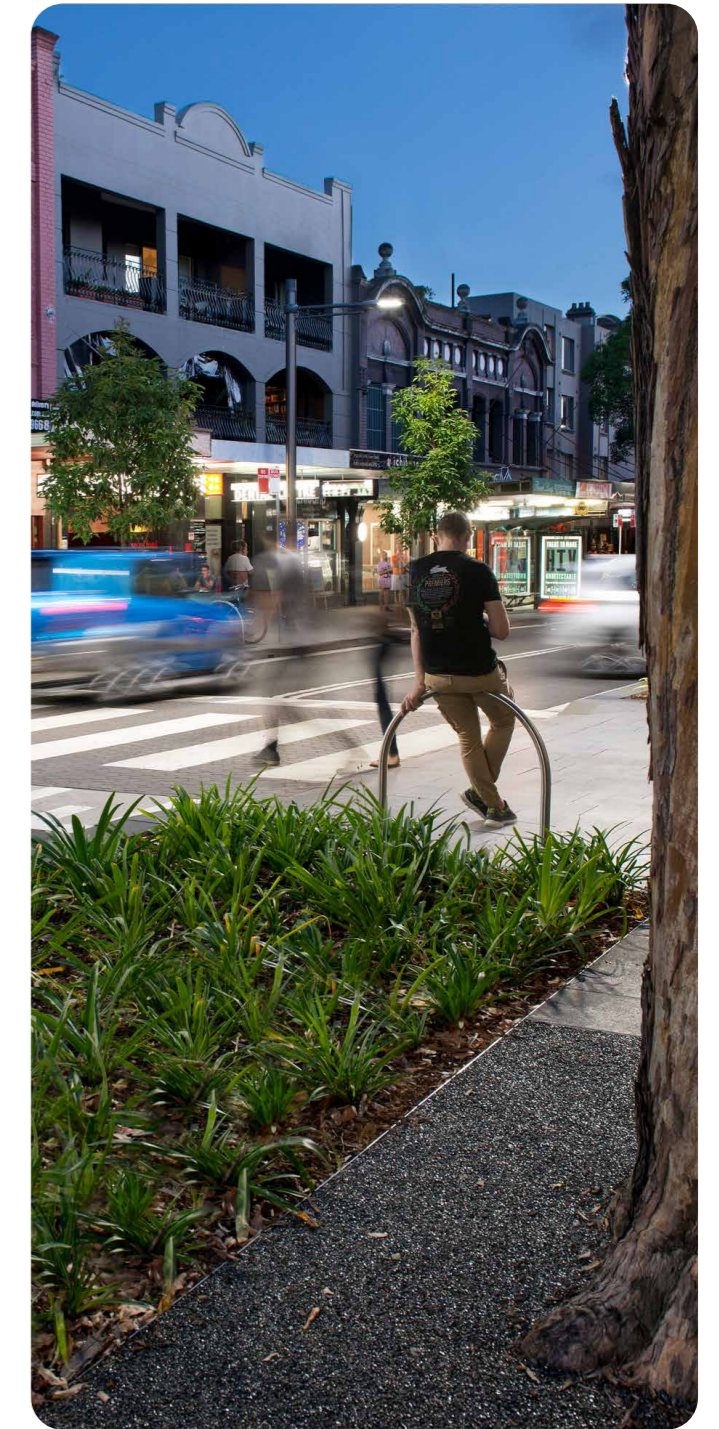
- Include provision for generous tree canopy cover,
- Include a street tree palette that celebrates local character and provides for pedestrian comfort and amenity,
- Complete missing links and improve upon existing connections,
- Align with the Woven Ways of Macquarie Park,
- Incorporate Water Sensitive Urban Design (WSUD) features and planting,
- Encourage pedestrian movement and active transport.

### DCP Amended Clauses

<b>Fig 4.1.1</b>	Access Network diagram updated to reflect MPIP Street Typology Structure Plan
<b>4.1</b>	Street hierarchy in this study area to include the following types: <ul style="list-style-type: none"> <li>- 30m Waterloo Road Green Boulevard</li> <li>- 20m Secondary Circulation Route</li> <li>- 20m Green Boulevard Reserve with Separate Cycleway</li> <li>- 25m Secondary Green Boulevard with Separate Cycleway</li> <li>- 20m Secondary Circulation Route with Separate Cycleway</li> <li>- 20m Local Street with Separate Cycleway</li> <li>- 14.5m Local Street</li> <li>- 12.m Pedestrian Through Site Link</li> </ul>
<b>4.1-O4</b>	<i>To accommodate increased traffic movement within the corridor</i> <b>To increase share of active and public transport movements within the neighbourhoods</b>
<b>4.1-05</b>	<i>To provide additional opportunities for on-street car parking</i> <b>To balance on-street car parking where required with increased tree canopy cover for pedestrian amenity, garden beds and pedestrian hard scape</b>
<b>4.1-a)</b>	<i>Provide new public streets and pedestrian connections in accordance with Figure 4.1.1 Access Network</i> <b>MPIP Structure Plan</b>
<b>4.1-f)</b>	<i>Provide new Streets as follows per MPIP PDMP Street Typologies</i> <i>i. 20m wide (typical) streets in accordance with Figure 4.1.2</i> <i>ii. 14.5m wide (typical) streets in accordance with Figure 4.1.3</i>

### DCP Additional Clauses

<b>4.1-O8</b>	<b>To provide tree canopy cover to meet overall target of 45% across the precincts, using a street tree palette that celebrates local character in each neighbourhood</b>
<b>4.1-O9</b>	<b>To provide for new streets that align with the Woven Ways, and use gateway points in the street network to celebrate Country</b>
<b>4.1-O10</b>	<b>To incorporate WSUD techniques and planting integrated into all streets to maximise storm-water capture, and further emphasise this in the streets that align with Woven Ways</b>
<b>4.1-h)</b>	<b>Safe, accessible and convenient pedestrian and cycle crossing points must be provided at all intersections, key destinations, on desire lines and locations of high amenity</b>
<b>4.1-i)</b>	<b>Way-finding sign-age must be provided at logical and visible points along main streets and at key intersections</b>
<b>4.1-j)</b>	<b>Materials, furnishings, public art and landscaping within the each neighbourhood must be of a high-quality and consistent palette as outlined within the MPIP PDMP, and should seek to reflect the local character of the neighbourhood</b>
<b>4.1-k)</b>	<b>All publicly accessible areas must meet DDA standards of universal access</b>
<b>4.1-l)</b>	<b>CPTED principles must be achieved including encouraging passive surveillance, effective lighting, management of public areas and boundary demarcation.</b>
<b>4.1-m)</b>	<b>Pedestrian scaled lighting must be included along all major pedestrian and cyclist routes and shared paths</b>



Crown Street Source: TRACT

## 7.4 Access Network

## Pedestrian Connections

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 4: Access Network, 4.2: Pedestrian Connections

Pedestrian connections are particularly important where large land-holdings dominate the urban structure. Generous through-site connections that facilitate safe, effective and efficient movement of pedestrians encourage pedestrian walkability, street vibrancy and an overall sense of collaboration in the public realm.

### Design Outcomes

The MPIP Master Plan creates an urban block structure that is sufficiently fine grained to support walking as the primary mode of transport.

The pedestrian network seeks to:

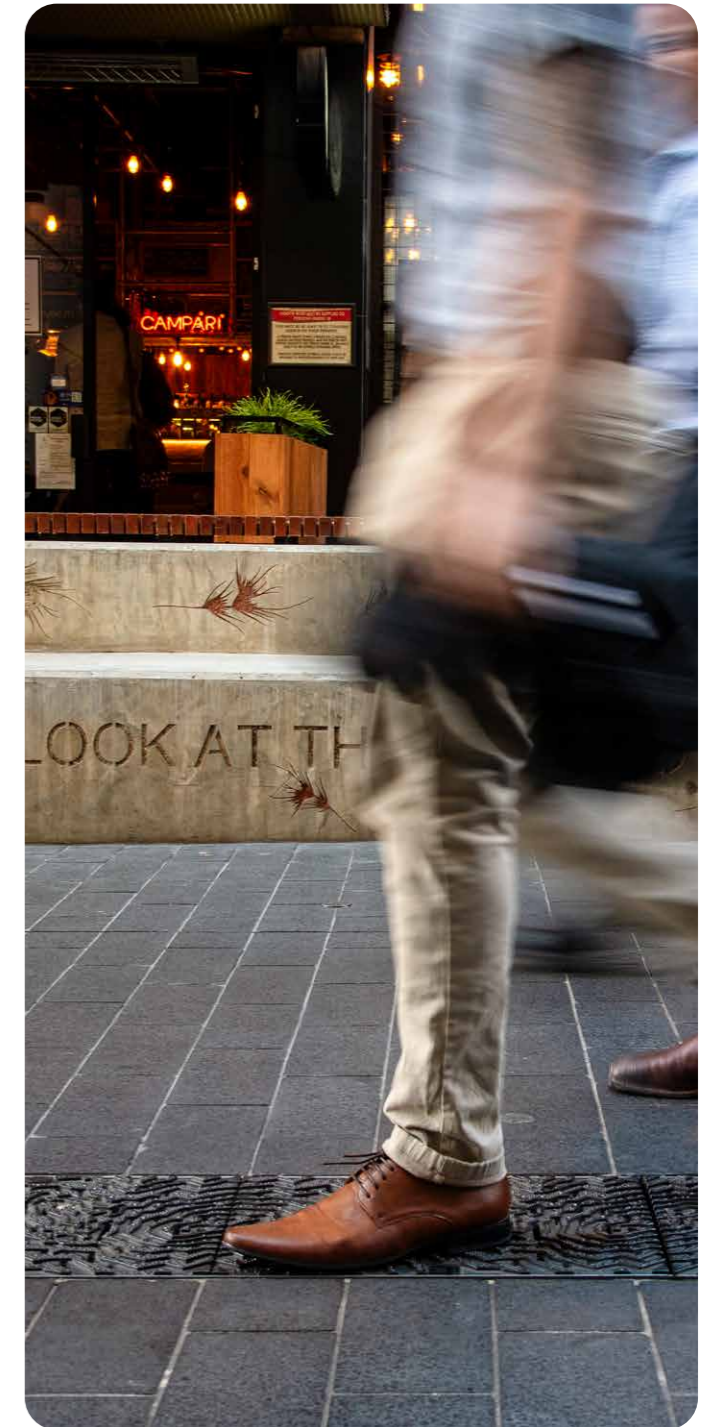
- Complete and improve existing connections,
- Minimise walking distances with high quality, safe and attractive connections between key destinations and across barriers such as major roads,
- Be accessible, active and legible,
- Align with the Woven Ways of Macquarie Park,
- Provide partial connections which can be completed when adjacent site development occurs.

### Amended Clauses

<b>4.2a)</b>	<p>Provide pedestrian/cycle bridges in accordance with the Access Structure Plan. <b>Figure 3.4.7 MPIP PDMP Structure Plan</b></p> <p>i. Over the M2 connecting Christie Park to Macquarie Park Corridor</p> <p>ii. Connecting across Shrimptons Creek</p> <p><b>iii. Connecting across Lane Cove Road at Drake Ave</b></p> <p><b>iv. Connecting across Lane Cove Road at Dirrabari Rd</b></p>
<b>4.2c)</b>	<p>Pedestrian connections are to: i. Be a minimum of 6m wide comprising 4m wide paving and 2m wide soft landscaping as shown in Figure 4.2.1 (or as determined by Council).</p> <p>ii. Be designed with a 2m setback to any building.</p> <p>iii. Be publicly accessible at all times <b>and open to the sky;</b></p> <p>iv. Provide a clear sight-line from one end to the other for surveillance and accessibility;</p> <p>v. Maximise active frontages <b>pedestrian-connections</b></p> <p>vi. Be designed to consider pedestrian safety and the security of adjacent businesses, particularly at night. (For example, where pedestrian through-site links are provided between buildings, windows are to be provided between the internal ground floor space of the building and the pedestrian link)</p> <p>vii. Extend and enhance the public domain and have a public domain character.</p> <p><b>viii. Pedestrian connections should be attractive, with high quality exterior grade materials to all surfaces, and well-lit</b></p> <p><b>ix. Be designed with appropriate protection to prevent vehicle access</b></p>

### Additional Clauses

<b>4.2e)</b>	<b>Maximum urban block length of 200m, development should provide a new through-site pedestrian connection.</b>
<b>4.2f)</b>	<b>Within 400m of the Metro stations, additional pedestrian connections should be provided to manage high pedestrian volumes.</b>
<b>4.2g)</b>	<b>Where a development has the potential to achieve a through-block connection by extending an existing or proposed connection on an adjoining site, the development should provide for the completion of the through-site connection.</b>
<b>4.2h)</b>	<b>Connections should have highly legible entries and integrate clear way finding at pedestrian level</b>
<b>4.2i)</b>	<b>Connections should achieve 45% tree canopy cover and employ WSUD techniques.</b>



Topham Mall, Adelaide

## 7.4 Access Network

## Bicycle Network

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 4: Access Network, 4.3: Bicycle Network

The cycle network within the three neighbourhoods of the MPIP has been considered to provide a connected network with a hierarchy based on the intended use of each street typology. Separated cycle paths are envisaged along key routes, and in a loop through the centre of the neighbourhoods to best service key destination access points. The fine grain grid is filled in with off-road shared paths and on-road cycling on slower speed local roads.

### Design Outcomes

The MPIP Master Plan creates a cycle network that is sufficiently fine grained to support cycling as an attractive alternative to private vehicle use for commuters, residents and visitors.

The cycle network seeks to:

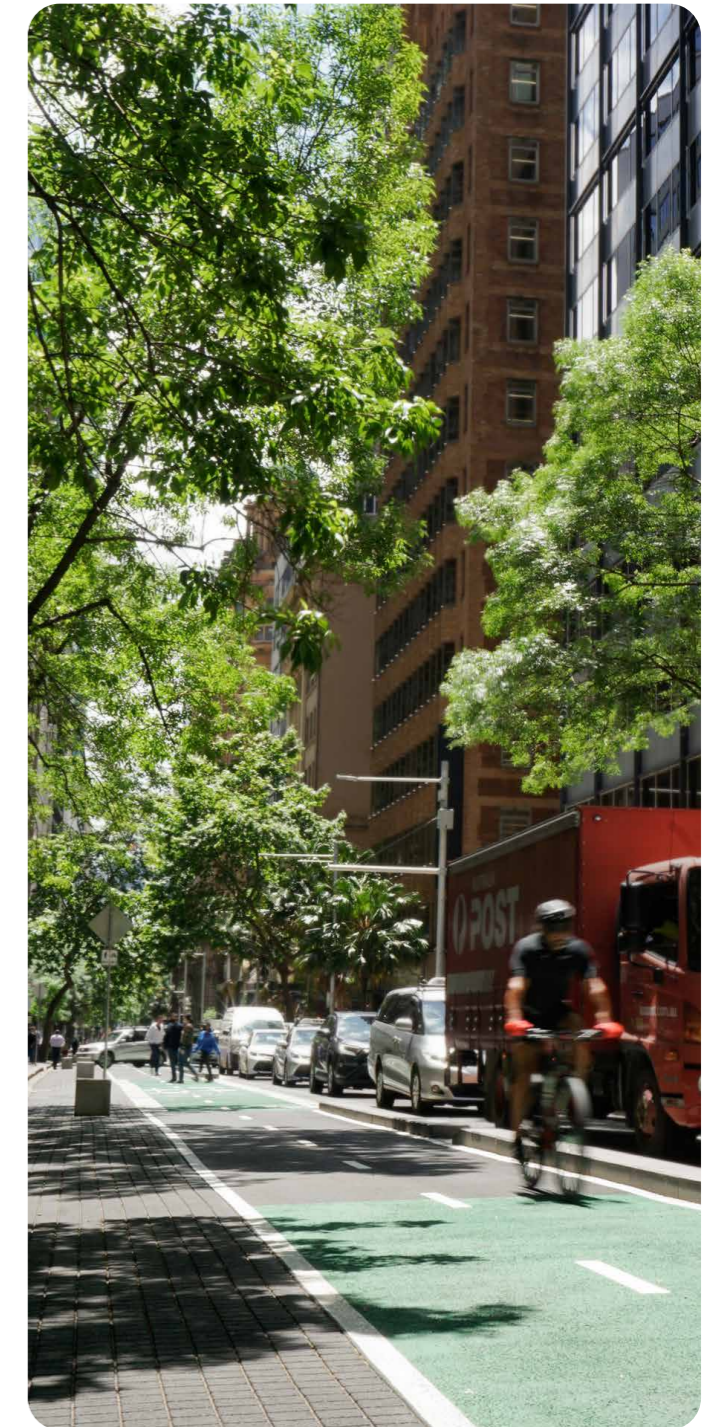
- Complete and improve existing connections,
- Minimise conflicts with pedestrians and vehicles,
- Minimise cycling distances with high quality, safe and attractive connections between key destinations and across barriers such as major roads,
- Be accessible and legible.

### Amended Clauses

<b>4.3</b>	<i>Dedicated cycle lanes are to be provided along all existing and new streets within the Corridor, as shown in Figure 4.1.1.</i>  <b>Separated, shared path and on-road cycle lanes are to be provided as shown in MPIP Structure Plan.</b>  <i>This integrated cycle strategy maximises the opportunities for cycle circulation within the Corridor.</i>
<b>4.3a)</b>	<i>Provide dedicated cycle access in accordance with Ryde Bicycle Strategy 2014, refer Figure 4.3.1 Indicative Cycleways.</i>  <b>MPIP Structure Plan - Active Transport Network</b>
<b>4.3b)</b>	<b>Update to regional bicycle network</b>
<b>4.3c)</b>	<b>Update to local bicycle network</b>
<b>Fig 4.3.1</b>	<b>Update to MPIP Structure Plan - Active Transport Network</b>

### Additional Clauses

<b>4.3O5</b>	<b>To minimise conflicts with pedestrians and vehicles</b>
<b>4.3d)</b>	<b>Dedicated cycle paths must be designed for cyclists to travel up to 30km/hour and must be clearly demarcated with strong and consistent visual cues</b>
<b>4.3e)</b>	<b>Bicycle priority at intersections must be demarcated with strong and consistent visual and physical clues and supportive directional and associated road sign-age</b>
<b>4.3f)</b>	<b>Vehicle crossovers should be minimised where they intersect with cycle paths/shared paths</b>
<b>4.3g)</b>	<b>Bicycle parking facilities and self-maintenance hubs must be provided at key destination points throughout the Precinct and be located in areas of weather protection, passive surveillance and lighting</b>



Pitt St Cycleway Source: TRACT

## 7.4 Access Network

## Sustainable Transport

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 4: Access Network, 4.4: Sustainable Transport

Macquarie Park Innovation Precinct is well serviced by metro and bus links, although the modal split for public transport usage is still low and requires further consideration to encourage transport choice to and within the neighbourhoods.

### Design Outcomes

The MPIP Master Plan creates a connected network of public transport links, which integrate with the active transport and pedestrian network to encourage less dependence on private vehicle usage.

The sustainable transport network seeks to:

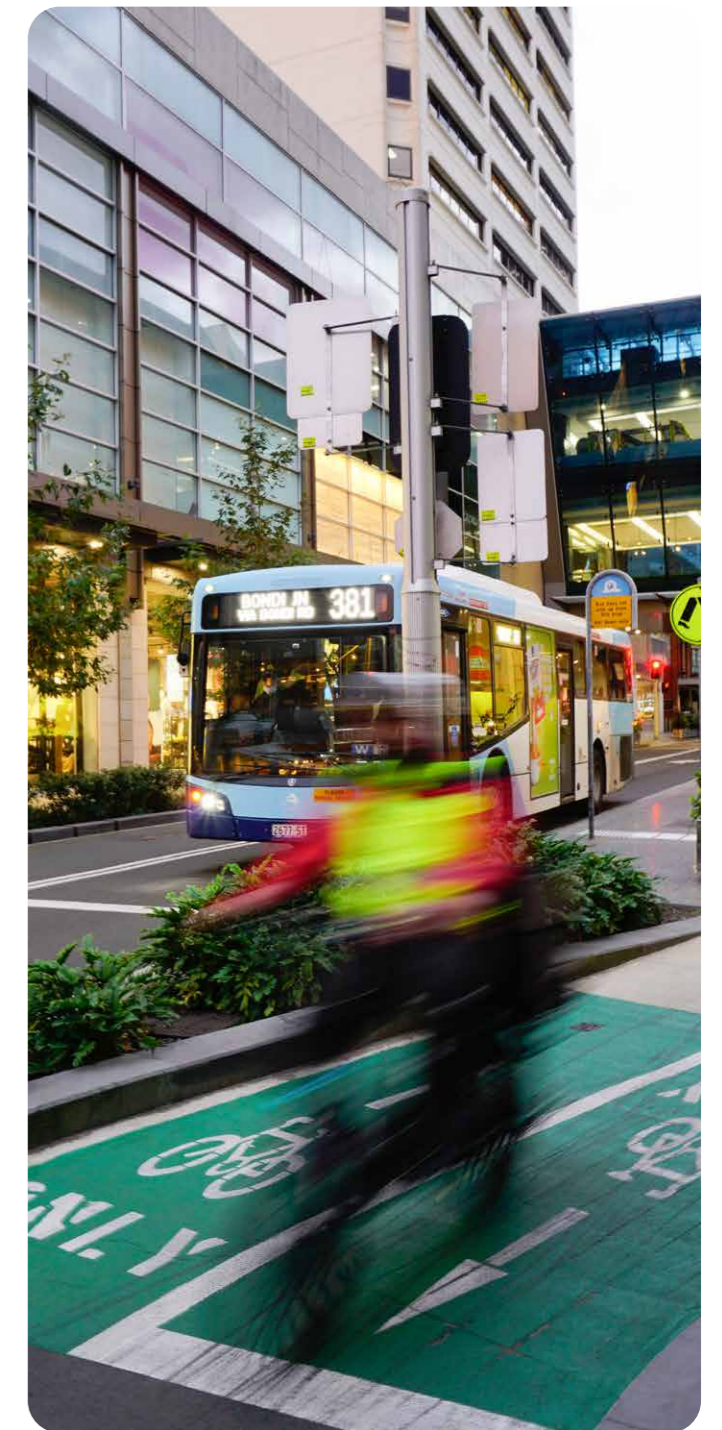
- Complete and improve existing connections,
- Minimise walking distances from key public transport nodes to destinations,
- Be accessible and legible.

### Amended Clauses

4.4	<p><i>Travel demand management has become a major strategic concern <b>been an ongoing focus</b> for policy makers, businesses and the public within Macquarie Park Corridor.</i></p> <p><i>The modal split for public transport usage in 2011 is 20%. This plan and other activities by the NSW state government and City of Ryde Council aim to assist to increase public transport use to 40% by 2031 including:</i></p> <ul style="list-style-type: none"> <li>- 3 rail stations opened in 2009 and expansion of the rail network to the north west</li> <li>- A transport interchange upgrade supported to increase bus usage</li> <li>- The Macquarie Park Transport Management Association (TMA) has been established</li> <li>- A review of the parking rates</li> </ul> <p><b>The current public transport context includes 3 stations, several bus routes and a modal interchange. The target as set out in the 2019 LSPS is for 60% public transport, 40% private vehicle usage for work journeys. The current share is 26% public transport (July 2021, Place Strategy).</b></p>
4.4O2	<p><i>To minimise rates of private vehicle use for commuters and business (particularly lone driver) trips and achieve a transport modal shift target of 40% public transport/60% private transport use <b>60% public transport/40% private transport use</b> for the journey to work in particular.</i></p>
4.4c)	<p><i>Framework Travel Plans - targets to be achieved TBC in - coordination with others required for final wording for this aspect.</i></p>

### Additional Clauses

4.4a)	<p><b>New bus stops should be shaded, sheltered and include seating and sign-age for users</b></p>
4.4h)	<p><b>Accessible parking bays to be provided throughout the Innovation Precinct in locations close to building entries and open space</b></p>



Bondi Junction Cycleway Source: TRACT

## 7.5 Public Domain

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 5: Public Domain

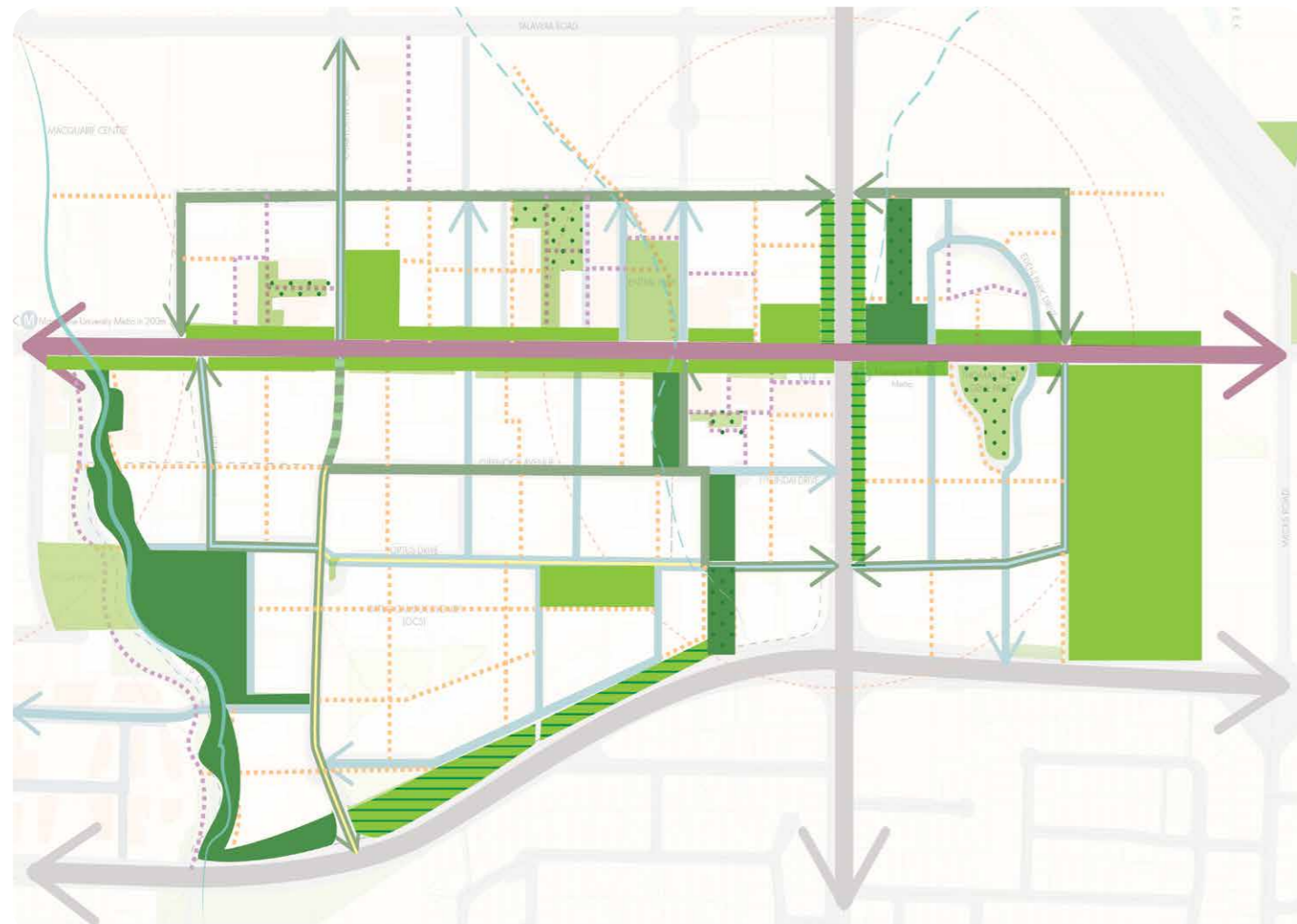
Open space includes public parks, plazas and publicly accessible privately owned spaces.

### Design Outcomes

The MPIP Master Plan proposes a generous provision of diverse open spaces for the purpose of relaxation, socialisation, recreation and connection, as well as to enhance the ecological quality and biodiversity of each neighbourhood.

The open space network seeks to:

- Complement the public domain with the Innovation Precinct
- Be usable, accessible and well connected
- Contain a high level of amenity and facilities that encourage people to dwell, as well as opportunities for social interaction
- Align with the Woven Ways of Macquarie Park
- Encourage biodiversity



### Amended Clauses

5.1	The MPIP Open Space Structure Plan identifies new public space, <b>privately-owned publicly accessible open space</b> , and augments existing public open spaces within the Corridor, to create a new open space network. The location of public open space is integrated with the street network to maximise pedestrian access opportunities <b>as well as the Woven Ways</b> . The public open space network includes a diverse range of open space including plazas, parks and natural areas along Shrimpton's Creek.
5.1	The key urban plazas included in the MPIP Stage 1 structure plan are:  North Ryde Station Precinct Square Macquarie Park Station Square - East Macquarie Park Station Square - West Macquarie University Station Square - East <b>Industrial Creek Woven Way North</b> <b>Industrial Creek Woven Way South</b>
5.1	The key public open spaces/parks included in the MPIP Stage 1 structure plan are:  Central Park North Ryde Station Precinct Central Park Shrimpton's Creek Riverside Park Thomas Holt Drive <b>Waterloo Road Park</b> <b>Drake Ave Park</b>
Fig 5.1.1	Refer to MPIP PDMP Open Space Structure Plan

### Additional Clauses

5.1	It is recommended that the delivery of the Macquarie Park Innovation Precinct Stage 1 Neighbourhoods master plan:  -Avoid biodiversity impacts, particularly to native vegetation and habitat trees containing hollows, when introducing new streets and other infrastructure.  -Enhance the Shrimpton's Creek Riparian Zone, including by delivering the new public park proposed in the master plan.  -Enhance and expand the large patch of vegetation between Optus Road and Epping Road through landscaped setback requirements.  -Require the retention of trees and patches of vegetation throughout the precinct, as important stepping stone habitat for birds and bats.  -Consider habitat enhancement in new buildings and infrastructure, such as through the inclusion of requirements for green roofs, green walls and artificial hollows in the proposed Design Guide.  -Require future development applications to undertake detailed analysis of the habitats within particular sites, including a determination of whether the 'Urban Native and Exotic' category contains Threatened Ecological Communities. (NOTE: The majority of vegetation within the study area has not been mapped to a Plant Community Type (PCT) by previous regional scale mapping products. Allocation to a PCT – or determination that the vegetation is planted – requires site investigation to validate vegetation).
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## 7.5 Public Domain

## New Open Space

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 5: Public Domain, 5.2 New Open Space

A generous provision of connected open spaces is distributed across the neighbourhood precincts, to meet the Place Strategy Open Space targets. These spaces will have a variety of scale and nature, with programming and functions that support the range of needs of the increased population and role of the precincts.

### Design Outcomes

The MPIP Master Plan creates a connected network of public transport links, which integrate with the active transport and pedestrian network to encourage less dependence on private vehicle usage.

The introduction of new open spaces:

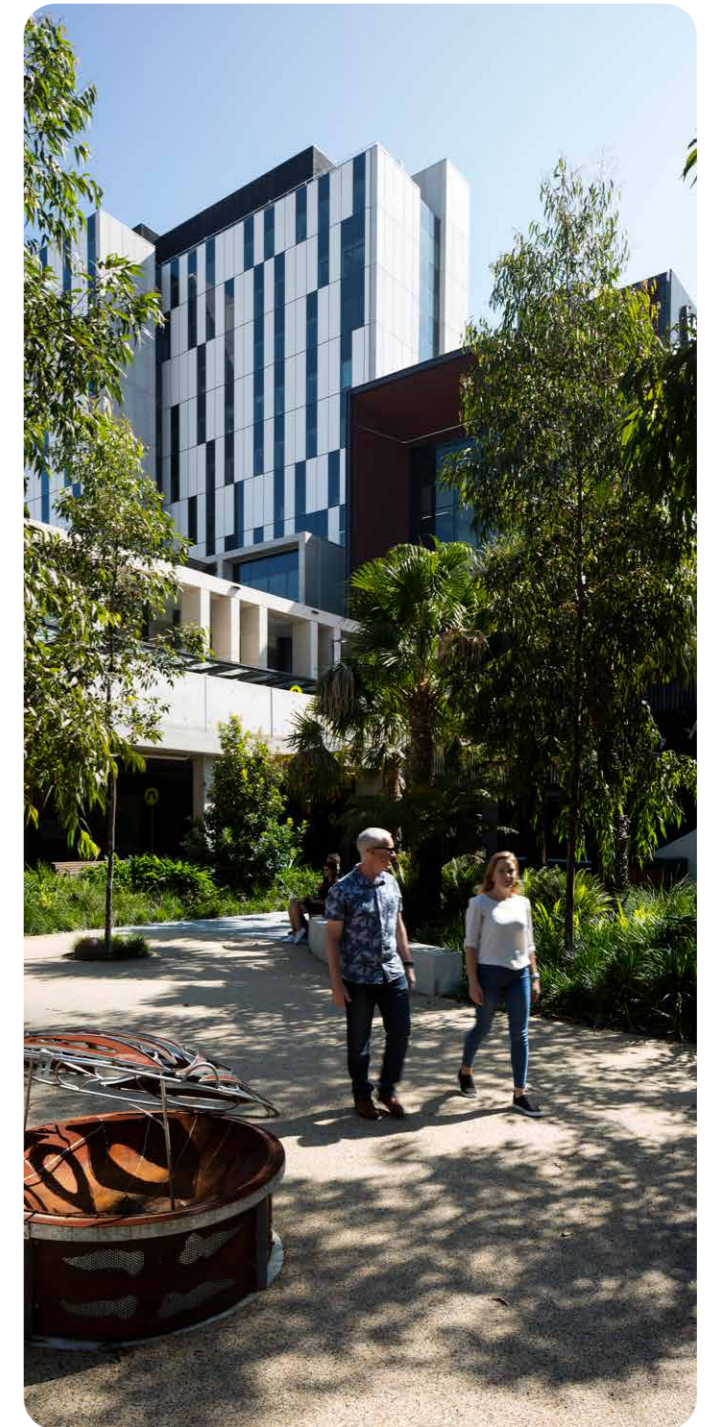
- Provides an opportunity to reconnect with Country, and respond to the site's deep culture
- Aligns with creek spaces and historic lines (Woven Ways)
- Is dispersed across all three neighbourhoods to increase the walkability to open space from key destinations
- Meets the Place Strategy targets, to provide a green network for the growing Innovation Precinct
- Provides opportunity for recreation and sport, relaxation and socialisation, work and collaboration
- Increases the biodiversity, tree canopy cover and ecological value of the neighbourhoods

### Amended Clauses

5.2O5	To contribute to storm-water and ecological management, <b>including through alignment with creek spaces and historic lines (Woven Ways)</b>
5.2a)	Provide public open space as shown in Figure 5.1.1 Proposed Open Space Network MPIP Stage 1 Open Space Structure Plan and in accordance with Sections 5.3 – 5.6 of this Part <b>the following Sections</b> (which contain specific requirements for each park).
5.2g)	At least 50% of new public space is to receive 3 hours direct sunlight between 9am and 3pm on the 21st of June.  <b>At least 50% of the new public space area is to receive 4 hours direct sunlight between 9am-3pm on the 21st of June.</b>
Table 5.2.1	Updated - see next page for amendments

### Additional Clauses

5.2O8	To connect with Country and respond to the site's deep culture
5.2k)	Tree canopy coverage target for open space is 45% (excluding courts)
5.2l)	Water Sensitive Urban Design (WSUD) to be incorporated into all new open space, with including where interfaces and aligns with existing creeks and historic lines (Woven Ways)
5.2m)	High-quality hard-scape and furniture elements that reflect the character of the neighbourhood, refer to MPIP PDMP Material Palette



Westmead Hospital, Tract

## 7.5 Public Domain

## New Open Space

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 5: Public Domain, 5.2 New Open Space

Park Name and Address	Area Dimensions	Specific Controls	Function and Indicative Character
Central Park	Refer to DCP	Refer to DCP	Refer to DCP
Waragal Birrung Parklands	<p>16,855 m2</p> <p>(WB1, WB11, WB12, WB13 &amp; WB14)</p> <p>The park layout and inclusions is to be generally in accordance with MPIP Key Place Plan 1 - Waragal Birrung Parklands</p>	<p>Refer to DCP and</p> <p>Provide active frontage in accordance with <i>Figure 7.3.2</i> proposed Active Frontages Map</p> <p>Provide landscaping that responds to the natural topography of the park (such as terraced lawns/ seating). Refer Key Place Plan 1</p> <p>Share path and 2 x informal gathering points with seating and shelter in association with outer 50% Shrimptons Creek Core Riparian Zone. 2 x cycle/ pedestrian crossing points in association with improved connectivity across Shrimptons Creek Core Riparian Zone.</p> <p>Facilitate through site access, pedestrian and cycle network in accordance with <i>Figure 4.1.1</i> MPIP Structure Plan.</p> <p>MPIP Country Principals to be reflected in design and materials. Woven Way to reference to be integrated at interface with Shrimptons Creek Core Riparian Zone.</p> <p>All existing trees are to be retained.</p> <p>Provide the following:</p> <p>Underground recycled water tank facility approx location as shown Key Place Plan 1 - Waragal Birrung Parklands .</p> <p>Multi sports space to accommodate size 2 x courts with protective fencing where necessary and court-side seating, minimum 8 benches.</p> <p>Shaded play areas x 2, combination of formal equipment integrated with nature play; minimum 10 benches; shaded fitness station (4 dynamic/ 4 static units); 2 x BBQ terrace areas - 3 x BBQ units in each area, under shelter; and 10 x picnic tables (5 Min under shelter) .</p> <p>Generally elsewhere 20 park benches, parking for 20 bicycles. Provide secondary seating terraces and seating walls throughout.</p>	<p>Refer to DCP and</p> <p>Community events, amenity block, pavilion, BBQ and picnic facilities, formal multi sports space.</p>



Barangaroo, Tract

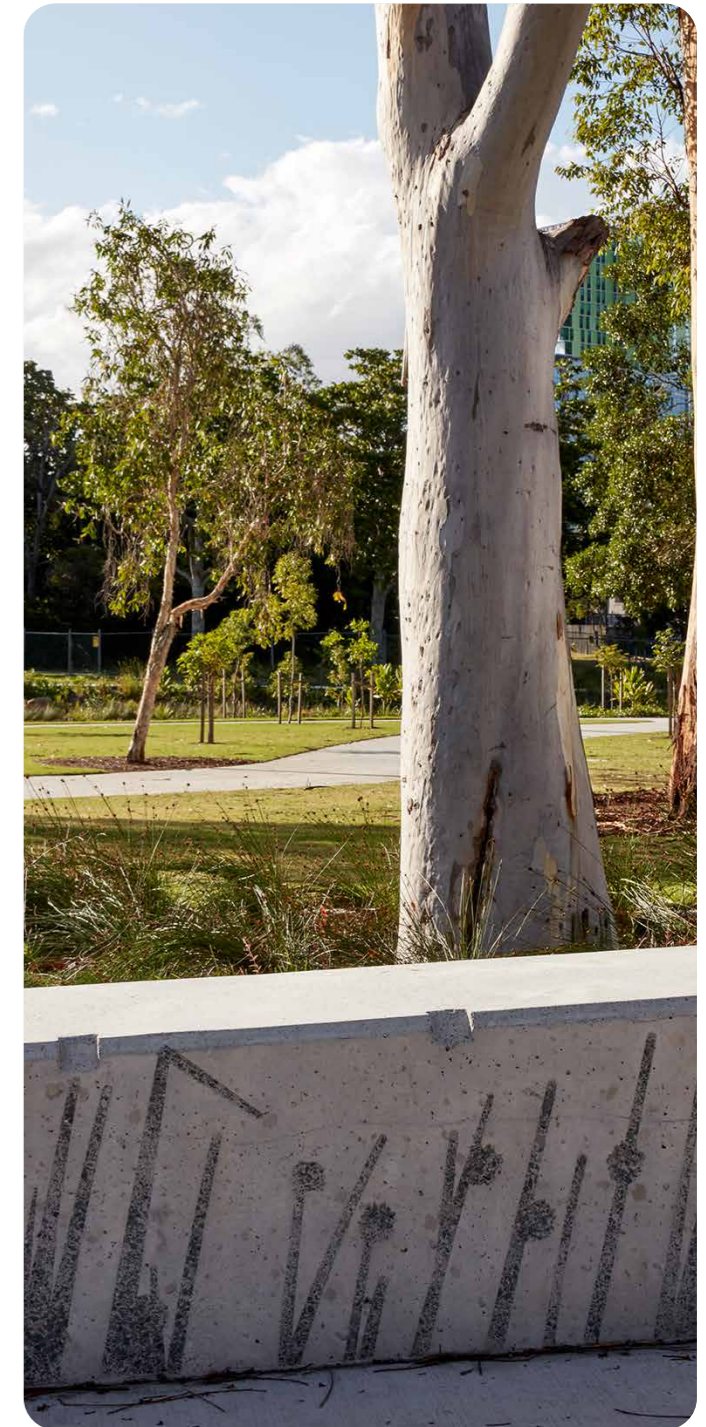


## 7.5 Public Domain

## New Open Space

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 5: Public Domain, 5.2 New Open Space

Park Name and Address	Area Dimensions	Specific Controls	Function and Indicative Character
<b>Shrimptons Creek Core Riparian Zone</b>	<i>Refer to DCP</i>	<i>Refer to DCP and</i> <b>Share path and 2 x informal gathering points in association with Waragal Birrung Parklands</b> <b>Woven Way reference to be integrated throughout.</b>	<i>Refer to DCP</i>
<b>Thomas Holt Park</b>	<i>Refer to DCP</i>	<i>Refer to DCP</i>	<i>Refer to DCP</i>
<b>Waterloo Road Park</b>	<b>7,310 m2 (BB5)</b> The park layout and inclusions is to be generally in accordance with MPIP Key Place Plan 2 - Waterloo Road Park	This park is to be located abounding Waterloo Road and Khartoum Road. MPIP Country Principals to be reflected in design and materials. Facilitate through site access and links to public transport hubs. Interface with Waterloo Road pedestrian access and public transport interchange. All existing trees are to be retained. Provide the following: 14 park benches, parking for 14 bicycles. 3 x shade shelters 1 x kiosk facility Provide outdoor eating facilities to satisfy thriving and intensely activated space, which can be adapted to suit varied volumes of users. Provide secondary seating terraces and seating walls throughout. Feature lighting	A multi function park that provides for: Passive recreation, community events, outdoor gathering and eating, kiosk/ shade structures; and Local meeting place. Has relationship with adjoining commercial ventures/ activities.



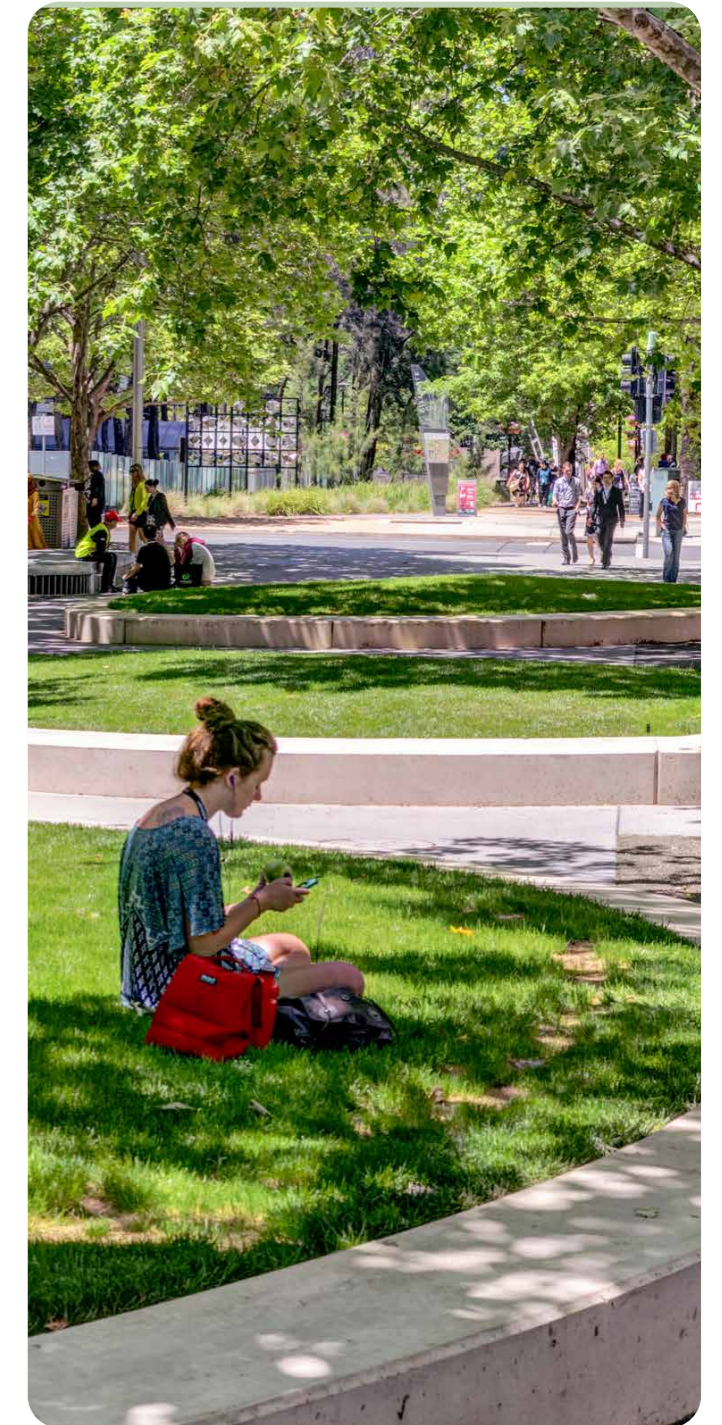
Hanlon Park, CFJ

## 7.5 Public Domain

## New Open Space

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 5: Public Domain, 5.2 New Open Space

Park Name and Address	Area Dimensions	Specific Controls	Function and Indicative Character
Drake Avenue Park	5,805 m2 (WB9B & WB16) The park layout and inclusions is to be generally in accordance with MPIP Key Place Plan 5 - Drake Avenue Park	<p>This park is to be located alongside Optus Drive extension to the north of the built form.</p> <p>Park is to be designed as one co-hesive space with an interface to Optus Drive extension streetscape.</p> <p>MPIP Country Principals to be reflected in design and materials.</p> <p>Facilitate through site access, pedestrian and interface with cycle network in accordance MPIP PDMP Structure Plan.</p> <p>All existing trees are to be retained.</p> <p>Provide the following:</p> <p>10 park benches, outdoor eating facilities for 18, parking for 10 bicycles.</p> <p>2 x BBQ/ shelter facility, 2 BBQ units in each.</p> <p>Provide secondary seating terraces and seating walls throughout.</p> <p>Feature lighting</p>	<p>A multi function park that provides for:</p> <p>Passive recreation, small community events, children's play outdoor gathering and eating, kiosk/ shade structures; and</p> <p>Neighbourhood meeting place. Has relationship with adjoining residential development to</p>
Industrial Creek Woven Way North	3,470 m2 The park layout and inclusions is to be generally in accordance with MPIP Key Place Plan 3 Industrial Creek Woven Way	<p>This park is to be located alongside Coolinga Street, between Waterloo Road and Giffnock Avenue.</p> <p>MPIP Country Principals to be reflected in design and materials. With specific Woven Way to references to be integrated and emphasised in this park space.</p> <p>Provide landscape treatments that responds to existing trees and detention function (such as sunken terraced spaces). Refer Key Place Plan 3.</p> <p>All existing trees are to be retained</p> <p>Facilitate through site access, pedestrian and interface with cycle network in accordance MPIP Structure Plan.</p> <p>6 park benches, parking for 6 bicycles. Provide secondary seating terraces and seating walls throughout.</p>	<p>A multi function WSUD park that provides:</p> <p>A storm-water detention function to provide holding capacity during storm events;</p> <p>Passive recreation, outdoor gathering; and</p> <p>Neighbourhood meeting place.</p>



City Walk Canberra, Tract

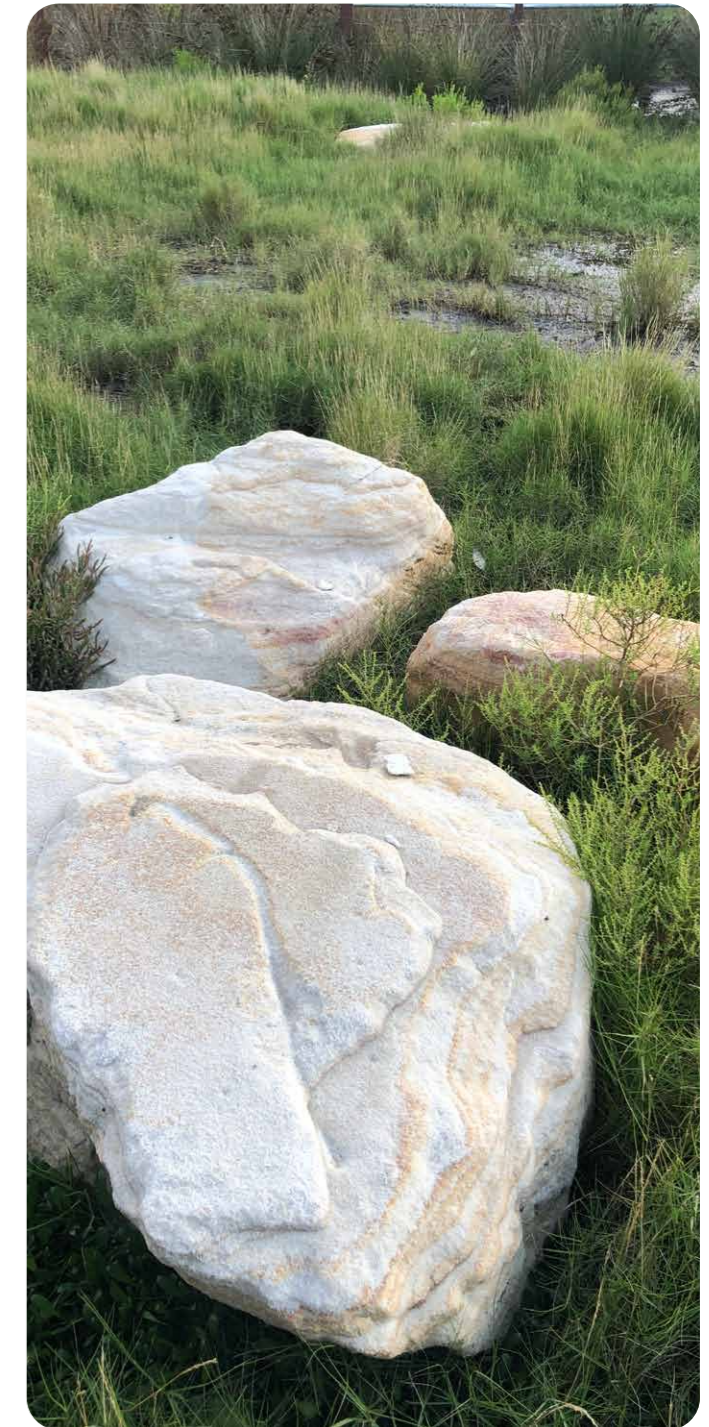
## 7.5 Public Domain

## New Open Space

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 5: Public Domain, 5.2 New Open Space

Park Name and Address	Area Dimensions	Specific Controls	Function and Indicative Character
Industrial Creek Woven Way South	2,685m2 (GN13)  The park layout and inclusions is to be generally similar to and in accordance with MPIP Key Place Plan 3 Industrial Creek Woven Way	<p>This park is to be located alongside Kitty Street, between Giffnock Avenue and Optus Drive.</p> <p>Provide landscape treatments that responds to existing trees and detention function (such as sunken terraced spaces). Refer Key Place Plan 3.</p> <p>All existing trees are to be retained</p> <p>MPIP Country Principals to be reflected in design and materials. With specific Woven Way to references to be integrated and emphasised in this park space.</p> <p>Facilitate through site access, pedestrian and interface with cycle network in accordance MPIP Structure Plan.</p> <p>6 park benches, parking for 6 bicycles.</p> <p>Provide secondary seating terraces and seating walls throughout.</p>	<p>A multi function WSUD park that provides for:</p> <p>A storm water detention function to provide holding capacity during storm events;</p> <p>Passive recreation, outdoor gathering; and</p> <p>Neighbourhood meeting place.</p>
Station Plaza Northeast	3,690m2 (GN2A)  The park layout and inclusions is to be generally in accordance with MPIP Key Place Plan 4 Station Plazas	<p>Refer to DCP 5.7 and</p> <p>This park is located alongside the north east junction of Waterloo Road and Lane Cove Road.</p> <p>MPIP Country Principals to be reflected in design and materials. With specific Woven Way to references to be integrated and emphasised in this park space.</p> <p>Facilitate through site access, pedestrian and interface with cycle network in accordance MPIP Structure Plan</p> <p>10 park benches, sheltered parking for 10 bicycles.</p> <p>Amended Clauses</p>	<p>A multifunction transit plaza and park with specific Woven Way references and focus.</p> <p>With active building frontage at all interfaces, and access to stations.</p>

Figure 5.7.4 MPIP Key Place Plan 4 Station Plazas



Harold and Bicentennial Park, Sydney

## 7.5 Public Domain

## New Open Space

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 5: Public Domain, 5.2 New Open Space

Park Name and Address	Area Dimensions	Specific Controls	Function and Indicative Character
Station Plaza Southwest	1,390m2 (GN8 & GN7A) The park layout and inclusions is to be generally in accordance with MPIP Key Place Plan 4 Station Plazas	<p>Refer to DCP 5.7 and</p> <p>This park is located alongside the south west junction of Waterloo Road and Lane Cove Road.</p> <p>MPIP Country Principals to be reflected in design and materials.</p> <p>Facilitate through site access, pedestrian and interface with cycle network in accordance MPIP Structure Plan</p> <p>All existing trees are to be retained</p> <p>10 park benches, sheltered parking for 10 bicycles.</p> <p>Amended Clauses</p> <p><i>Figure 5.7.3 MPIP Key Place Plan 4 Station Plazas South</i></p>	<p>A multifunction transit plaza and park.</p> <p>With active building frontage at all interfaces, and access to stations.</p>
Station Plaza Northwest	3,435m2 (GN1A) The park layout and inclusions is to be generally in accordance with MPIP Key Place Plan 4 Station Plazas	<p>Refer to DCP 5.7 and</p> <p>This park is located alongside the north west junction of Waterloo Road and Lane Cove Road.</p> <p>MPIP Country Principals to be reflected in design and materials. With specific Woven Way to references to be integrated and emphasised in this park space.</p> <p>Facilitate through site access, pedestrian and interface with cycle network in accordance MPIP Structure Plan</p> <p>10 park benches, sheltered parking for 10 bicycles.</p>	<p>A multifunction transit plaza and park</p> <p>With active building frontage at all interfaces, and access to stations.</p>
Station Plaza Southeast	1,385m2 (GN10) The park layout and inclusions is to be generally in accordance with MPIP Key Place Plan 4 Station Plazas	<p>Refer to DCP 5.7 and</p> <p>This park is located alongside the south east junction of Waterloo Road and Lane Cove Road.</p> <p>MPIP Country Principals to be reflected in design and materials.</p> <p>Facilitate through site access, pedestrian and interface with cycle network in accordance MPIP Structure Plan</p> <p>All existing trees are to be retained</p> <p>10 park benches, sheltered parking for 10 bicycles.</p>	<p>A multifunction transit plaza and park</p> <p>With active building frontage at all interfaces, and access to stations.</p>



Bart CA, Dan Corson

## 7.5 Public Domain

## Waragal Birrung Parklands

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 5: Public Domain, 5.4 Shrimpton Creek Park

### Design Outcomes

#### Waragal Birrung Parklands will:

- Provide an opportunity to reconnect with Country, and respond to the site's deep culture
- Revitalise creek spaces and align with historic lines (Woven Ways)
- Assist in meeting the Place Strategy targets, to provide a green network for the growing Innovation Precinct
- Provide opportunity for recreation and sport, play, relaxation, socialisation with a community focus.
- Increase the biodiversity, tree canopy cover and ecological value of the neighbourhoods



Marrickville Library, BVN



Hanlon Park, CFJ



Macquarie Park, Tract

## 7.5 Public Domain

## Station Plazas

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 5: Public Domain, 5.7 Rail Station Plazas

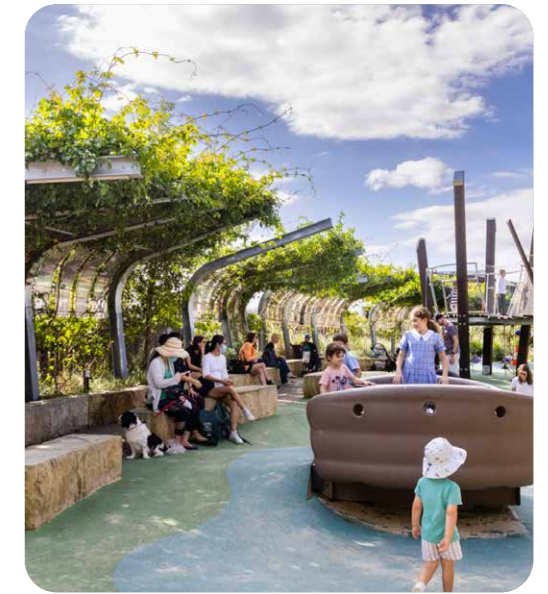
### Design Outcomes

#### The Station Plazas will:

- Provides an opportunity to reconnect with Country, and respond to the site's deep culture
- Align with creek spaces and historic lines (Woven Ways)
- Meets the Place Strategy targets, to provide a green network for the growing Innovation Precinct
- Provides transit interchange movement and connection, plus opportunities for rest, socialisation, and gatherings
- Contribute to increasing the biodiversity, tree canopy cover and ecological value of the neighbourhoods

### Amended Clauses

5.7	To contribute to storm water and ecological management, through alignment with creek spaces and historic lines (Woven Ways)
5.7i)	Provide paving, lighting bins and directional and information sign-age in accordance with Macquarie Park Public Domain Technical Manual and the MPIP Stage 1 Key Place Design
5.7l)	Refer to DCP and And refer to MPIP Stage 1 Vegetation pallet



The Canopy, Andy Roberts



Pitt Street Cycleway, Tract



Dulwich Hill Light Rail Shelter, Graham Chalcraft

## 7.5 Public Domain

## Waterloo Road Park

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 5: Public Domain, Additional Section: Khartoum Road Park

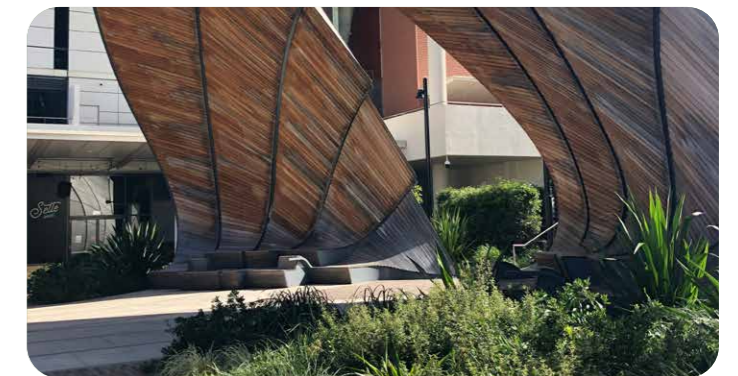
### Design Outcomes

#### Waterloo Road Park will:

- Provide an opportunity to reconnect with Country, and respond to the site's deep culture
- Assist in meeting the Place Strategy targets, to provide a green network for the growing Innovation Precinct
- Provide opportunity for socialisation, relaxations, gatherings, commercial interface, work and collaboration.
- Increase the biodiversity, tree canopy cover and ecological value of the neighbourhoods



Marrickville Library, BVN



Interchange Pavilion: Chris Fox



Bougainvillea Gdns Brookwater Source: TRACT

## 7.5 Public Domain

## Drake Avenue Park

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 5: Public Domain, Additional Section: Daunt Ave Park

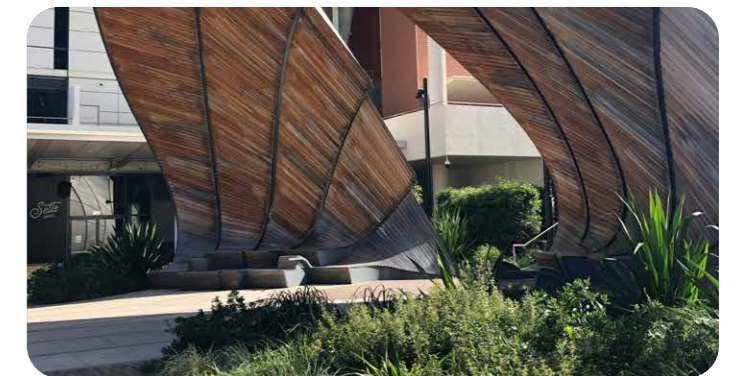
### Design Outcomes

#### Drake Avenue Park will:

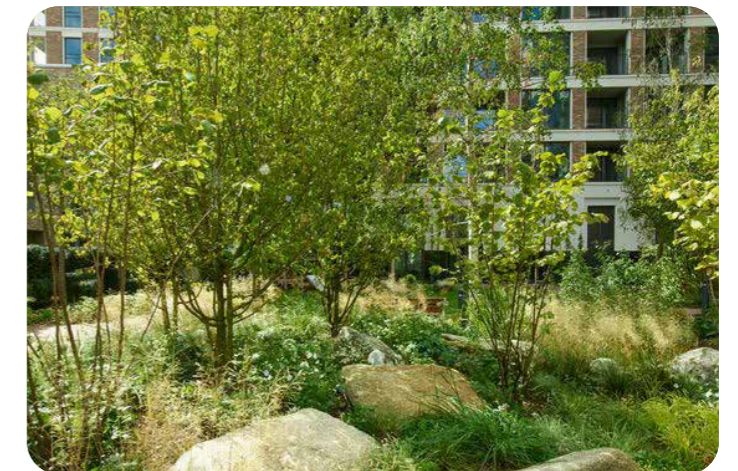
- Provide an opportunity to reconnect with Country, and respond to the site's deep culture
- Assist in meeting the Place Strategy targets, to provide a green network for the growing Innovation Precinct
- Provide opportunity for recreation, relaxation and socialisation, community connections and collaboration
- Increase the biodiversity, tree canopy cover and ecological value of the neighbourhoods



Marrickville Library, BVN



Interchange Pavilion: Chris Fox



Bougainvillea Gdns Brookwater Source: TRACT



## 7.5 Public Domain

### Street Trees, Front Setback Tree Planting, and Significant Trees

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 4: Access Network, 5.8 Street Trees, Front Setback Tree Planting, and Significant Trees

#### Design Outcomes

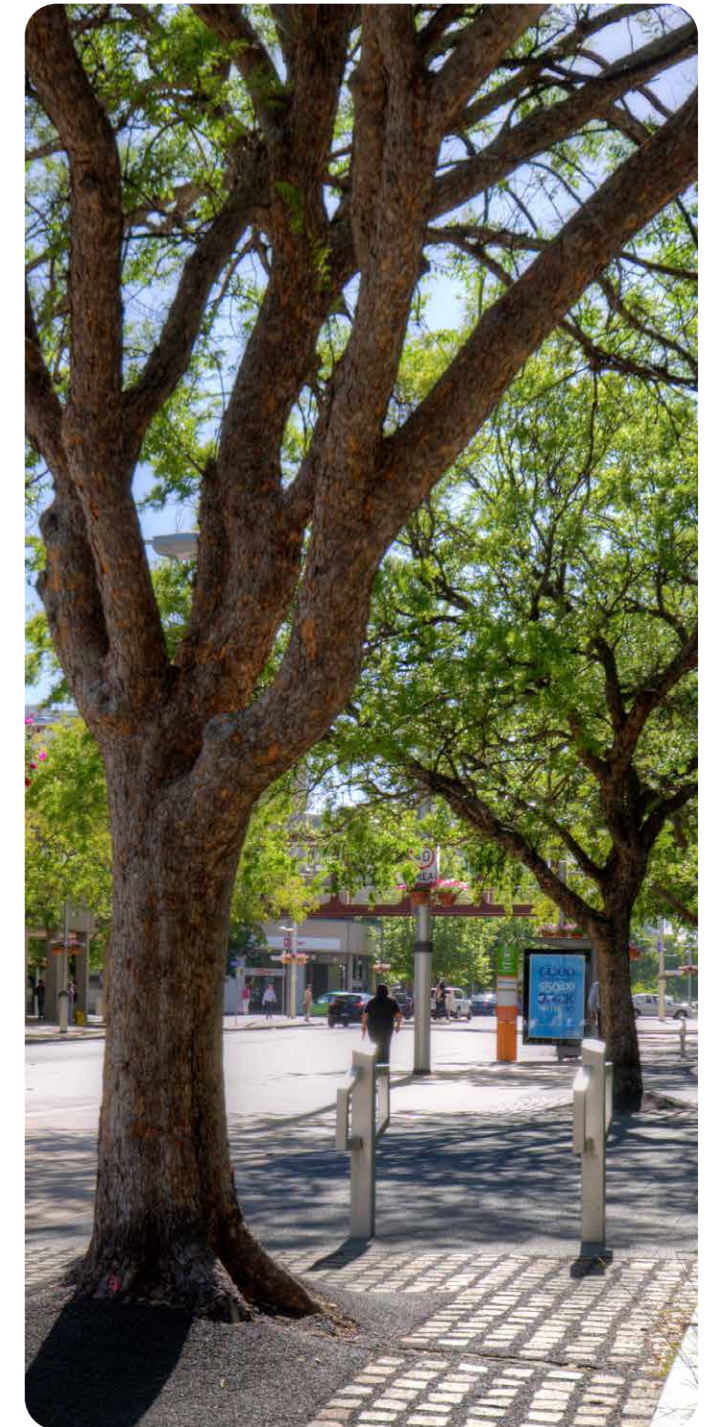
- Retention of existing trees which contribute to the existing tree canopy, character and amenity of the precincts.
- Provision of controls to ensure establishment and long term viability of healthy trees within an urban environment.

#### Amended Clauses

5.8.1	Response to the unique natural character of the Macquarie Park Corridor <b>and provides a response to neighbourhood character, with a cohesive but distinct approach in each.</b>
5.8 a)	Street trees and front setback must be provided in accordance with the Street Tree Key Plan in Macquarie Park Public Domain Technical Manual, <b>and MPIP Stage 1 Structure Plan</b> and their health guaranteed for a minimum of 5 years.

#### Additional Clauses

5.8.6	Emphasis of significant moments to allow interface of Woven Way at street junctions and park entries/gateways
5.8.7	There is a focus on the retention of existing trees, levels and layout to be considerate of site requirements for the long term health of the tree
5.8.d)	Where trees are in urban setting and not natural ground, trees will be within a deep soil, connected, well drained root zone trench, minimum 1000mm deep x 3m minimum length, connecting 3 trees at 8m centres, or have an equal allowance for soil volumes which are appropriate to their size and site conditions.
5.8.e)	Street paved surfaces over root trenches will be a porous paved material to maximise opportunities for local storm-water capture.
5.8.f)	Where trees surrounds are required to be paved/ or load bearing, structural soil will be used in association with tree root trenches.
5.8.g)	Adoption of WSUD best practice techniques generally.  Where kerbs are required around tree and garden bed edges, this will be a slotted/ broken kerb detail to maximise water run-off capture from surrounding hard surfaces.



Alinga Street Source: TRACT

## 7.5 Public Domain

## Community Facilities & Public Art

Amendments and Additions to City of Ryde DCP Part 4.5, Chapter 4: Access Network, 5.9 & 5.10

### Design Outcomes

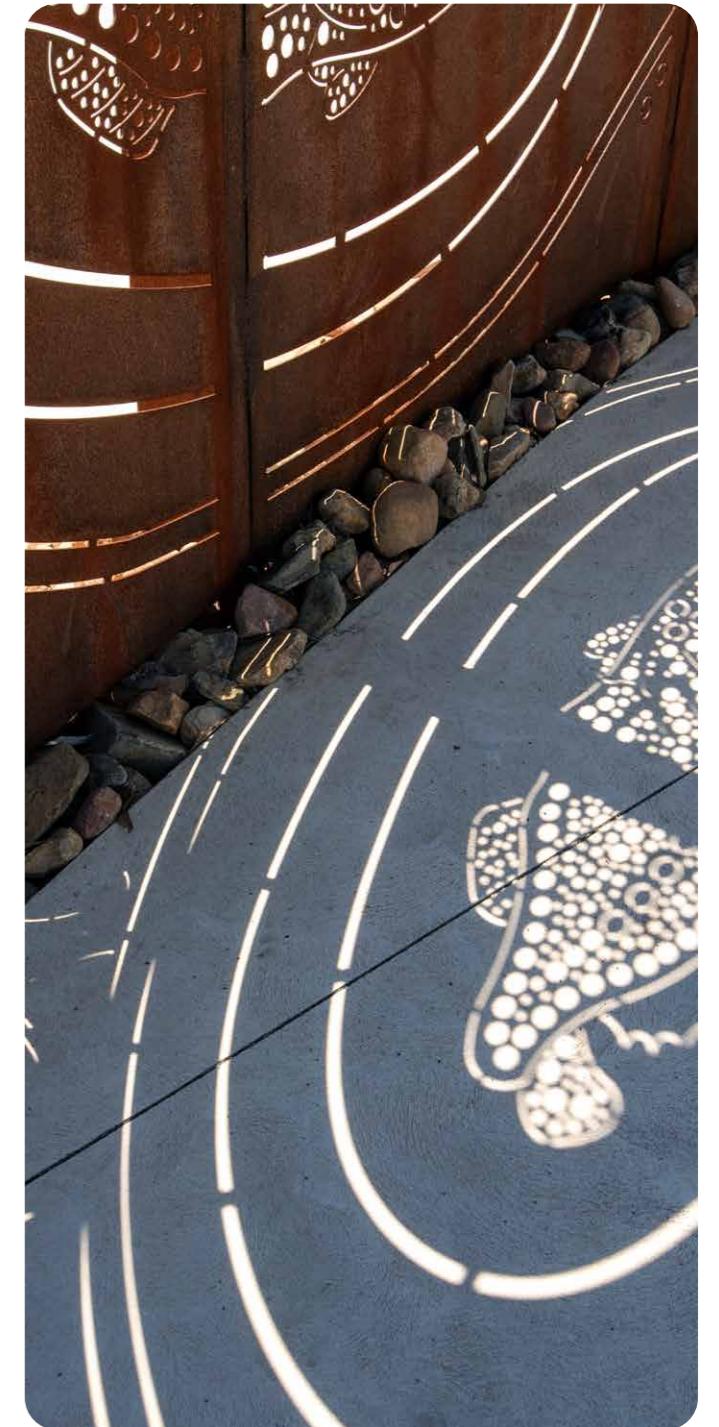
- These elements to be fully integrated with open space network, supporting neighbourhood character and understanding of precincts
- An emphasis on Country and Woven Way with benefits of precinct character, understanding, education and knowledge share.
- Form a core role in intuitive movement and experience of the precincts - Country, Journey, Arrival, Meeting, Destination, Woven Way
- Integrate Public art into a multi layered Way finding strategies that includes cultural orientation points and celebration of knowledge, language, and story.
- Opportunity exists throughout the public domain, within each open space and parks as well as part of journey through and around the neighbourhoods.

### Amended Clauses

	N/A
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### Additional Clauses

5.10.6	To ensure where artwork and spaces respond to Country, this is lead by Design with Country approach.
5.10.7	Contributes to the story of each place
5.10.c.ii	- Aboriginal stories of Country, language, knowledge and contemporary cultural references.  - Woven Way: inspiration, reflection and representation of creeks, hidden creeks and topography of Shrimptons Creek, Industrial Creek and Porters Creek



NRAH Adelaide, Tract

# Appendices

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## Appendix A Canopy Cover - Technical Study

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# Canopy Cover Studies

## Tree Canopy Assessment

Methodology for tree canopy assessment is outlined here to provide a transparent process and demonstrate the assumptions made to arrive at the percentage cover across the precinct.

The Public Domain Plan includes an overall Precinct assessment in accordance with Draft Greener Places Design Guide approach as follows:

**“How to measure urban tree canopy:** Canopy refers to the extent of an individual tree crown (including branches and leaves) or the combined canopy area of a group of trees. A common method for determining the amount of urban tree canopy is to measure the area of canopy as a percentage of total land area. This allows government authorities to understand changes in tree canopy over time.” Draft Greener Places Design Guide

This Appendix provides further breakdown to allow a focus on the public domain spaces and understand the percentage canopy cover which can be achieved within each of the Street Typologies and Key Places open spaces.

Currently a maximum mature canopy spread is used to assess the ultimate tree canopy coverage, however there are many aspects to the reality of achieving this. The table shared here shows settings and assumptions made, with the intention being to provide the information and allow for on-going conversation and evaluation of the assumed canopy spread.

Assumptions are made with regard growth achieved over time, this being based upon industry standard expectations, an optimum micro climate and planting environment, care during establishment and inclusion of best practice root zone conditions. With approach assumed to create the best case scenario for future growing conditions.

Selecting the right tree species is also a key priority. While acknowledging this may differ in response to future climatic conditions, this aspect is still subject to current investigations. There is on-going debate regarding the studies outcomes and how this might influence tree selections while also meeting ecological requirements as well as streetscape amenity and visual expectations.

AGE OF TREE	JUVENILE 0-5 years	SEMI-MATURE 5-10 years	EARLY MATURE 10-20 years	MATURE 20 years +
DESCRIPTION	Sapling tree and/ or recently planted.	Tree increasing in size, early development. Assume 25-50% of mature canopy size	Tree established, growing well in location Assume 75% of mature canopy size	Reaching expected size in situation, incremental growth reduced now on. Assume 100% of mature canopy size
Small tree	2m	3m	6m	8m
Medium tree	2m	5m	8m	10m
Large tree	2m	5m	10m	12m

# Canopy Cover Studies

# Streets

Indicative tree canopy cover calculations have been undertaken for each "Typical Street" typology to inform potential future benefits and ultimate growth.

Canopy cover percentage is calculated by determining the ratio of canopy cover area to the study area as a percentage

$$\left( \frac{\text{canopy cover area (m}^2\text{)}}{\text{study area (m}^2\text{)}} \right) \times 100 = \text{canopy cover percentage (\%)}$$

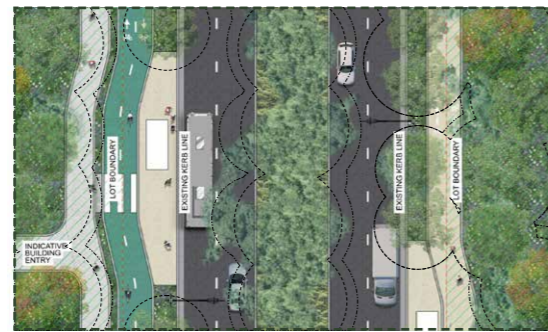
Small-medium trees starting are considered to reach a maximum canopy diameter of 8m

Medium-larger trees considered to reach 10m diameter at 'Medium Growth' and 12m diameter at 'Mature/ Maximum' size.

- Study Area
- Medium Growth Size
- Mature/ Maximum Size

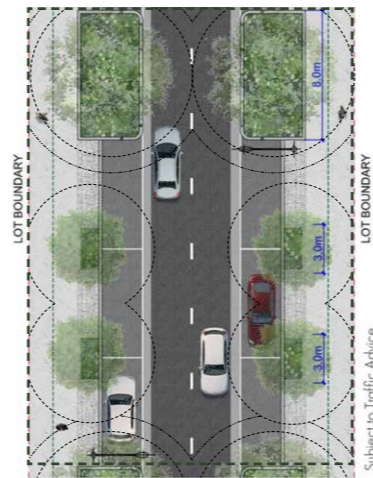
Typical Plan 1 - 30m Waterloo Rd

Tree Size	Canopy Cover
Initial/ Planting Size	47.82%
Medium Growth	65.53%
Mature/ Maximum	72.09%



Typical Plan 2 - 20m Secondary Circulation Route

Tree Size	Canopy Cover
Initial/ Planting Size	31.86%
Medium Growth	62.37%
Mature/ Maximum	67.33%



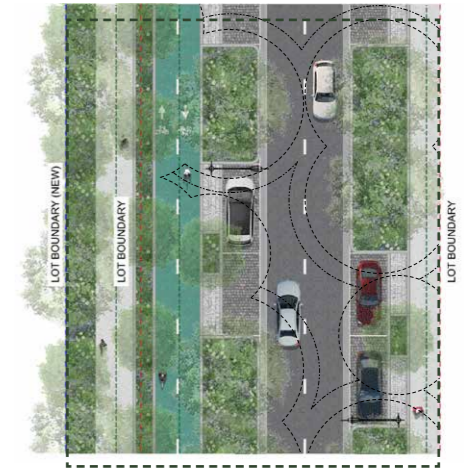
Typical Plan 3 - 20m Green Boulevard Reserve

Tree Size	Canopy Cover
Initial/ Planting Size	70.99%
Medium Growth	93.92%
Mature/ Maximum	96.41%



Typical Plan 4 - 25m Secondary Green Boulevard

Tree Size	Canopy Cover
Initial/ Planting Size	51.90%
Medium Growth	78.63%
Mature/ Maximum	82.16%



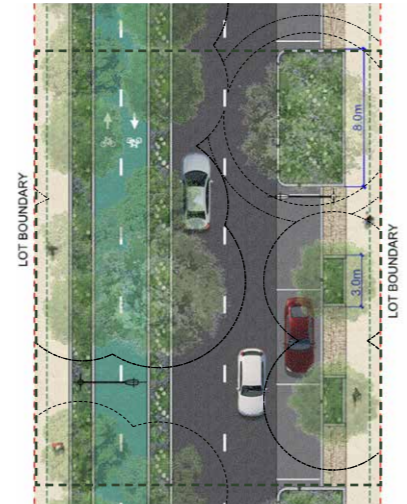
Typical Plan 4 - 20m Interim Option

Tree Size	Canopy Cover
Initial/ Planting Size	46.15%
Medium Growth	69.46%
Mature/ Maximum	72.76%



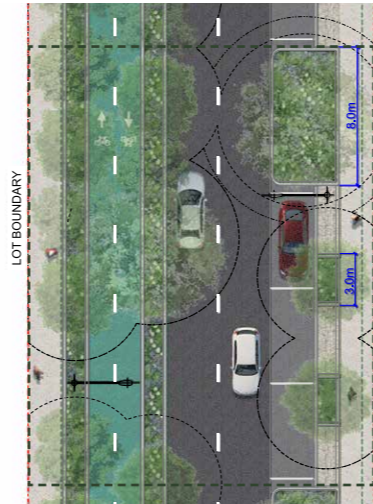
Typical Plan 5 - 20m Local Street

Tree Size	Canopy Cover
Initial/ Planting Size	55.81%
Medium Growth	82.37%
Mature/ Maximum	85.38%



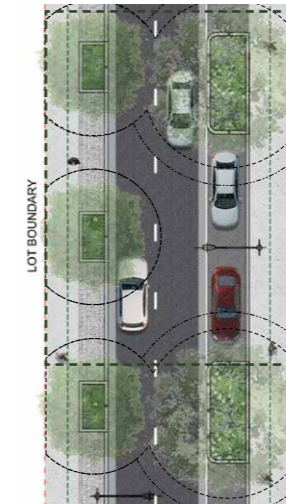
Typical Plan 6 - 20m Secondary Circulation Route

Tree Size	Canopy Cover
Initial/ Planting Size	54.17%
Medium Growth	77.41%
Mature/ Maximum	79.85%



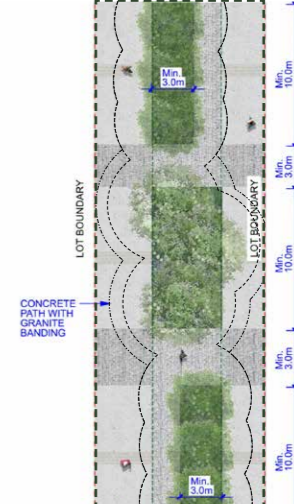
Typical Plan 7 - 14.5m Local Street

Tree Size	Canopy Cover
Initial/ Planting Size	46.41%
Medium Growth	57.49%
Mature/ Maximum	65.54%



Typical Plan 8 - Pedestrian Through-Site Link

Tree Size	Canopy Cover
Initial/ Planting Size	38.93%
Medium Growth	65.84%
Mature/ Maximum	73.53%



# Canopy Cover Studies

Canopy cover has been calculated for Key Places 1-5 using the same methodology, indicating maximum/ mature growth

# Open Space

**Key Place Plan 1 -  
Waragal Birrung Parklands**

Tree Size	Canopy Cover
Mature/ Maximum	55.49%



**Key Place Plan 2 -  
Waterloo Road Park**

Tree Size	Canopy Cover
Mature/ Maximum	69.11%



**Key Place Plan 3 -  
Industrial Creek Woven Way**

Tree Size	Canopy Cover
Mature/ Maximum	80.84%



**Key Place Plan 4 -  
Station Plazas**

Tree Size	Canopy Cover
Mature/ Maximum	57.93%



**Key Place Plan 5 -  
Drake Avenue Park**

Tree Size	Canopy Cover
Mature/ Maximum	74.19%



## Contact Tract

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