

City of Ryde Public Domain Technical Manual

Chapter 6: Macquarie Park Corridor

Translation

ENGLISH

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ARABIC

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ITALIAN

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KOREAN

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Amend. No.	Date approved	Effective date	Subject of amendment
1	21 January 2016	21 January 2016	<p>Revised structure and updated provisions for consistency with Part 4.5 Macquarie Park Corridor of the Ryde Development Control Plan 2014 (as amended in June 2015).</p> <p>Other key amendments include:</p> <ul style="list-style-type: none"> • Addition of a new Open Space Network section to provide high-level design guidance relating to the function and character, paving and finishes, trees and landscaping, and lighting for public open space within Macquarie Park • Addition of a new Art in Public Spaces section to guide and encourage the incorporation of artworks in the public domain • Deletion of certain technical details that are addressed in relevant design guides and associated documents to remove repetition and ensure consistency

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1.0 INTRODUCTION

1.1 Purpose

This Manual has been prepared by City Of Ryde to support the provisions of the *Ryde Local Environmental Plan 2014* (RLEP) and the *Ryde Development Control Plan 2014* (RDCP) in order to promote the revitalisation of the Macquarie Park Corridor. This document provides urban design guidelines and relevant information to assist developers and Council in undertaking public domain works within the Corridor.

1.2 What is the Public Domain?

Within the context of this document, the public domain represents all urban and natural elements, structures, and spaces that exist within the publicly-owned areas of the Ryde town centres and the relationship between them. The public domain also includes many privately-owned arcades, building forecourts, internal walkways, and other semi-public spaces as they also influence the overall character of the public domain.

1.3 Objectives of this Manual

The objectives of this manual is consistent with the *City of Ryde 2025 Community Strategic Plan* outcomes of Liveable Neighbourhoods, City of Connections, and City of Prosperity. This manual aims to establish a framework of design principles to guide the improvement of the public domain within the local centres. The main objectives are to:

1. Promote design solutions that enhance the amenity and character of the local area for residents, visitors, businesses, and other users.
2. Encourage the development of spaces that are attractive, well-used, robust, and safe for all users.
3. Provide new connections for better access and improved pedestrian and vehicular networks in centres.
4. Create flexible public spaces that will encourage diverse and different uses over time.
5. Encourage social interaction, a range of sensory experiences, and functionality through high-quality design.
6. Protect Macquarie Park's landscape character and acknowledge its natural heritage.
7. Promote the seamless integration of the public and private domains.
8. Encourage sustainable environmental practices in town and neighbourhood centres within the City of Ryde.
9. Promote outdoor dining and street activation by improving pedestrian amenity and access to outdoor dining areas.

1.4 How to Use this Manual

This manual is to be used to inform the design of proposed public domain works in order to:

1. Influence the understanding of the site context, including infrastructure needs and desired future character;
2. Guide design and development decisions to ensure seamless integration of the public and private domain; and
3. Inform the choice of materials, street furniture, tree planting and landscaping, and other streetscape elements to be used within the Macquarie Park Corridor.

This document is to be read in conjunction with the *Ryde Local Environmental Plan 2014*, *Ryde Development Control Plan 2014* (4.5 Macquarie Park Corridor), and relevant supporting Technical Guidelines and associated documents (listed in Table 1.6.1).

This Manual is to be reviewed annually or as required by Council to ensure its consistency with relevant State and local planning controls and standards.

Note: All proposed works covered by this Manual, including civic works relating to the open space network, are subject to the approval of the Manager Strategic City and/or Manager Asset Systems.

1.5 Structure of this Manual

This manual is comprised of the following sections:

Section 1: Introduction

This section details the purpose and objectives of this Manual, its use, and its relationship with relevant technical guidelines and associated documents. This section also provides an overview of the planning framework for Macquarie Park and its existing and desired future character.

Section 2: Design Principles

This section provides design principles to guide the development of the public domain within the Corridor.

Section 3: Access Network

This section provides a framework for the public domain access network including key objectives, strategies, and specifications for paving, street trees, street furniture, and fixtures.

Section 4: Open Space Network

This section provides a framework for the public domain open space network including key objectives, strategies, and specifications for paving, tree planting and landscaping, furniture, and fixtures.

Section 5: Public Art

This section provides information to guide the integration of artworks in the public domain to establish a distinct identity and character.

Section 6: Typical Layouts

This section provides information regarding the typical arrangement of streets with reference to streetscape elements including street lighting, tree planting and landscaping, street furniture, and fixtures.

1.6 Design Guides and Associated Documents

This manual is to be read in conjunction with the following design guides and associated plans and documents:

Table 1.6.1 Design Guides and Associated Documents

Document	Description
Design Guide for Streets	Guidelines to assist the design and construction of streets including paving, kerbing, driveways, etc.
Design Guide for Council-owned Street Lighting	Detailed guidelines for the design and installation of Council-owned street lighting, including multi-function light poles specifications, street lighting layout, and requirements for plan submission.
Street Lighting Schema for the Macquarie Park Business Area	Diagram to inform street lighting designers about the proposed configuration of the street lighting network owned by Council, including circuit zones for metering purposes.
Design Guide for Public Open Space	Guidelines to assist in the design and construction of parks including paving, landscaping, embellishment, and other associated public domain works.
Outdoor Dining Policy	Policy applying to land owned or under the care, control, and management of Council. Outlines Council's requirements for outdoor dining including having a minimum area of 4 square metres and maintaining a clear unobstructed pedestrian corridor (2 metres in width).
Shrimptons Creek Parklands Plan of Management	Sets out the vision for Shrimptons Creek Parklands to recognise the creek-line as an environmental and recreational spine in the City of Ryde. The parklands is also envisioned to provide clear connections to adjacent urban environments without compromising their natural character.
Ryde Street Tree Master Plan	Informs and guides all street tree planting and assists the City of Ryde and the community in managing and expanding the urban forest.
Ryde Bicycle Strategy	A comprehensive plan for improving the environment for people who ride bicycles for transport, health, and fitness to facilitate increased active transport patronage within the City of Ryde over the next 10 years and beyond.
Macquarie Park Pedestrian Access and Mobility Plan	Provides a framework for developing safe and convenient pedestrian routes and fostering improvements in personal mobility.
Ryde Public Art Policy	Provides a framework for the delivery and administration of public art in the City of Ryde.

1.7 Macquarie Park Planning Framework

This document is consistent with the provisions of the following :

- *Ryde Local Environmental Plan 2014* (RLEP)
- *Ryde Development Control Plan 2014* (RDCP) - Part 4.5 Macquarie Park

The RLEP and RDCP set out the broad framework for development within the Macquarie Park Corridor. This includes the expansion of the public domain to cater for people who will live, work, and visit Macquarie Park as it evolves from a business park that was established in 1960s to an urban centre supported by public transport and public domain infrastructure. The framework for the future public domain comprises:

- An Access Network that identifies and coordinates the delivery of proposed new roads and pedestrian ways.
- An Open Space Network that identifies new parklands and urban plazas.

Development in the Macquarie Park Corridor must occur within the framework of the objectives and controls of the RDCP 2014, which relate to the street layout, size and shape of city blocks, open spaces, and built form. The synthesis of these elements will define the public domain and strengthen the existing character and identity of the Corridor.

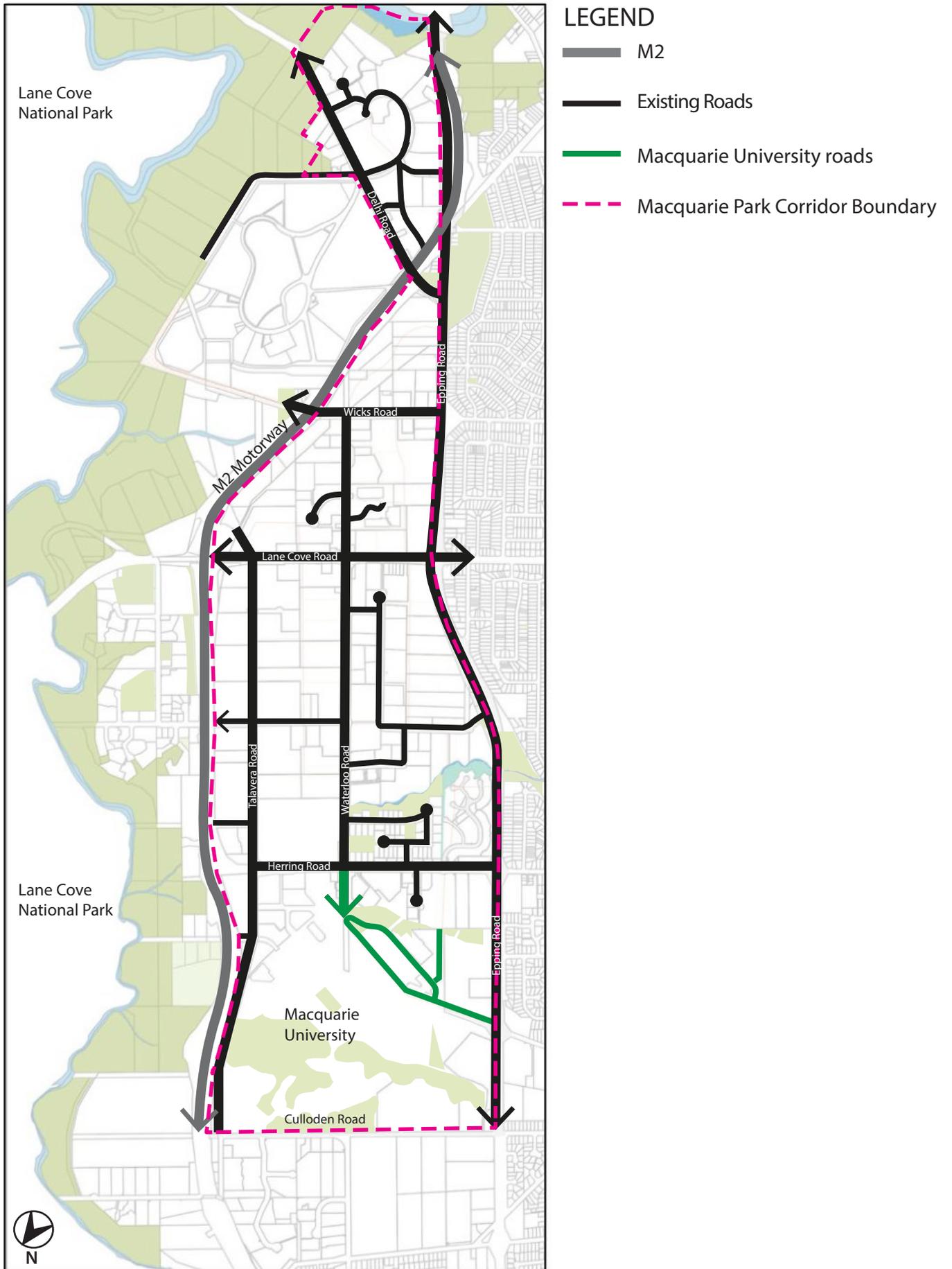


Figure 1.5.1 Macquarie Park Corridor Boundary and Existing Road Network

1.8 Macquarie Park Corridor Character

Existing Character

The Macquarie Park Corridor is located 12 kilometres from Sydney CBD and 13 kilometres from Parramatta CBD, with over 200 hectares of mixed use, commercial, and business land use. It is a nationally significant economic corridor for research and business, specialising in the communications, medical research, pharmaceutical and IT&T sectors.

The Corridor has three railway stations and access to bus transport, but there are limited linkages between existing roads and the surrounding road network. The urban structure is characterised by wide streets and large street blocks with a commercial core centered around Macquarie Park Station and Waterloo Road, a retail core anchored on Macquarie Shopping Centre, an educational and health precinct comprising Macquarie University and Macquarie Hospital, business park areas, and protected vegetation in the Lane Cove National Park and Shrimptons Creek.

Vision

The Macquarie Park Corridor is envisioned to mature into a premium location for globally competitive businesses with an enhanced sense of identity and strong links to the university and research institutions.

Desired Future Character

The Macquarie Park Corridor will be characterised by a high-quality, well-designed, safe, and liveable environment that reflects the natural setting. The Corridor will have accessible and vibrant focal points around the three railway stations and enhanced access and open space network to support its continuous commercial and business growth and the planned residential communities centred on the North Ryde Station and Macquarie University Station Priority Precincts.

The implementation of the RDCP 2014 and this document will guide development to achieve the vision and desired future character for the Macquarie Park Corridor through improved vehicular, pedestrian, and cycle permeability and connectivity to surrounding centres and regional open spaces.

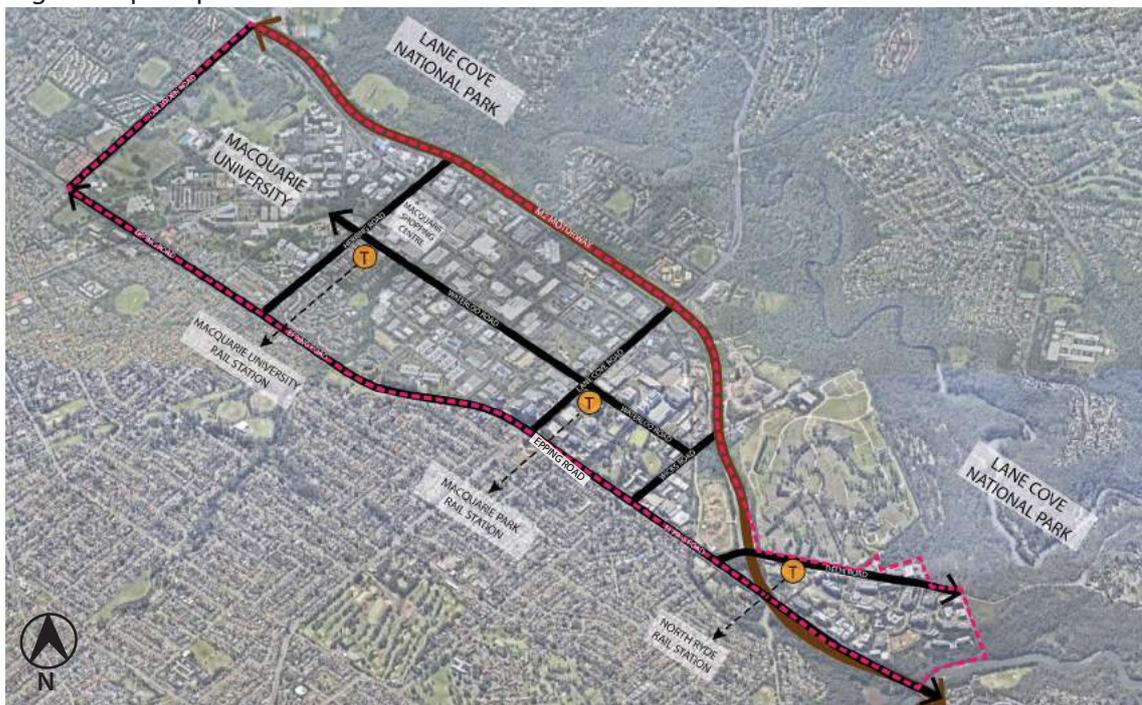


Figure 1.8.1 Macquarie Park Corridor - Aerial Photo (December 2015)

2.0 DESIGN PRINCIPLES

Promoting pedestrian access is central to the design of the public domain and increases opportunities for social interaction and community life. Streets and public spaces should be comfortable, safe, and engaging places that encourage people to stay. Pedestrian routes to and within Macquarie Park should be designed to be accessible to everyone, promote walking, and reduce conflict between pedestrians, bicycles, and cars.

Public art, trees, directional signage, and street furniture should be incorporated into streets and public spaces as they not only contribute to the visual and spatial quality of the public domain but also improve the human experience by providing amenities such as shade, seating, and wayfinding. Sustainability outcomes can also be promoted in streets, parks, and urban spaces by including street trees where possible and implementing measures to harvest and reuse water.

The following key principles guide the design and development of public spaces within the centres of the City of Ryde:

Liveability

- Create spaces that provide a desirable setting and backdrop for social interaction and a variety of activity
- Provide unified streetscapes that are high-quality, durable, and timeless in design
- Eliminate level changes and obstructions and promote consistent paving patterns as much as possible

Active Transport

- Prioritise pedestrian amenity by providing opportunities to expand the public domain
- Eliminate pedestrian, cycle, and vehicle conflict as much as possible
- Provide amenities such as seats, shelter, and bike racks to support pedestrian and bicycle use

Landform and Views

- Retain and/or reveal significant views from the public domain to waterways, heritage items, and significant sites
- Identify significant views and consider them in the selection and placement of public art, street trees, and furniture

Trees

- Integrate tree and landscape treatments to provide shade, interest, and amenity as well as unify streetscapes
- Create green corridors with increased tree planting and landscape treatments to reduce the extent of hard surfaces and increase canopy cover, biodiversity, and microclimate

Public Art

- Create public art that aids legibility and defines a sense of place and identity
- Provide visual interest to everyday activities and social gatherings

Water Sensitive Urban Design

- Collect and reuse stormwater for watering street trees and landscape elements where possible
- Treat stormwater as close to the source as possible
- Collect and treat stormwater in bio-retention tree pits and/or rain and filter gardens that are seamlessly integrated with the design of the public space

Safer by Design

- Ensure that all publicly accessible pathways have sufficient width, lighting, and finishes to enhance public safety
- If possible, pathways should be adjacent to active spaces to improve amenity and safety
- If possible, locate pathways where conflicts with vehicular traffic are avoided

Equitable Access and Use

- Enable equitable and safe access for people of all ages and abilities in accordance with the *Building Code of Australia (BCA)* and the *Disability (Access to Premises – Buildings) Standards (Premises Standards) - AS 1428*.
- Ensure continuous accessible paths of travel and circulation spaces and appropriate facilities for people who use wheelchairs and people who have ambulatory and sensory disabilities

3.0 ACCESS NETWORK

3.1 Streets Hierarchy

Objectives

- Improve pedestrian, cycle, and vehicular accessibility and permeability to and within the Macquarie Park Corridor
- Establish a clear hierarchy of public streets within the corridor
- Accommodate increased traffic movement within the corridor
- Provide additional opportunities for on-street car parking

Strategy

The planning controls reinforces Waterloo, Herring, Talavera, and Lane Cove Roads as the principal streets within the Macquarie Park Corridor. In particular, the permissible height and FSR will see Waterloo and Herring Roads develop as main streets with a boulevard character. The network of existing streets will be augmented by proposed new streets to create an access network that aims to substantially improve traffic congestion and create a more permeable and amenable public domain for pedestrians and cyclists. The access network will also provide better access to parks and significant public places within the Corridor.

The hierarchy of existing and proposed new streets that comprise the access network is detailed below:

Table 3.1.1 Street Hierarchy - Primary and Secondary Streets

Existing Streets Hierarchy	Carriageway	Approx. Road Reserve Width
Primary		
Epping Road	26 metres (varies)	40 metres
Lane Cove Road	26 metres	30 metres
Herring Road	23 metres	30 metres
Waterloo Road (between Lane Cove and Herring Roads)	20 metres	30 metres
Delhi Road	12 metres (varies)	30 metres
Secondary		
Talavera Road	16 metres	25 metres
Khartoum Road (between Talavera Road and M2 Motorway)	14 metres	25 metres
Khartoum Road (between Talavera and Waterloo Roads)	12 metres	20 metres
Byfield Street	12 metres	22 metres
Lyon Park Road	12 metres	21 metres
Wicks Road	12 metres	20 metres
Waterloo Road (between Lane Cove and Wicks Roads)	12 metres	20 metres
Eden Park Drive	12 metres	20 metres
Coolinga Street	11 metres	20 metres
Giffnock Avenue	11 metres	20 metres

Table 3.1.2 Street Hierarchy - Tertiary and New Streets and Connections

Existing Streets Hierarchy	Carriageway	Approx. Road Reserve Width
Tertiary		
Rivett Road	8 metres	12 metres
Richardson Place	8 metres	12 metres
Julius Avenue	12 metres	18 metres
Residential Character		
Windsor Drive	13 metres	22 metres
Peachtree Road	11 metres	21 metres
Lachlan Avenue	10 metres	20 metres
Cottonwood Crescent	15 metres	20 metres
Proposed New Streets and Connections Hierarchy		
20-metre wide streets	11 metres	20 metres
14.5-metre wide streets	8.5 metres	14.5 metres
Pedestrian connections	2 metres (path)	6 metres

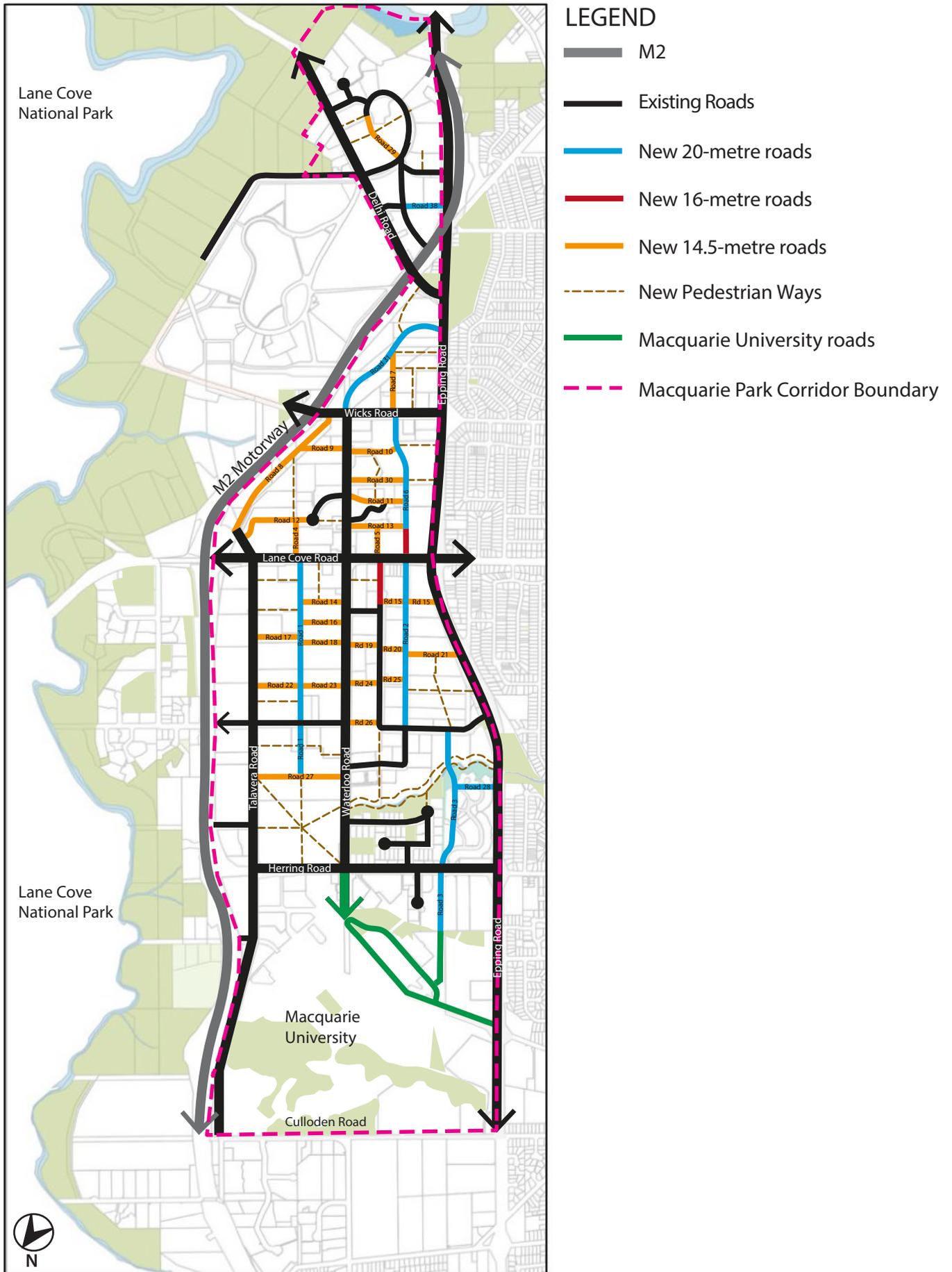


Figure 3.1.1 Macquarie Park Corridor Road Types Plan

3.2 Access Network - Paving

Objectives

- Create a visually seamless and unified public domain
- Utilise robust and durable materials with a consistent colour and finish to create a visually consistent ground plane
- Achieve a safe and convenient pedestrian environment that encourages social interaction and active transport, in accordance with the objectives of the Macquarie Park Corridor DCP

Strategy

The strategy for paving is to create a clear and coherent public domain finish that provides a unified and recognisable character and ensures the amenity of pedestrians and cyclists alike. Paving materials have also been selected for ease of maintenance, durability, and robustness.

The paving specifications reflect the local context, scale of streets, and their role within the access network hierarchy. For example, full-width granite paving on majority of Waterloo Road reflects its role as the central civic spine and as a primary pedestrian route that links the rail stations. The same paving treatment also applies for Lane Cove Road, Herring Road, and Talavera Road, in lieu of their desired future character and role within the access network hierarchy. The paving treatment for Epping and Delhi Roads responds to their local context where the width of the verge varies significantly. The paving specifications are further detailed below:

Table 3.2.1 Paving Specifications for New and Existing Streets

Location	Description	Specification	Reference
New 20-metre wide street	To be dedicated to Council	Granite paving - full width footway	Section 6.1
New 16-metre wide street	To be dedicated to Council	Granite paving - full width footway	Section 6.2
New 14.5-metre wide street	To be dedicated to Council	Granite paving - full width footway	Section 6.3
New pedestrian ways	Subject to easement or right of way as required by Council	Concrete paving with granite banding	Section 6.5
Existing primary streets (Epping and Delhi Roads)	30 to 40 metres wide overall	Granite paving (2.4 metres) with nature strip	Section 6.6.1
Existing Mixed Use, Commercial, or Business Character	18 to 25 metres wide overall	Granite paving - full width of the verge The footway may vary between 2 to 5 metres	Section 6.6.2
Existing residential streets	12 to 20 metres wide overall	Granite paving (2.4 metres; varies) with nature strip	Section 6.6.3

Note: The verge refers to the area between the kerb and property boundary

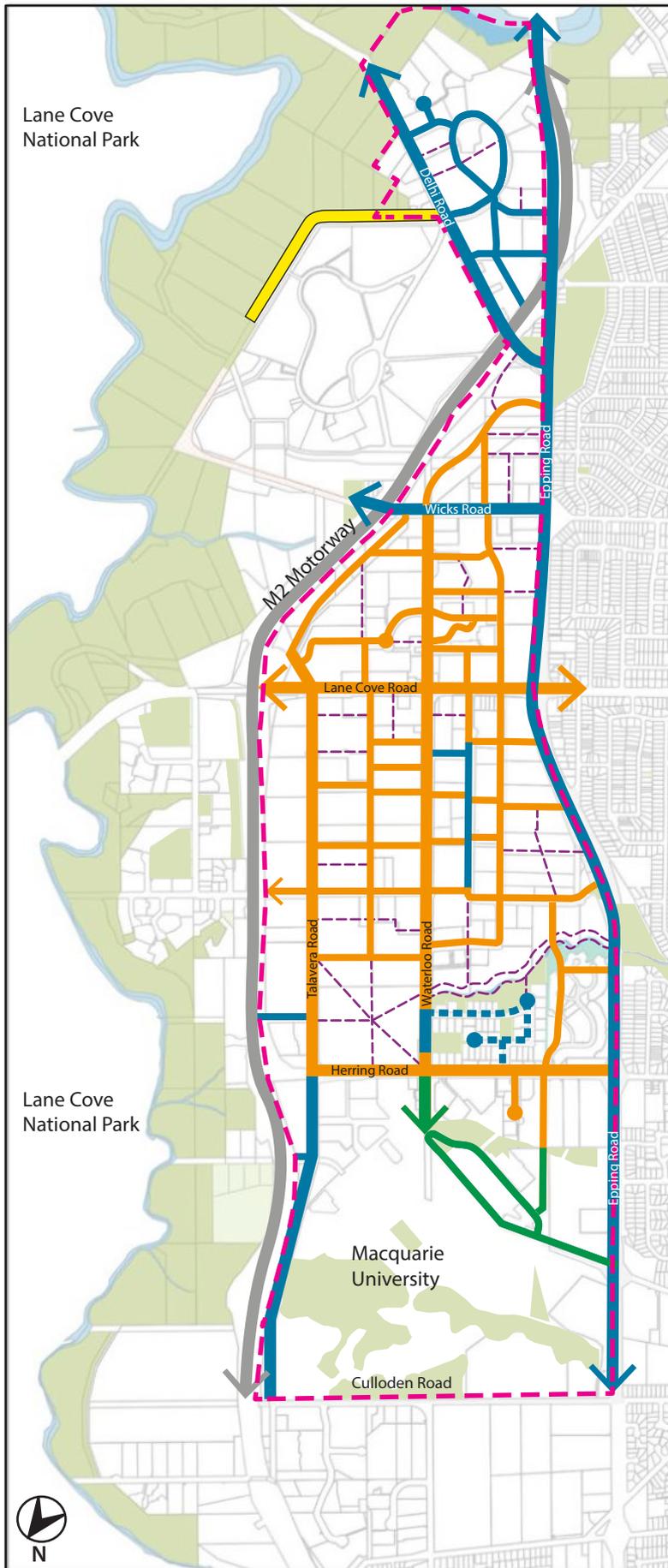
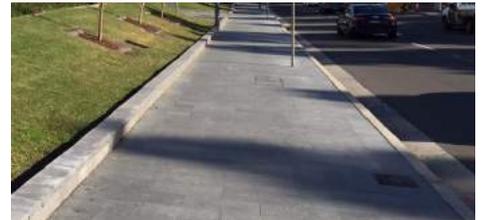


Figure 3.2.1 Macquarie Park Corridor Paving Plan

LEGEND

- M2
- Full-width granite paving
- 2.4-metre wide granite paving with nature strip
- Up to 2.4-metre wide (varies) granite paving with nature strip
- Pedestrian ways - concrete with granite banding
- Concrete path
- Macquarie University roads
- Macquarie Park Corridor Boundary

Full-width granite paving



E.g. Lane Cove Road

2.4-metre wide granite paving with nature strip



E.g. Epping Road

Concrete with granite banding



E.g. Quarry Road

Concrete path



E.g. Plassey Road

3.3 Access Network - Cycleways

Objectives

- a. Maximise cycle connections to regional cycle routes through and around the Corridor
- b. Support cycle use by creating a safe and high-quality cycle network
- c. Maximise permeability and interchange opportunities with public transport within the Corridor
- d. Minimise conflict between pedestrians, cyclists, and public domain elements

Strategy

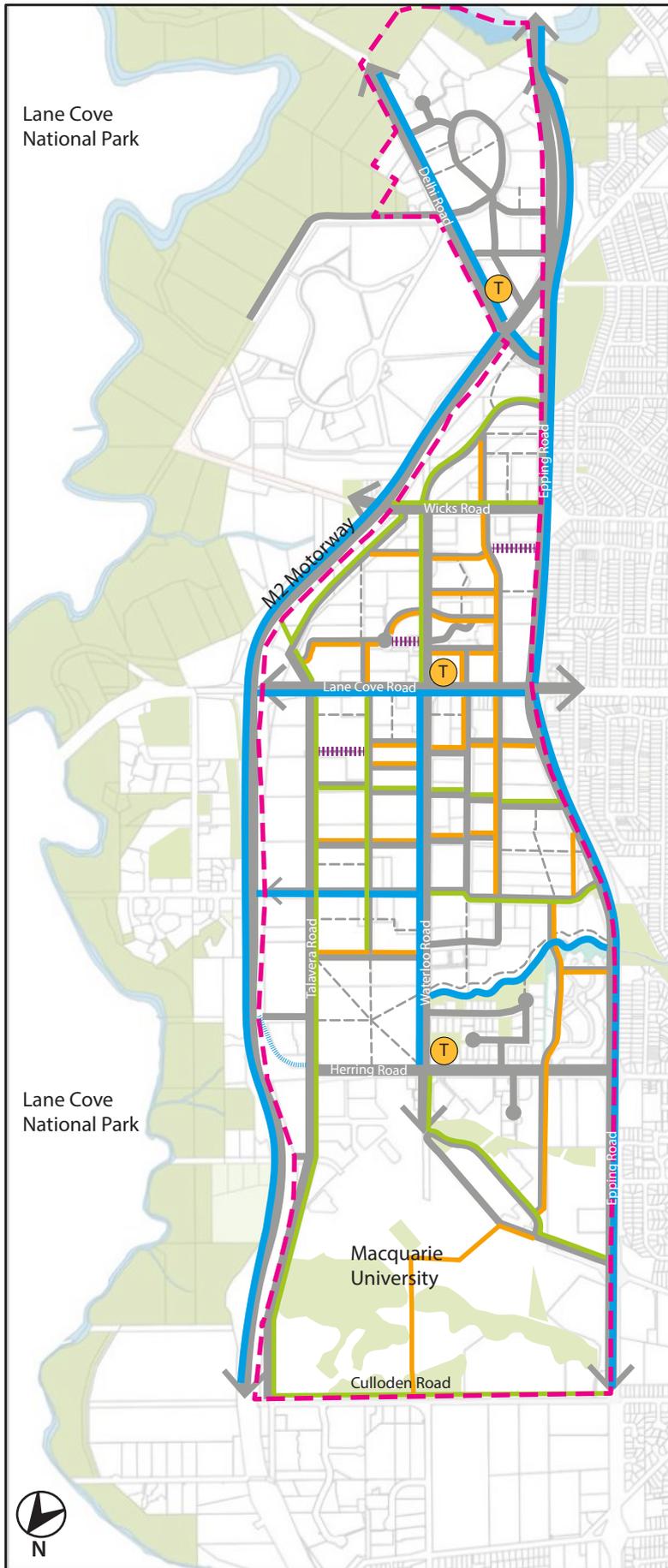
The Regional Bicycle Network is to be implemented as off-street shared cycleways in accordance with the Macquarie Park Public Domain Technical Manual. The Regional Bicycle Manual comprises:

- Waterloo Road;
- Delhi Road;
- Epping Road;
- Lane Cove Road;
- Khartoum Road;
- M2 Motorway; and
- Shrimptons Creek pathways.

The Local Bicycle Network is to be implemented as off-street shared cycleways in accordance with the Macquarie Park Public Domain Technical Manual. The Local Bicycle Manual comprises:

- Lyon Park Road;
- Talavera Road;
- Wicks Road;
- Proposed new roads (Numbers 17, 18, 19, 20, 21, and 26) in accordance with the *Ryde Bicycle Strategy 2014*

Cycleways are to be located adjacent to property boundary to minimise conflict with street trees, lighting, signage, and other public domain elements.



LEGEND

-  Roads and Pedestrian Ways
-  Regional Bicycle Route
-  Local Bicycle Route
-  Local Links
-  New Shared Paths
-  Regional Bicycle Route On-ramp
-  Rail Station

Figure 3.3.1 Macquarie Park Corridor Cycle Network Plan

3.4 Access Network - Street Trees

Macquarie Park was once filled with a series of market gardens and orchards with vast tracts of bushland prior to the establishment of the Macquarie University and its development as an employment area in the mid-1960s. Although there are currently no extant remains of this market gardens and orchards heritage, Macquarie Park's existing landscape character remains that of a green environment, which features trees and large lots with no front fencing that simulate an appearance of extensive open spaces.

Macquarie Park's landscape character is defined by its predominant native tree canopy with minimal exotic tree canopy, its strong links to Lane Cove National Park, and its creeks and riparian corridors.

Native Tree Canopy and links to Lane Cove National Park

Macquarie Park has strong links to Lane Cove National Park, which is represented by native tree planting throughout its parks and streetscapes.

The existing native tree canopy is predominantly smooth-barked species such as Spotted Gum, with some rough-barked species such as Brush Box in residential character streets.

Native tree species are also planted within private property setbacks (1.5-metre setback from the property boundary), which create clear sightlines along pedestrian paths that are bounded by vegetation.

Minimal Exotic Tree Canopy

There are some existing exotic trees planted within private property setbacks, median strips, and within the verge along certain sections of Herring Road and Julius Avenue. The exotic tree canopy are predominantly Plane and Liquidambar trees, which create a shaded green ambience particularly during the summer season.

Understorey planting is also characterised by a combination of formal exotic shrub planting and native grass planting such as Orange Jessamine, Lilly Pilly, Duranta Sheena's Gold, and Spiny-head Mat Rush.

Creeks and Riparian Corridors

There were four creeks that traversed the Corridor (Industrial, Porters, Shrimptons, and University creeks), most of which have been piped and are not currently visible. Open space generally surrounds certain sections of creeks that remain open. Whilst the vegetation in some sections of the riparian corridors and creeks are comprised of exotic weeds, there are areas such as sections of Shrimptons Creek (near Waterloo Road) where revegetation of Sydney Turpentine Ironbark Forest species is evident.

Objectives

- a. Create a desirable streetscape environment by providing a shaded ambience and ensuring pedestrian amenity
- b. Respond to the local environment by utilising species that are of an appropriate scale and type and that complements to the local context and streetscape character
- c. Recognise the role of streets in habitat creation and provide bio-links and connections
- d. Define a unique landscape character for key streets and other street typologies by creating signature gateway large-scale planting on key streets and smaller-scale planting on other street typologies.
- e. Recognise the landscape heritage of market gardens and orchards within Macquarie Park

Strategy

Based on the existing landscape character of Macquarie Park, the following overall strategy is proposed for street tree planting within the Macquarie Park Corridor:

- Create a shaded ambience and improve pedestrian amenity by promoting a consistent street tree layout (Refer to *Part 6.0 Typical Layouts*) and by providing street tree planting within the verge, where possible.
- Complement existing landscape character by utilising smooth-barked native tree species such as Sydney Red Gum, Spotted Gum, and Forest Red Gum, where existing streetscape is predominantly native tree species while maintaining the minimal exotic tree canopy at certain locations where the existing streetscape has exotic tree species.
- Encourage native tree planting within the 1.5-metre private property setback (where possible) to reinforce the green landscape character of the Corridor and allow for clear sightlines on major roads such as Lane Cove Road and Waterloo Road.
- Encourage native grass understorey to native street tree planting with drought-tolerant species such as *Lomandra Longifolia* ('Tanika' Spiny-head Mat Rush) or *Dianella caerulea* (Blueberry lily or Blue flax-lily).
- Allow for feature native trees, particularly on street corners and private property entry threshold that could contribute to the public domain.

Table 3.4.1 Street Tree Selection Palette for Existing Primary Streets

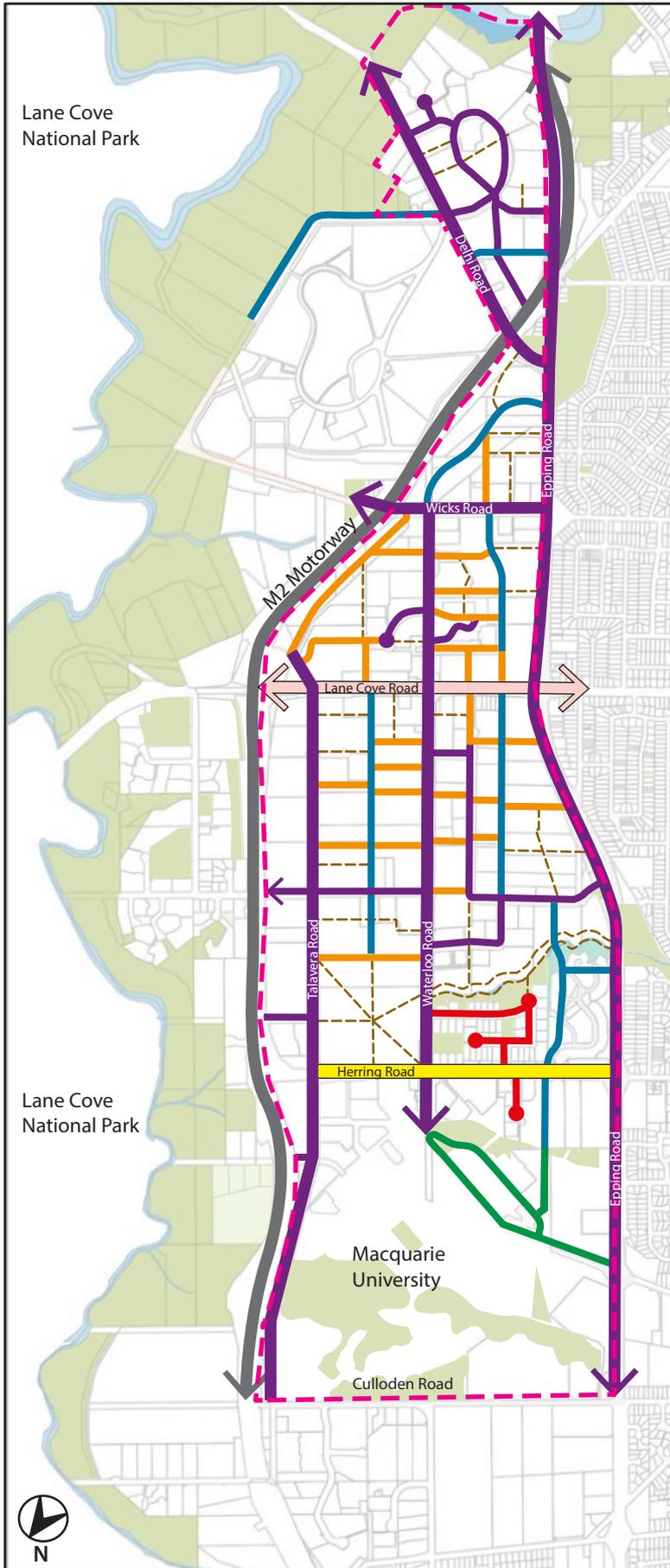
Streets	Tree Selection Palette
Existing Primary	
Epping Road, Waterloo Road (Lane Cove to Herring Road), Lane Cove Road, and Delhi Road	<p><u>Large Smooth-barked Native Trees:</u> <i>Angophora costata</i> (Sydney Red Gum); <i>Corymbia maculata</i> (Spotted Gum); <i>Eucalyptus tereticornis</i> (Forest Red Gum)</p> <p><u>Trees within the 1.5m private property setback:</u> <i>Angophora costata</i> (Sydney Red Gum); <i>Angophora floribunda</i> (Rough-barked Apple); <i>Corymbia maculata</i> (Spotted Gum); <i>Eucalyptus botryoides</i> (Swamp Mahogany); <i>Eucalyptus acmenoides</i> (White Mahogany); <i>Eucalyptus pilularis</i> (Blackbutt); <i>Eucalyptus piperita</i> (Sydney Peppermint); <i>Eucalyptus saligna</i> (Sydney Blue Gum); <i>Eucalyptus resinifera</i> (Red Mahogany); <i>Eucalyptus tereticornis</i> (Forest Red Gum)</p> <p><u>Feature Broad Canopy Trees (on street corners and private property entry threshold, where appropriate):</u> <i>Ficus rubiginosa</i> (Port Jackson Fig); <i>Platanus digitalis</i> (Plane Tree); <i>Ulmus parvifolia</i> (Chinese Elm)</p>
Herring Road	<p><u>Large Smooth-barked Native Trees:</u> As listed above</p> <p><u>Small Trees:</u> <i>Buckinghamia celsissima</i> (Ivory Curl); <i>Eleocarpus eumundii</i> (Smooth Quandong); <i>Eleocarpus reticulatus</i> (Blueberry Ash); <i>Flindersia australis</i> (Crow's Ash); <i>Harpullia pendula</i> (Tulipwood); <i>Syncarpia glomulifera</i> (Turpentine); <i>Tristaniopsis laurina</i> (Water Gum); <i>Tristaniopsis laurina</i> ('Luscious' Water Gum); <i>Waterhousia floribunda</i> (Weeping Lilly Pilly)</p> <p><u>Trees within the 1.5m private property setback and feature Broad Canopy Trees (on street corners and private property entry threshold, where appropriate):</u> As listed above</p>

Table 3.4.2 Street Tree Selection Palette for Existing Secondary and Tertiary Streets

Existing Secondary	
Talavera Road, Khartoum Road (Talavera Rd to M2), Khartoum Road (Talavera Rd to Waterloo Rd), Byfield, Lyon Park Road, Wicks Road, and Waterloo Road (Lane Cove Rd to Wicks Rd)	<p>Large Smooth-barked Native Trees: <i>Angophora costata</i> (Sydney Red Gum); <i>Corymbia maculata</i> (Spotted Gum); <i>Eucalyptus tereticornis</i> (Forest Red Gum)</p> <p>Trees within the 1.5m private property setback: <i>Angophora costata</i> (Sydney Red Gum); <i>Angophora floribunda</i> (Rough-barked Apple); <i>Corymbia maculata</i> (Spotted Gum); <i>Eucalyptus botryoides</i> (Swamp Mahogany); <i>Eucalyptus acmenoides</i> (White Mahogany); <i>Eucalyptus pilularis</i> (Blackbutt); <i>Eucalyptus piperita</i> (Sydney Peppermint); <i>Eucalyptus saligna</i> (Sydney Blue Gum); <i>Eucalyptus resinifera</i> (Red Mahogany); <i>Eucalyptus tereticornis</i> (Forest Red Gum)</p>
Eden Park Drive, Coolinga Street, Giffnock Avenue, and Julius Avenue	<p>Small Trees: <i>Angophora costata</i> (Sydney Red Gum); <i>Buckinghamia celsissima</i> (Ivory Curl); <i>Corymbia maculata</i> (Spotted Gum); <i>Eleocarpus eumundii</i> (Smooth Quandong); <i>Eleocarpus reticulatus</i> (Blueberry Ash); <i>Flindersia australis</i> (Crow's Ash); <i>Harpullia pendula</i> (Tulipwood); <i>Pittosporum revolutum</i> (Yellow Pittosporum); <i>Syncarpia glomulifera</i> (Turpentine); <i>Tristaniopsis laurina</i> (Water Gum); <i>Tristaniopsis laurina</i> ('Luscious' Water Gum); <i>Waterhousia floribunda</i> (Weeping Lilly Pilly)</p> <p>Trees within the 1.5m private property setback: As listed above</p>
Existing Tertiary	
Rivett Road and Richardson Place	<p>Large Smooth-barked Native Trees: As listed above</p> <p>Trees within the 1.5m private property setback: As listed above</p>

Table 3.4.3 Street Tree Selection Palette for Existing Residential Character and New Streets

Existing Residential Character Streets	
Windsor Drive, Peachtree Road, Lachlan Avenue, and Cottonwood Crescent	<p>Small Trees: <i>Buckinghamia celsissima</i> (Ivory Curl); <i>Eleocarpus eumundii</i> (Smooth Quandong); <i>Eleocarpus reticulatus</i> (Blueberry Ash); <i>Flindersia australis</i> (Crow's Ash); <i>Harpullia pendula</i> (Tulipwood); <i>Pittosporum revolutum</i> (Yellow Pittosporum); <i>Syncarpia glomulifera</i> (Turpentine); <i>Tristaniopsis laurina</i> (Water Gum); <i>Tristaniopsis laurina</i> ('Luscious' Water Gum); <i>Waterhousia floribunda</i> (Weeping Lilly Pilly)</p> <p><u>Trees within the 1.5m private property setback:</u> <i>Angophora costata</i> (Sydney Red Gum); <i>Angophora floribunda</i> (Rough-barked Apple); <i>Corymbia maculata</i> (Spotted Gum); <i>Eucalyptus botryoides</i> (Swamp Mahogany); <i>Eucalyptus acmenoides</i> (White Mahogany); <i>Eucalyptus pilularis</i> (Blackbutt); <i>Eucalyptus piperita</i> (Sydney Peppermint); <i>Eucalyptus saligna</i> (Sydney Blue Gum); <i>Eucalyptus resinifera</i> (Red Mahogany); <i>Eucalyptus tereticornis</i> (Forest Red Gum)</p>
New Streets	
Proposed new 20-metre wide street	<p><u>Large Smooth-barked Native Trees (entries and blister planting):</u> <i>Angophora costata</i> (Sydney Red Gum); <i>Corymbia maculata</i> (Spotted Gum); <i>Eucalyptus tereticornis</i> (Forest Red Gum)</p> <p><u>Small Trees (for tree pits) and trees within the 1.5m private property setback:</u> As listed above</p> <p><u>Feature Broad Canopy Trees:</u> <i>Ficus rubiginosa</i> (Port Jackson Fig); <i>Platanus digitalis</i> (Plane Tree); <i>Ulmus parvifolia</i> (Chinese Elm)</p>
Proposed new 16-metre and 14.5-metre wide street	<p><u>Small Trees (for tree pits):</u> As listed above</p> <p><u>Trees within the 1.5m private property setback and feature Broad Canopy Native Trees:</u> As listed above</p>



LEGEND

- M2
- Large smooth-barked native trees (with feature broad-canopy trees on street corners and entries, where possible)
- No street trees (tree planting within 1.5m private property setback only)
- Small native street trees in path
- Large smooth-barked in entries and blisters, small native trees in pits, and feature broad-canopy trees
- Small native street trees in path and feature broad-canopy trees
- Large smooth-barked in entries and median and small native trees in continuous garden beds
- Pedestrian Ways with small trees in naturestrip
- Refer to Macquarie University Masterplan
- Macquarie Park Corridor Boundary

Note: Refer to *Street Tree Selection Palette* (Tables 3.4.1, 3.4.2, and 3.4.3) for further details

Figure 3.4.1 Macquarie Park Corridor Street Trees Plan

3.5 Access Network - Street Lighting

Objectives

- a. Provide an access network with high pedestrian, cycling, and vehicular amenity
- b. Reinforce a sense of safety for the community by providing appropriate street lighting
- c. Provide a street lighting network that complements the local context, surrounding developments, streetscape character, and other public domain elements

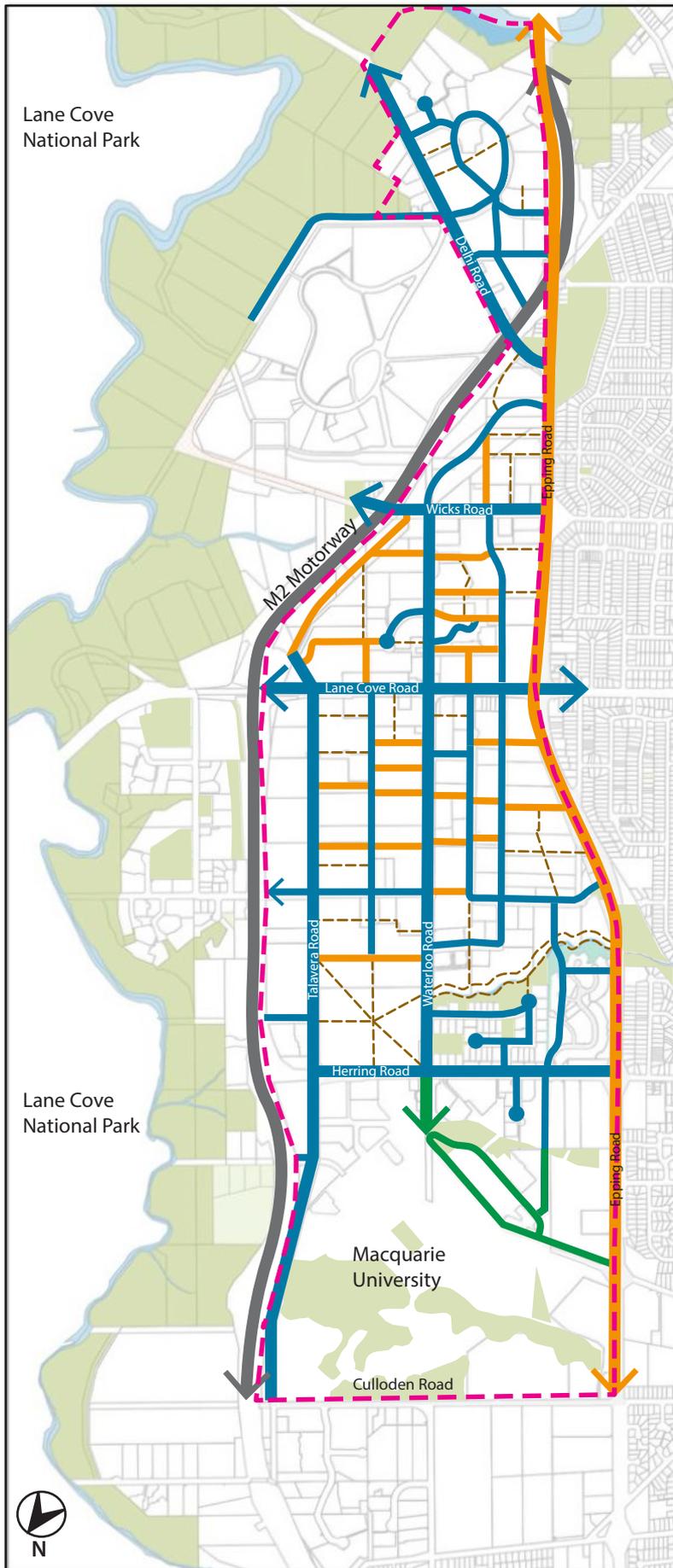
Strategy

The overall strategy is to deliver an enhanced street lighting network for the Macquarie Park Corridor through the development process and City of Ryde's program of works.

Street lighting on multi-function poles (MFPs) must be installed as part of public domain works required for developments within the corridor. Following the final completion of the development and the public domain works, Council takes over the ownership and long-term maintenance responsibility of the street lighting.

Please refer to Figure 3.5.1 for the Street Lighting Network Plan and the *Design Guide for Council-owned Street Lighting* for further details.

Note: Certain developments that propose street lighting designs that vary from the Street Lighting Network Plan due to site-specific constraints and/or road configurations must be referred to Manager Asset Systems.



LEGEND

- M2
- Staggered multi-function poles on both sides (refer to the Street Lighting Schema for the Macquarie Park Business Area)
- Multi-function poles on one side (refer to the Street Lighting Schema for the Macquarie Park Business Area)
- Standard pedestrian lights
- Macquarie University roads (refer to Macquarie University Masterplan)
- Macquarie Park Corridor Boundary

Note: Street lighting design and specifications are subject to Council's approval. Reference should also be made to the *Design Guide for Council-owned Street Lighting*.

Figure 3.5.1 Macquarie Park Corridor Street Lighting Plan

4.0 OPEN SPACE NETWORK

4.1 Open Space Network - Function and Character

Objectives

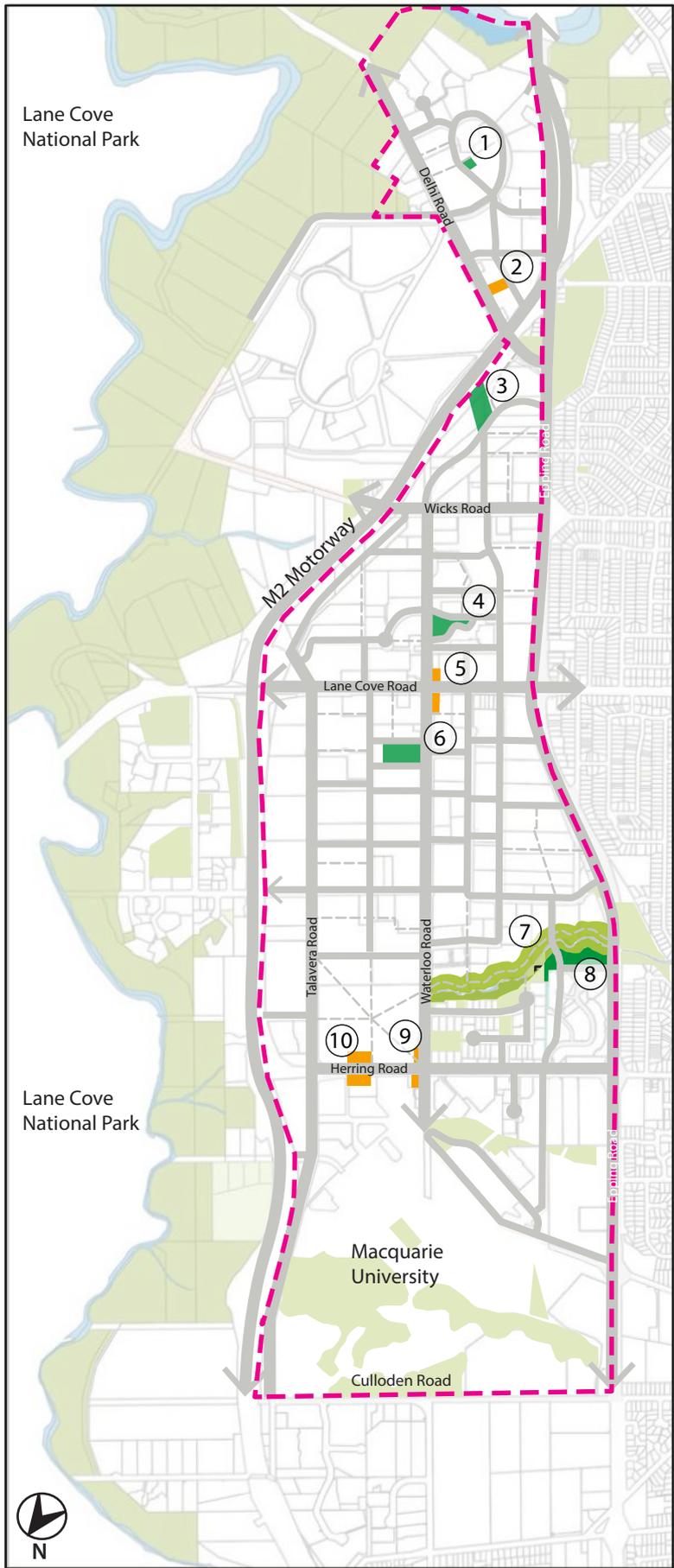
- Provide a well-connected public open space network with a range of open space typologies to accommodate active and passive recreational uses
- Create bio-links and canopy connections to existing vegetation communities and contribute to stormwater and ecological management
- Maximise the accessibility of useable open space and contribute to the pedestrian and cycle network

Strategy

A new open space network will be provided by identifying new public space and augmenting existing public open spaces within the corridor. The new open space network will comprise of a range of typologies such as multi-function parklands, informal gathering and recreational areas, urban plazas, and rehabilitated and new vegetation reserves that are integrated with the access network to maximise pedestrian and cycle access.

Table 4.1.1 Proposed New Open Space and Desired Function and Character

Park Name/Address	Minimum Area/ Dimensions	Function and Indicative Character
Central Park (43-61 Waterloo Road)	1 hectare 75 x 100 metres (if dimensions are altered, a minimum of 65 metres is required in any direction)	Multi-function Active recreation (informal sport) Passive recreation Community events (cinemas, expos, etc.) Children's play
Shrimptons Creek Parklands and Riparian Corridor	3.8 hectares Dimensions vary	Multi-function Active transport (fitness trail, walking, and cycling) Active recreation (informal sport and skateboarding) Passive recreation Children's play Riparian Corridor/ native habitat
Riverside Park (Julius Avenue)	0.35 hectare 60 x 60 metres	Multi-function Passive recreation Children's play Outdoor dining Neighbourhood meeting place
Thomas Holt Park (Thomas Holt Drive)	0.40 hectare approx. 100 x 40 metres	Multi-function Passive recreation Children's play Neighbourhood meeting place



LEGEND

- Existing Open Space
- Proposed Open Space
- Core Riparian Corridor (20 metres from either side of the creek)
- Proposed Urban Plaza
- Macquarie Park Corridor Boundary

Proposed Open Space

- ① Riverside Park
- ② North Ryde Station Urban Plaza
- ③ North Ryde Station Precinct Park
- ④ Thomas Holt Drive Park
- ⑤ Macquarie Park Station Urban Plaza
- ⑥ Central Park
- ⑦ Shrimptons Creek Core Riparian Corridor
- ⑧ Shrimptons Creek Park
- ⑨ Macquarie University Station Urban Plaza
- ⑩ Macquarie University Station Precinct Urban Plaza

Figure 4.1.1 Macquarie Park Corridor Open Space Network Plan

4.2 Open Space Network - Paving and Finishes

Objectives

- Create a public domain that is visually seamless and unified
- Provide a variety of open space typologies with appropriate facilities
- Utilise robust and durable materials with a consistent colour and finish to create a visually consistent ground plane
- Achieve environmental objectives in accordance with the RDCP 2014

Strategy

Finishes in parks and public open spaces should be consistent with streetscape materials. Continuity in materials is critical for internal park pathways that connect to external footpaths. Specific treatments for public open space can be incorporated using porous and permeable materials where possible, with an emphasis on durability and simplicity.

Note: The final designs including paving treatment, finishes, and fixtures for new open space are subject to Council's approval (Manager Strategic City and/or Manager Asset Systems) and should be consistent with the provisions of the RDCP 2014 as indicated below.

Table 4.2.1 New Open Space Paving and Finishes Key Specifications

Park Name/Address	Minimum fixtures to be provided	Paving treatment for internal park pathways
Central Park (43-61 Waterloo Road)	10 x park benches; 10 x bicycle parking spaces	Full granite paving
Shrimptons Creek Parklands and Core Riparian Corridor	6 x park benches; 6 x bicycle parking spaces; and pedestrian footbridge across Shrimptons Creek to improve connectivity between the existing residential precincts and Lyon Park Road	Concrete footpath with granite banding; full granite at key locations and street frontages
Riverside Park (Julius Avenue)	6 x park benches; 6 x bicycle parking spaces	Concrete footpath with granite banding; full granite at key locations and street frontages
Thomas Holt Park (Thomas Holt Drive)	6 x park benches; 6 x bicycle parking spaces; and landscaping that responds to natural topography of the park (e.g. terraced seating, etc.)	Concrete footpath with granite banding; full granite at key locations and street frontages

4.3 Open Space Network - Trees and Landscaping

Objectives

- Reflect and respond to the local environment through the use of endemic species
- Utilise species that are of an appropriate scale and type and that respond to the local context
- Recognise the role of streets in habitat creation and provide bio-links and connections
- Utilise native and exotic species that are of an appropriate scale and type to reinforce the street hierarchy and provide colour and variety to the streetscape

Strategy

The overall strategy for trees and landscaping in public open spaces promotes a vegetation palette that provides a “reading” of the underlying geology and topography. This strategy assists in minimising weed infestation and allows for the creation of bio-links and canopy connections to Lane Cove National Park and existing vegetation communities.

Table 4.3.1 Recommended Trees Schedule for Open Space

Recommended Trees	
Sydney Turpentine-Ironbark Forest (for bushlands and corridors within parks)	
<i>Angophora costata</i> (Sydney Red Gum); <i>Angophora floribunda</i> (Rough-barked Apple); <i>Corymbia gummifera</i> (Red Bloodwood); <i>Corymbia maculata</i> (Spotted Gum);	<i>Eucalyptus globoidea</i> (White Stringybark); <i>Eucalyptus saligna</i> (Sydney Blue Gum); <i>Syncarpia glomulifera</i> (Turpentine); <i>Tristaniopsis laurina</i> (Water Gum)
Native Park Tree Species	
<i>Angophora costata</i> (Sydney Red Gum); <i>Angophora floribunda</i> (Rough-barked Apple); <i>Buckinghamia celsissima</i> (Ivory Curl); <i>Corymbia gummifera</i> (Red Bloodwood); <i>Corymbia maculata</i> (Spotted Gum); <i>Eleocarpus eumundii</i> (Smooth Quandong); <i>Eleocarpus reticulatus</i> (Blueberry Ash); <i>Eucalyptus botryoides</i> (Swamp Mahogany); <i>Eucalyptus acmenoides</i> (White Mahogany); <i>Eucalyptus pilularis</i> (Blackbutt); <i>Eucalyptus piperita</i> (Sydney Peppermint);	<i>Eucalyptus saligna</i> (Sydney Blue Gum); <i>Eucalyptus resinifera</i> (Red Mahogany); <i>Eucalyptus tereticornis</i> (Forest Red Gum); <i>Flindersia australis</i> (Crow's Ash); <i>Harpullia pendula</i> (Tulipwood); <i>Melaleuca linariifolia</i> (Flax-leaved Paperbark); <i>Pittosporum revolutum</i> (Yellow Pittosporum); <i>Syncarpia glomulifera</i> (Turpentine); <i>Tristaniopsis laurina</i> (Water Gum); <i>Tristaniopsis laurina</i> ('Luscious' Water Gum); <i>Waterhousia floribunda</i> (Weeping Lilly Pilly)
Broad Canopy Trees (for shade and as specimen species)	
<i>Ficus rubiginosa</i> (Port Jackson Fig); <i>Platanus digitalis</i> (Plane Tree); <i>Ulmus parvifolia</i> (Chinese Elm)	

Table 4.3.2 below indicates the landscaping specifications for new public open space identified in the *Part 4.5 Macquarie Park Corridor* of the RDCP 2014.

Table 4.3.2 New Open Space Tree and Landscaping Palette

Park Name/Address	Landscaping to be provided	Tree and Landscaping palette
Central Park (43-61 Waterloo Road)	Turf detention basin to minimum 50% of park area as the Central Park is on the overland flow alignment; subject to Council's approval	Refer to Table 4.3.1
Shrimptons Creek Parklands and Core Riparian Corridor	Continuous core riparian zone (20 metres wide measured either side of the creek); subject to Council's approval	Only endemic species may be used in the core riparian zone Refer to Table 4.3.1 and NSW Office of Water's <i>Guidelines for Riparian Corridors on Waterfront Land</i> (2012)
Riverside Park (Julius Avenue)	Subject to design and Council's approval	Refer to Table 4.3.1
Thomas Holt Park (Thomas Holt Drive)	Subject to design and Council's approval	Refer to Table 4.3.1

4.4 Open Space Network - Rail Station Plazas

Objectives

- Support the provision of rail station plazas with active building frontages and clear unimpeded views and access
- Utilise robust and durable materials with a consistent colour and finish to create a visually unified and seamless public domain
- Provide wayfinding and reinforce a sense of safety for the community by providing appropriate lighting and directional signage
- Provide sufficient furniture such as bins, seats, lighting, and bicycle parking in appropriate locations

Strategy

The overall strategy is to integrate rail station plazas with the streetscape and other elements of the public domain by providing appropriate responses to level changes and continuity in materials. This would assist in promoting good design that provides opportunities for outdoor dining and social interaction and ensuring amenity and access for people of all ages and abilities.

Note: The final designs including paving treatment, finishes, and fixtures for new open space are subject to Council's approval (Manager Strategic City) and should be consistent with the provisions of the RDCP 2014 as indicated below.

Table 4.4.1 Rail Station Plazas Minimum Required Fixtures

Rail Station Plaza	Area/ Dimensions	Minimum fixtures to be provided
Macquarie Park Station Plaza (West)	0.35 hectare min. 88 x 40 metres	10 x park benches; 10 x bicycle parking spaces
Macquarie Park Station Plaza (East)	0.35 hectare min. 88 x 40 metres	Minimum 10 x park benches; 10 x bicycle parking spaces
Macquarie University Station Plaza (East)	0.67 hectare min. 80 x 80 metres	Minimum 10 x park benches; 10 x bicycle parking spaces

Detailed descriptions of paving types and finishes for rail station plazas are provided below:

Table 4.4.2 Rail Station Plazas Paving and Finishes Specifications

Elements	Specifications
Paving Treatment	Full-granite equal to black - flame exfoliated 300 mm x 300 mm x 60 mm
Lighting	Subject to design and Council's approval
Seats	Botton and Gardiner Urban Seat (US11ALX) Finish: Cast aluminium; powder coat
Bike Rack	Model: LEDA BR85F Bike Rail Dimensions: 850 x 1000 mm (200 mm in ground) Finish: 40NB(48.26) x 2.77mm Grade 304 Stainless Steel Pipe/ Linished

Figure 4.4.1 Rail Station/Urban Plazas Precedent Images

*New York, New York, USA - Bryant Park (42nd Street and Fifth Avenue Subway Station)**Melbourne, VIC - Federation Square (Flinders Street Station)**Detroit, Colorado, USA - Wynkoop Plaza (Union Station)**Perth, WA - City Square (The Esplanade)*

5.0 ART IN PUBLIC SPACES

Art can make urban spaces attractive and welcoming, promote local identity, evoke business confidence, and attract investment. Artworks can enhance streetscapes and other spaces by creating interesting and distinctive urban environments, assisting navigation and wayfinding, and attracting pedestrian activity. High-quality and accessible public artworks can also be a destination in itself and create vital and engaging spaces that connect the private and public domains.

Artworks in public spaces within Macquarie Park can serve the following purposes:

- Create emblems or symbols that depict the identity of the place;
- Establish a strong identity or signature to distinguish a special place or site;
- Signify entry points;
- Strengthen the character of the place; and
- Stimulate the interaction of ideas that is central to the vision for the Corridor.

Objectives

- a. Include site-specific in the public domain in the Macquarie Park Corridor
- b. To create a distinctive urban environment and sense of place
- c. To reflect Macquarie Park's local character, cultural identity, and natural environment
- d. To create spaces (whether publicly or privately owned), which incorporate art that is at the forefront of new ideas, original, creative, and innovative in its design and use of form, technique, and materials.

Strategy

- a. Art must be publicly accessible (i.e. in locations where it can be viewed or experienced from the public domain).
- b. Art must be integrated into the landscape and other elements of the site and public domain (including paving, lighting design, tree planting and landscaping, outdoor seating, play equipment, etc).
- c. Art in publicly accessible places must have regard to public safety and use materials that are robust, durable, and low maintenance.
- d. The following themes provide a spectrum of ideas that can be explored and expressed through public art, arising from the Corridor's history and desired future character:
 - Innovation and technology
 - Transport (train, bus, or car) and people movement
 - Macquarie Park's landscape heritage (e.g. market gardens and orchards)
 - Future of Macquarie Park
 - Natural Environment (e.g. water theme relating to the the Corridor's creeks and riparian corridors).
- e. Reference should be made to City of Ryde's *Public Art Policy*.

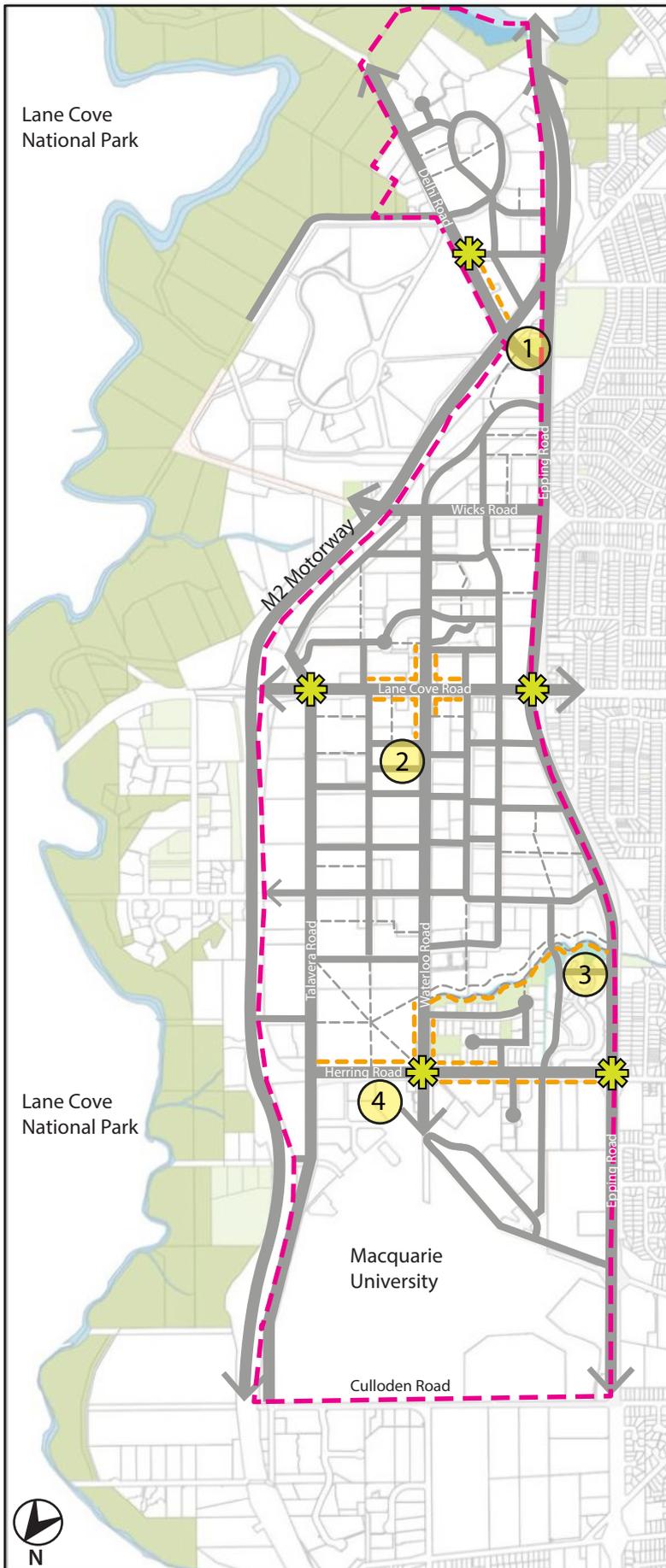


Figure 5.0.1 Macquarie Park Corridor Public Art Plan

ART IN PUBLIC SPACES

ICONIC ARTWORKS
(approximate locations)

- ① Delhi Road
- ② Central Park
- ③ Shrimptons Creek Parkland
- ④ Herring Road Urban Plaza
- ✱ Medium-sized Feature Artworks at nodal points
- - - Intimate scale artworks at high pedestrian activity areas

Iconic



Munich, Germany - Olafur Eliasson



Ryde Wharf Reserve, Ryde NSW - Jane Cavanaugh

Feature (medium-sized)



Palm Beach, Florida, USA - Hilton Garden Inn

Intimate scale



Wuganmagulya Farm Cove Sydney Sculpture Walk, Royal Botanic Gardens, Sydney NSW - Brenda L.

6.0 TYPICAL LAYOUTS

This section provides guidelines for the correct placement and configuration of public domain elements such as street trees, furniture, lighting, and footpaths in the access network.

Note: Street tree spacing, street lighting location and design, and paving layout may vary depending on site-specific constraints and are subject to Council's approval.

6.1 New 20-metre wide streets

The following typical specifications apply to new 20-metre wide streets within the Corridor as indicated in Fig. 3.1.1 *Macquarie Park Corridor Road Types Plan*.

Table 6.1.1 Typical Specifications for new 20-metre wide streets

Elements	Typical specification
Footpath	
Paved footpath	4.5 metres on both sides (Refer to typical layout diagram)
Materials	Granite paving equal to black - flame exfoliated 600 mm x 300 mm x 60 mm (Refer to Fig. 3.2.1 <i>Macquarie Park Corridor Paving Plan</i>)
Kerb	Integral cast-in-situ concrete kerb and gutter; kerb ramp to be designed in accordance with desire lines, safety, and conflict zones (subject to Council's approval)
Driveway	Granite paving equal to black - flame exfoliated 150 mm x 100 mm x 60 mm
Street Trees	
Layout	In accordance with typical layout diagram
Spacing	Trees planted in 1.5 x 3 m pits spaced approximately 8 metres apart; trees planted in 2.5 x 3 m kerb blisters spaced approximately 24 metres apart (subject to lighting design and other site-specific constraints)
Street Furniture	
Seats	Typically 1 per city block and at certain locations such as near train stations, bus stops, and/or corners. Specification: Botton and Gardiner Urban Seat (US11ALX) Finish: Cast aluminium; powder coat
Bins	In regular intervals, typically 1 per city block and at certain locations such as near train stations, bus stops, and outside food shops. Specification: City of Ryde model dual rubbish bins with butt bin Dimensions: 2 x 120 L; 15 mm perforations Finish: Marine-grade stainless steel; mounts to Council specification
Bollards	Installed as necessary Specification: LEDA SSP80F Fixed Bollard 80NB (900mm high) Finish: Linished or brushed Grade 304 Stainless Steel
Bike rack	2 per city block located close to intersections Specification: LEDA BR85F Bike Rail Dimensions: 850 x 1000 mm (200 mm in ground) Finish: 40 NB(48.26) x 2.77 mm Grade 304 Stainless Steel Pipe/Linished
Street Lighting	
Layout	Spaced 40 metres apart; staggered configuration (subject to design)
Multi-function light pole	12 metres in height; refer to <i>Design Guide for Council-owned Street Lighting</i> for specification

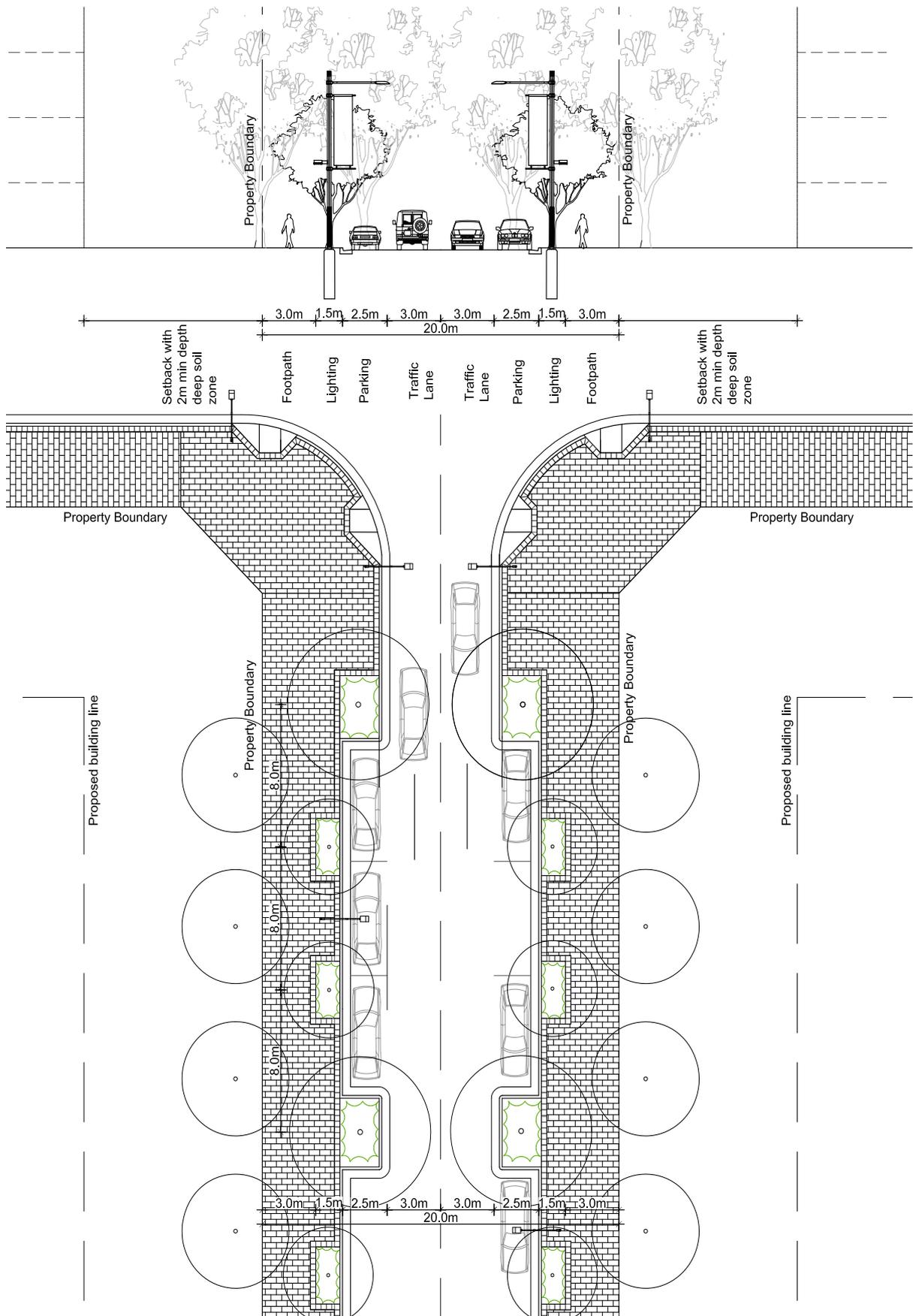


Figure 6.1.1 Typical Layout - New 20-metre wide Streets (NOT TO SCALE)

6.2 New 16-metre wide streets

The following typical specifications apply to new 16-metre wide streets within the Corridor as indicated in Fig. 3.1.1 *Macquarie Park Corridor Road Types Plan*.

Table 6.2.1 Typical Specifications for new 16-metre wide streets

Elements	Typical Specifications
Footpath	
Paved footpath	Full width: 2.5 metres on one side and 3.5 metres on the other side (Refer to typical layout diagram)
Materials	Granite paving equal to black - flame exfoliated 600 mm x 300 mm x 60 mm (Refer to Fig. 3.2.1 <i>Macquarie Park Corridor Paving Plan</i>)
Kerb	Integral cast-in-situ concrete kerb and gutter; kerb ramp to be designed in accordance with desire lines, safety, and conflict zones (subject to Council's approval)
Driveway	Granite paving equal to black - flame exfoliated 150 mm x 100 mm x 60 mm
Street Trees	
Layout	In accordance with typical layout diagram
Spacing	Trees planted in 2.5 x 3 m kerb blisters spaced approximately 16 metres apart (subject to lighting design and other site-specific constraints)
Street Furniture	
Bollards	Installed as necessary Specification: LEDA SSP80F Fixed Bollard 80NB (900mm high) Finish: Linished or brushed Grade 304 Stainless Steel
Bike rack	2 per city block located close to intersections Specification: LEDA BR85F Bike Rail Dimensions: 850 x 1000 mm (200 mm in ground) Finish: 40NB(48.26) x 2.77mm Grade 304 Stainless Steel Pipe/Linished
Street Lighting	
Layout	Spaced 40 metres apart; staggered configuration (subject to design)
Multi-function light pole	9 metres in height; refer to <i>Design Guide for Council-owned Street Lighting</i> for specification

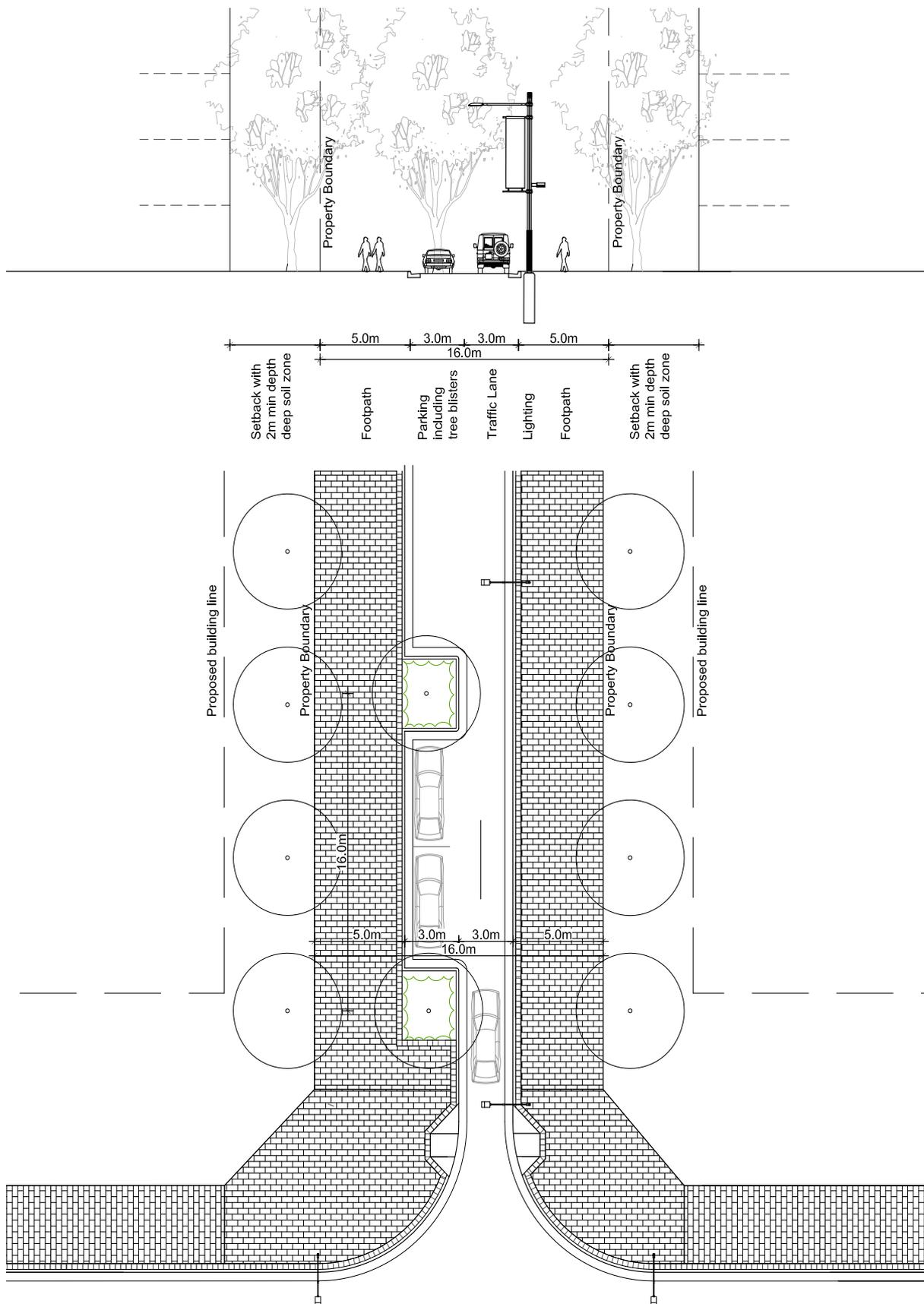


Figure 6.2.1 Typical Layout - New 16-metre wide Streets (NOT TO SCALE)

6.3 New 14.5-metre wide streets

The following typical specifications apply to new 14.5-metre wide streets within the Corridor as indicated in Fig. 3.1.1 *Macquarie Park Corridor Road Types Plan*.

Table 6.3.1 Typical Specifications for new 14.5-metre wide streets

Elements	Typical Specifications
Footpath	
Paved footpath	Full width: 2.5 metres on one side and 3.5 metres on the other side (Refer to typical layout diagram)
Materials	Granite paving equal to black - flame exfoliated 600 mm x 300 mm x 60 mm (Refer to Fig. 3.2.1 <i>Macquarie Park Corridor Paving Plan</i>)
Kerb	Integral cast-in-situ concrete kerb and gutter; kerb ramp to be designed in accordance with desire lines, safety, and conflict zones (subject to Council's approval)
Driveway	Granite paving equal to black - flame exfoliated 150 mm x 100 mm x 60 mm
Street Trees	
Layout	In accordance with typical layout diagram
Spacing	Trees planted in 1.5 x 3 m pits spaced approximately 8 metres apart; trees planted in 2.5 x 3 m kerb blisters spaced approximately 16 metres apart (subject to lighting design and other site-specific constraints)
Street Furniture	
Bollards	Installed as necessary Specification: LEDA SSP80F Fixed Bollard 80NB (900mm high) Finish: Linished or brushed Grade 304 Stainless Steel
Bike rack	2 per city block located close to intersections Specification: LEDA BR85F Bike Rail Dimensions: 850 x 1000 mm (200 mm in ground) Finish: 40NB(48.26) x 2.77mm Grade 304 Stainless Steel Pipe/Linished
Street Lighting	
Layout	Spaced 40 metres apart; staggered configuration (subject to design)
Multi-function light pole	9 metres in height; refer to <i>Design Guide for Council-owned Street Lighting</i> for specification

6.4 Intersections

The following diagrams show typical layouts for intersections of various existing and new street typologies within the Corridor, as indicated in Fig. 3.1.1 *Macquarie Park Corridor Road Types Plan*.

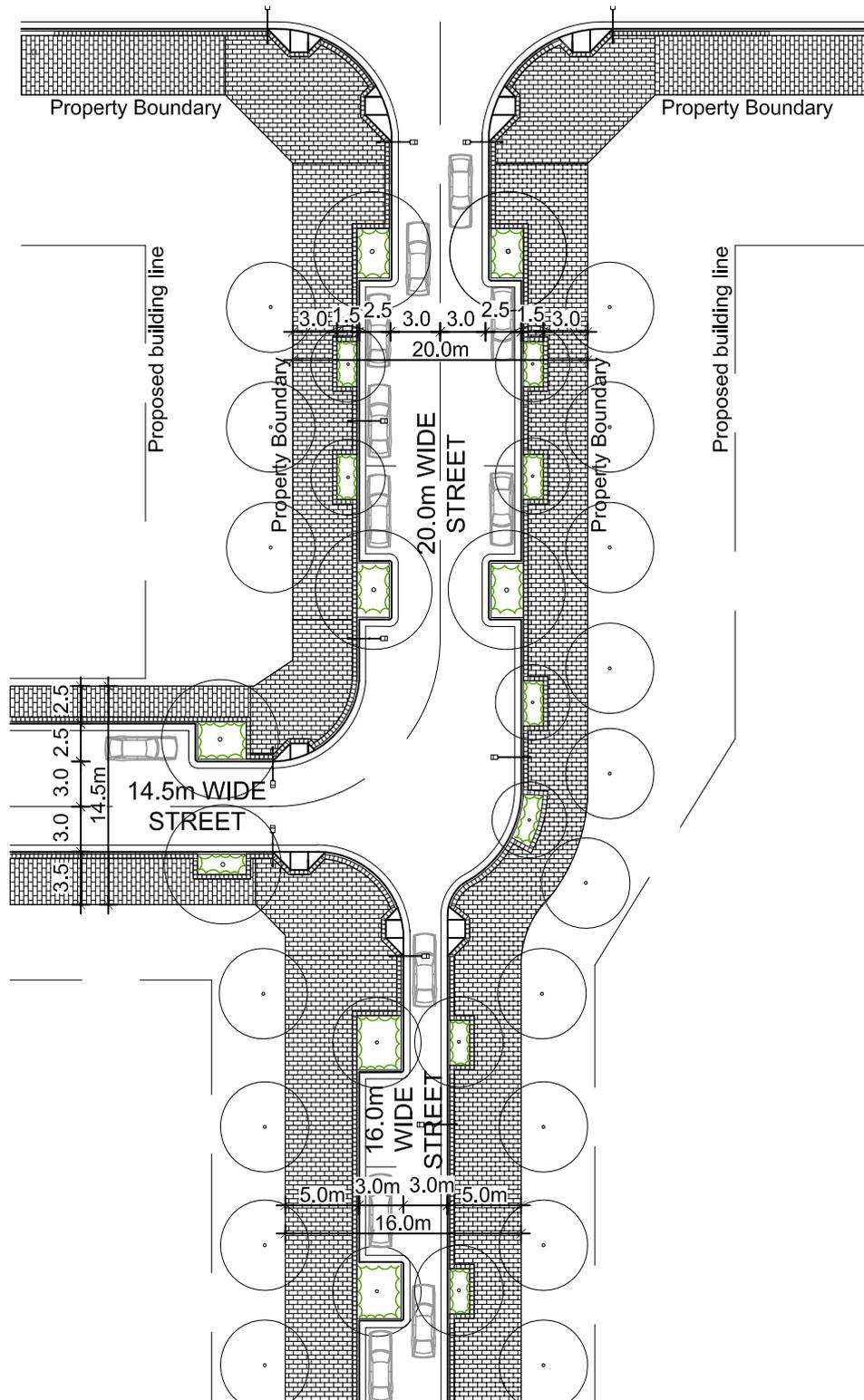


Figure 6.4.1 New 20-metre, 16-metre, and 14.5-metre wide street intersection (NOT TO SCALE)

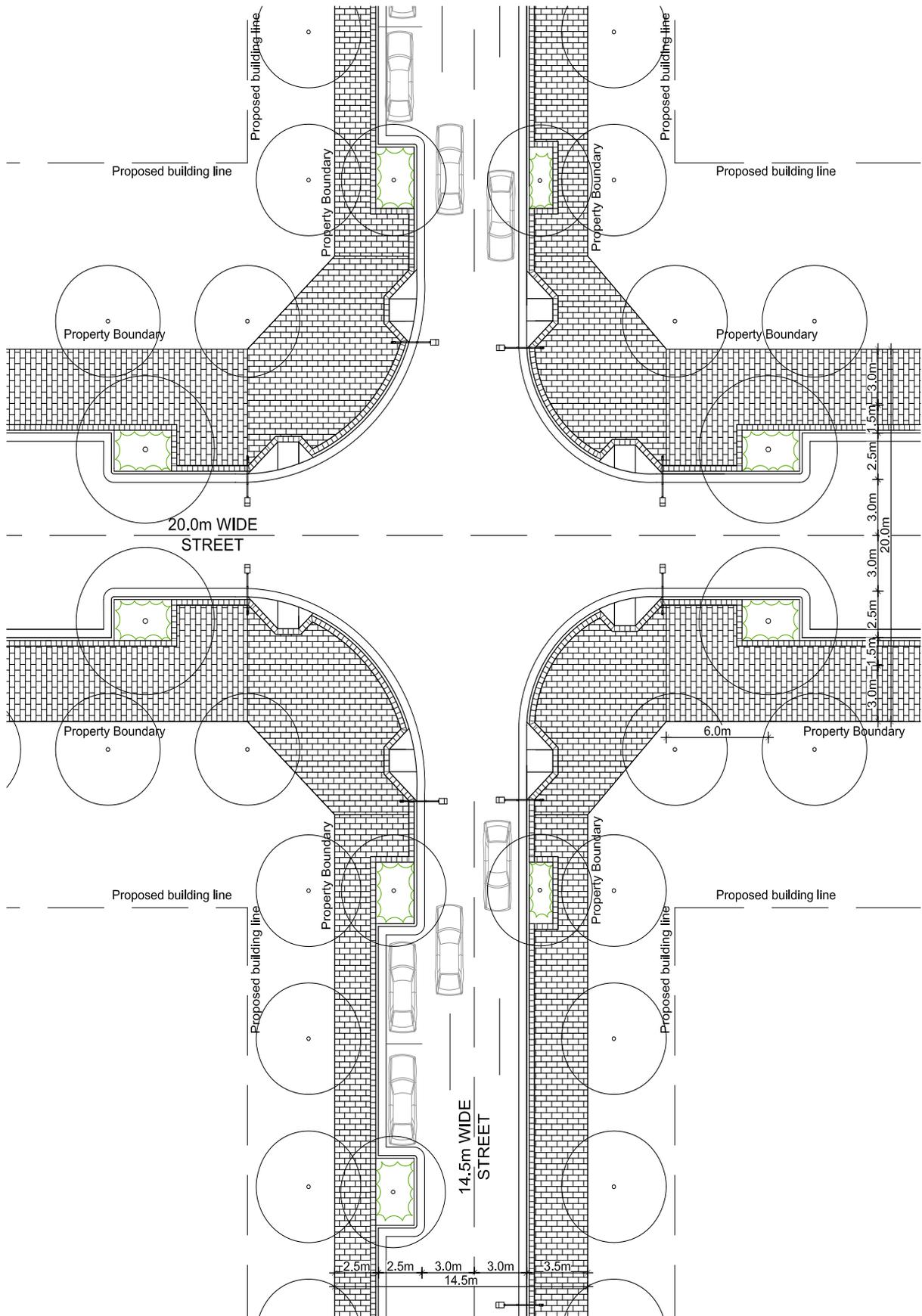


Figure 6.4.2 Typical Layout - 14.5-metre and 20-metre wide street intersection (NOT TO SCALE)

6.5 New Pedestrian Ways

The following typical specifications apply to new pedestrian ways within the Corridor as indicated in Fig. 3.1.1 *Macquarie Park Corridor Road Types Plan*.

Note: The overall width of the pedestrian way is approximately 8 metres, in accordance with Safer by Design Principles.

Table 6.5.1 Typical Specifications for new pedestrian ways

Elements	Typical Specifications
Footpath	
Paving width	4 metres
Materials	Concrete paving with granite banding equal to black - flame exfoliated (every 6 metres) 600 mm x 300 mm x 60 mm (Refer to Fig. 3.2.1 <i>Macquarie Park Corridor Paving Plan</i>)
Landscaping	
Trees	Planted in 2-metre wide soft landscaping on either side of the path spaced approximately 4 metres apart (subject to lighting design and other site-specific constraints)
Street Furniture	
Bollards	Installed as necessary Specification: LEDA SSP80F Fixed Bollard 80NB (900mm high) Finish: Linished or brushed Grade 304 Stainless Steel
Bike rack	2 per city block located close to intersections Specification: LEDA BR85F Bike Rail Dimensions: 850 x 1000 mm (200 mm in ground) Finish: 40NB(48.26) x 2.77mm Grade 304 Stainless Steel Pipe/Linished
Street Lighting	
Layout	Aligned and evenly spaced along length of pedestrian way if possible (subject to design and Council's approval)
Light Pole	5 metres in height; specification subject to Council's approval

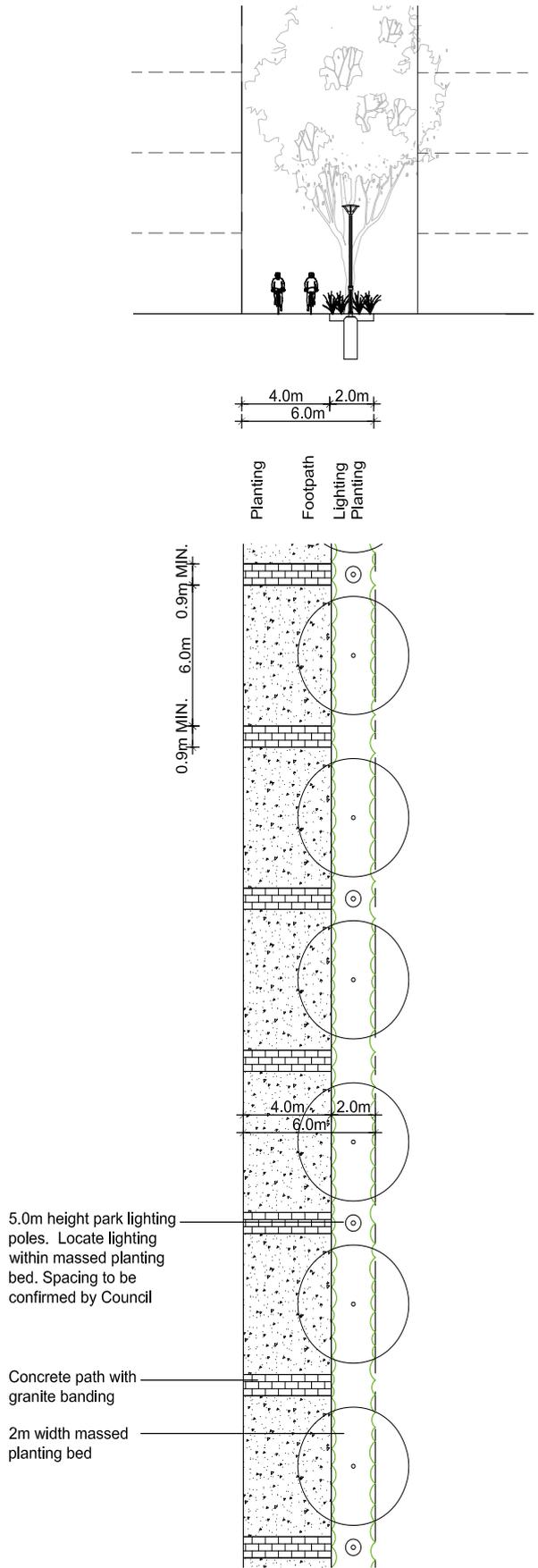


Figure 6.5.1 Typical Layout - New Pedestrian Ways (NOT TO SCALE)

6.6.1 Existing Streets - Delhi Road and Epping Road

Epping Road and Delhi Road are characterised by very wide verges in some locations and are both part of regional cycle routes. A consistent footpath width of at least 2.4 metres is required, with wider paved areas at bus stops and intersections in order to accommodate commuters and pedestrians waiting for traffic signals. This will also provide sufficient space for street furniture, kerb ramps, lighting, and bicycle racks.

Table 6.6.1.1 Typical Specifications for Delhi Road and Epping Road

Elements	Typical Specifications
Footpath	
Paved footpath	Full width at intersections and bus stops; 2.4-metre wide paving
Materials	Granite paving equal to black - flame exfoliated 600 mm x 300 mm x 60 mm (Refer to Fig. 3.2.1 <i>Macquarie Park Corridor Paving Plan</i>)
Kerb	Integral cast-in-situ concrete kerb and gutter; kerb ramp to be designed in accordance with desire lines, safety, and conflict zones (subject to Council's approval)
Driveway	Granite paving equal to black - flame exfoliated 150 mm x 100 mm x 60 mm
Landscaping	
Street Trees	<u>Epping Road</u> Native grass species in nature strip and trees within the 1.5-metre private property setback <u>Delhi Road</u> Trees planted approximately 4 metres apart in continuous garden beds (Refer to Fig. 3.4.1 <i>Macquarie Park Corridor Street Trees Plan</i> and typical layout diagram)
Nature Strip/ Garden beds	Native grass species such as <i>Lomandra Longifolia</i> ('Tanika' Spiny-head Mat Rush) or <i>Dianella caerulea</i> (Blueberry lily) (subject to Council and RMS approval)
Street Furniture	
Bollards	Installed as necessary Specification: LEDA SSP80F Fixed Bollard 80NB (900mm high) Finish: Linished or brushed Grade 304 Stainless Steel
Bike rack	2 per city block located close to intersections Specification: LEDA BR85F Bike Rail Dimensions: 850 x 1000 mm (200 mm in ground) Finish: 40NB(48.26) x 2.77mm Grade 304 Stainless Steel Pipe/Linished
Street Lighting	
Layout	Refer to <i>Street Lighting Schema for the Macquarie Park Business Area</i> (to be confirmed by Council)
Multi-function light pole	12 metres in height; refer to <i>Design Guide for Council-owned Street Lighting</i> for specification

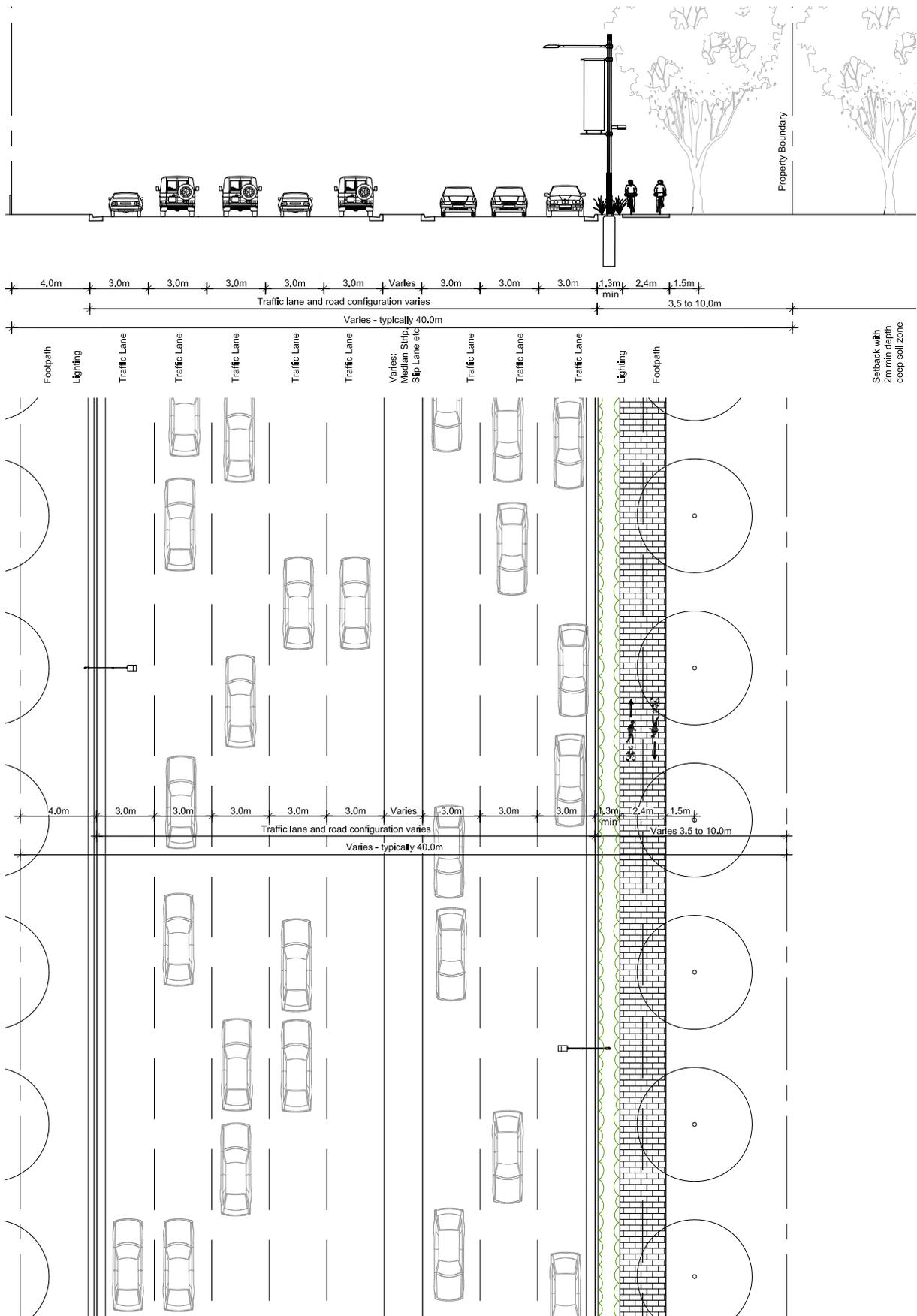


Figure 6.6.1.1 Epping Road Layout (northern side) - typically 40 metres wide (NOT TO SCALE)

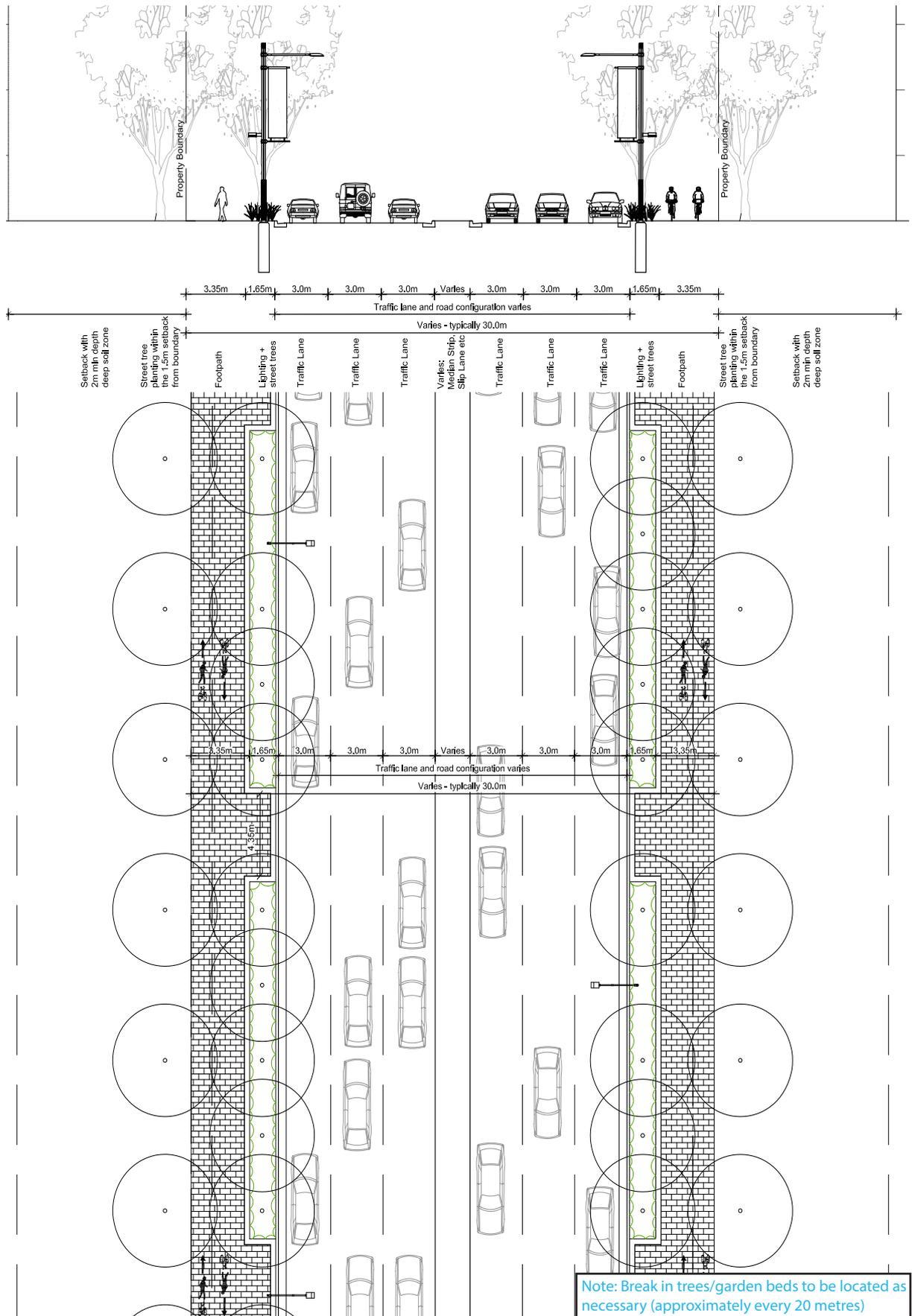


Figure 6.6.1.2 Delhi Road Layout - typically 30 metres wide (NOT TO SCALE)

6.6.2 Existing Streets - Mixed Use, Commercial, or Business Character

The following typical specifications apply to existing streets in the Mixed Use, Commercial Core, and Business Park zones within the Corridor.

Table 6.6.2.1 Typical Specifications for Existing Mixed Use/Commercial/Business Character Streets

Elements	Typical Specifications
Footpath	
Paved footpath	Full width: varies between approximately 2.4 to 5 metres
Materials	Granite paving equal to black - flame exfoliated 600 mm x 300 mm x 60 mm (Refer to Fig. 3.2.1 <i>Macquarie Park Corridor Paving Plan</i>)
Kerb	Integral cast-in-situ concrete kerb and gutter; kerb ramp to be designed in accordance with desire lines, safety, and conflict zones (subject to Council's approval)
Driveway	Granite paving equal to black - flame exfoliated 150 mm x 100 mm x 60 mm
Street Trees and Landscaping	
Herring Road	Trees planted in nature strip (approximately 8 metres apart) with native grass understorey such as <i>Lomandra Longifolia</i> ('Tanika' Spiny-head Mat Rush) or <i>Dianella caerulea</i> (Blueberry lily) (subject to lighting design and Council's approval)
Lane Cove Road	Trees within 1.5 metre private property setback only (subject to lighting design and other site-specific constraints)
Waterloo/ Secondary Roads	Trees planted in 1.5 x 3 m pits spaced approximately 8 metres apart (subject to lighting design and other site-specific constraints)
Tertiary Roads	Trees planted in nature strip (approximately 8 metres apart) with native grass understorey (subject to lighting design and Council's approval)
Street Furniture	
Seats	1 per city block; located near a point of interest Specification: Botton and Gardiner Urban Seat (US11ALX) Finish: Cast aluminium; powder coat
Bins	In regular intervals, typically 1 per city block and at certain locations such as outside train stations, bus stops, and outside shops (particularly food shops). Specification: City of Ryde model dual rubbish bins with butt bin Dimensions: 2 x 120 L; 15 mm perforations Finish: Marine-grade stainless steel; mounts to Council specification
Bollards	Installed as necessary Specification: LEDA SSP80F Fixed Bollard 80NB (900mm high) Finish: Linished or brushed Grade 304 Stainless Steel
Bike rack	2 per city block located close to intersections or bus stops Specification: LEDA BR85F Bike Rail Dimensions: 850 x 1000 mm (200 mm in ground) Finish: 40NB(48.26) x 2.77mm Grade 304 Stainless Steel Pipe/Linished
Street Lighting	
Layout	Spaced 40 metres apart; staggered configuration (subject to design)
Multi-function light pole	12 metres in height; refer to <i>Design Guide for Council-owned Street Lighting</i> for specification

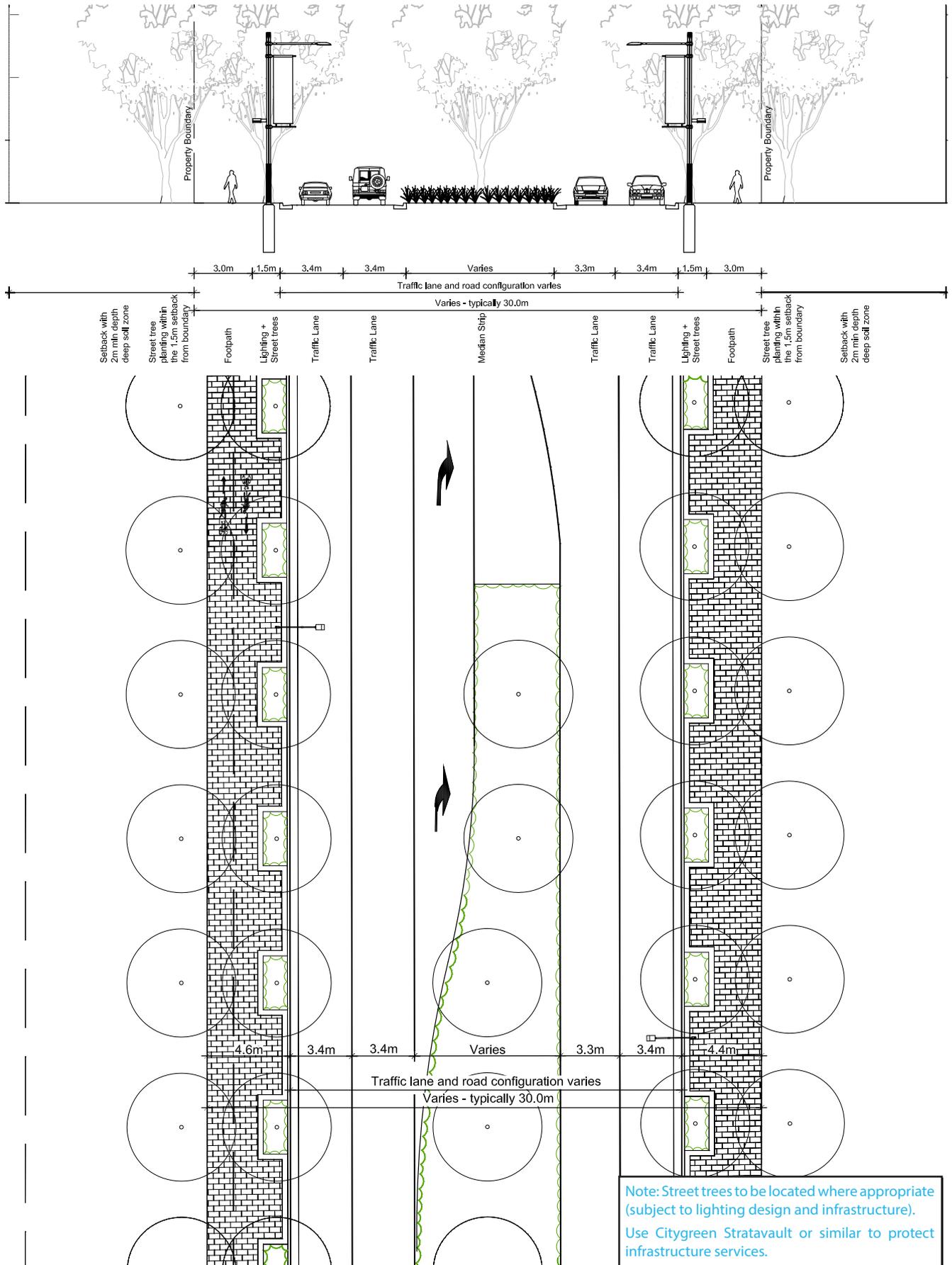


Figure 6.6.2.1 Typical Layout - Mixed Use, Commercial, or Business Character Street (NOT TO SCALE)
e.g. Waterloo Road - Typically 30 metres wide

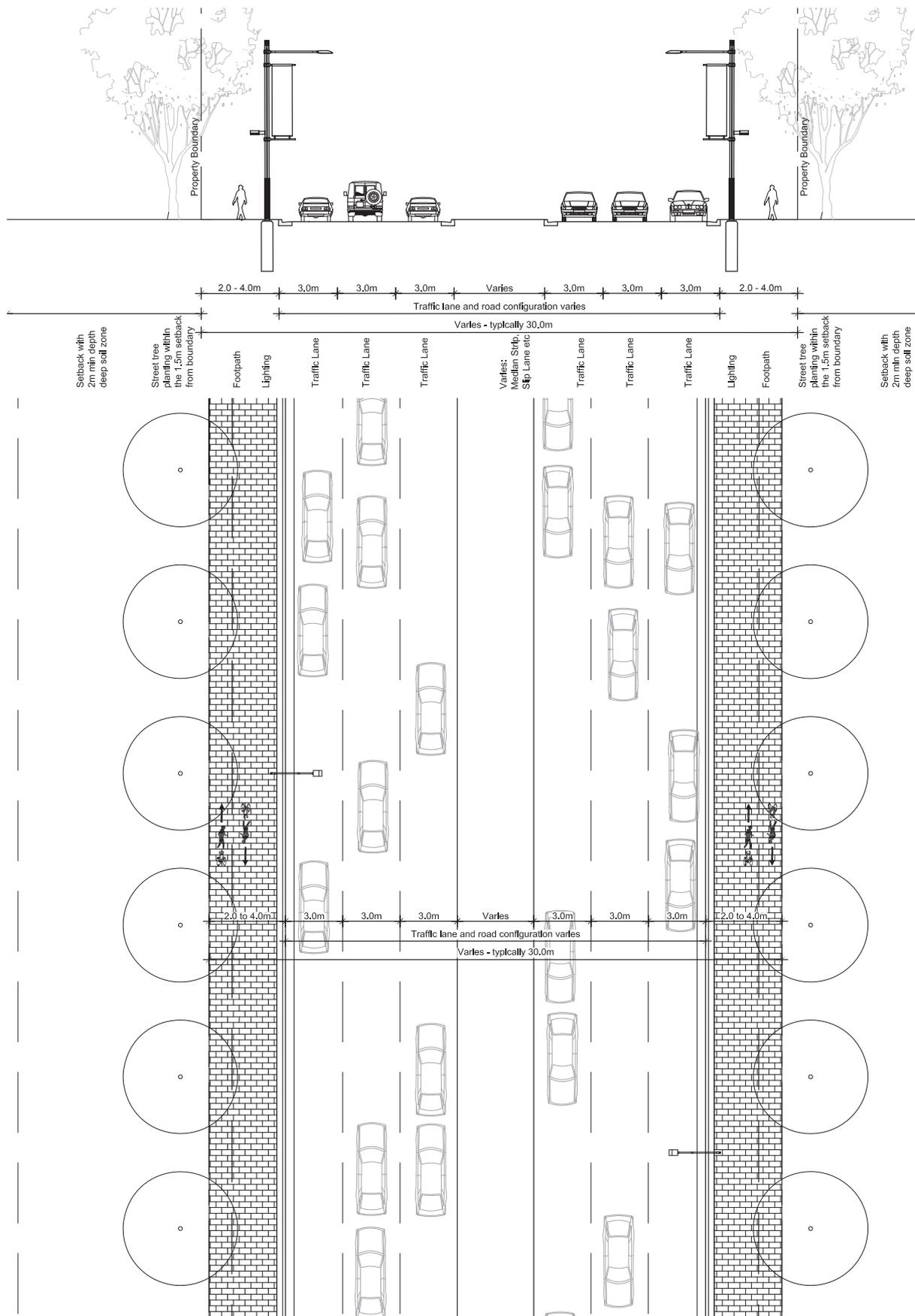


Figure 6.6.2.2 Typical Layout - Mixed Use, Commercial, or Business Character Street (NOT TO SCALE)
e.g. Lane Cove Road - Typically 30 metres wide

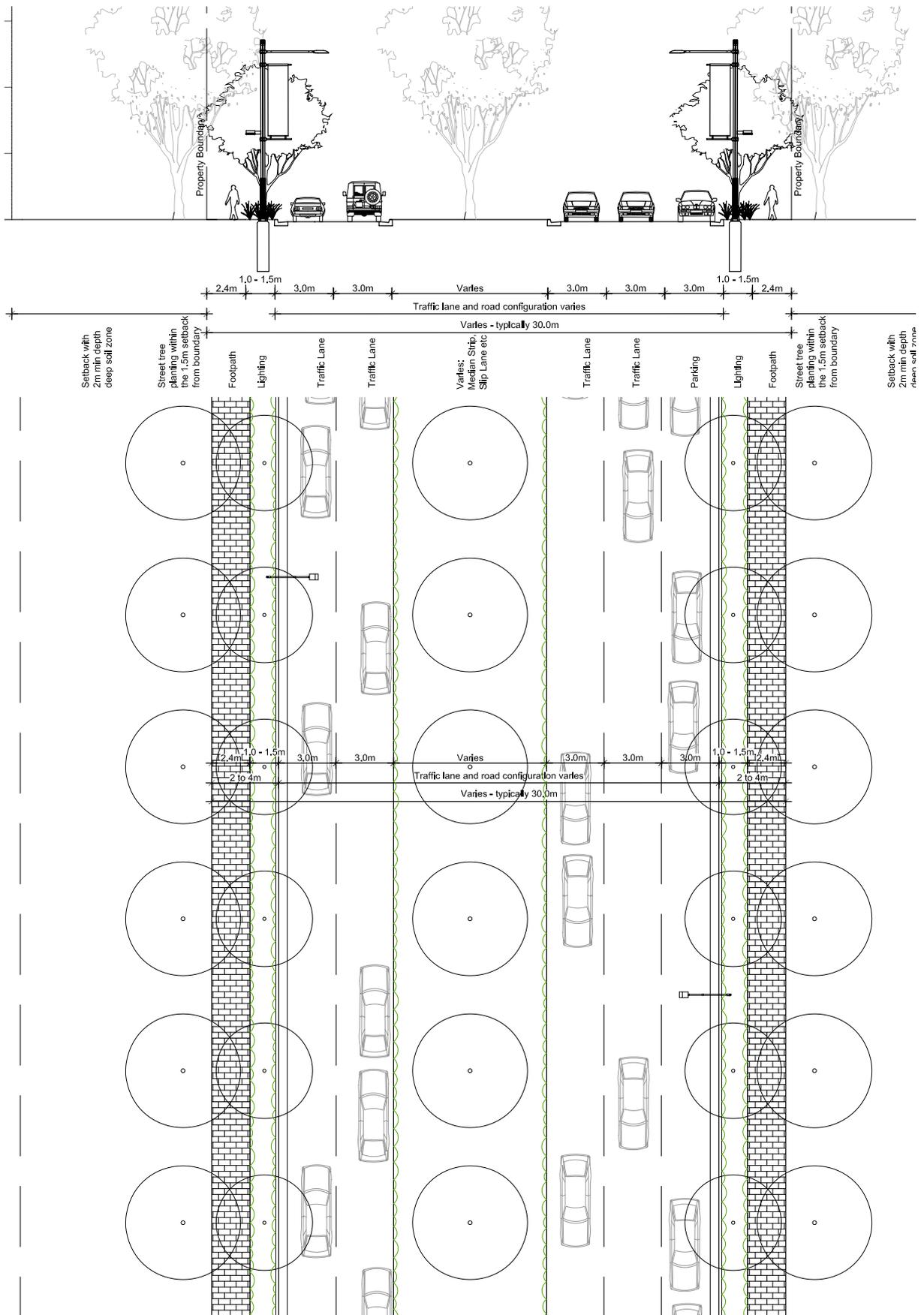


Figure 6.6.2.3 Typical Layout - Mixed Use, Commercial, or Business Character Street (NOT TO SCALE)
e.g. Herring Road - Typically 30 metres wide

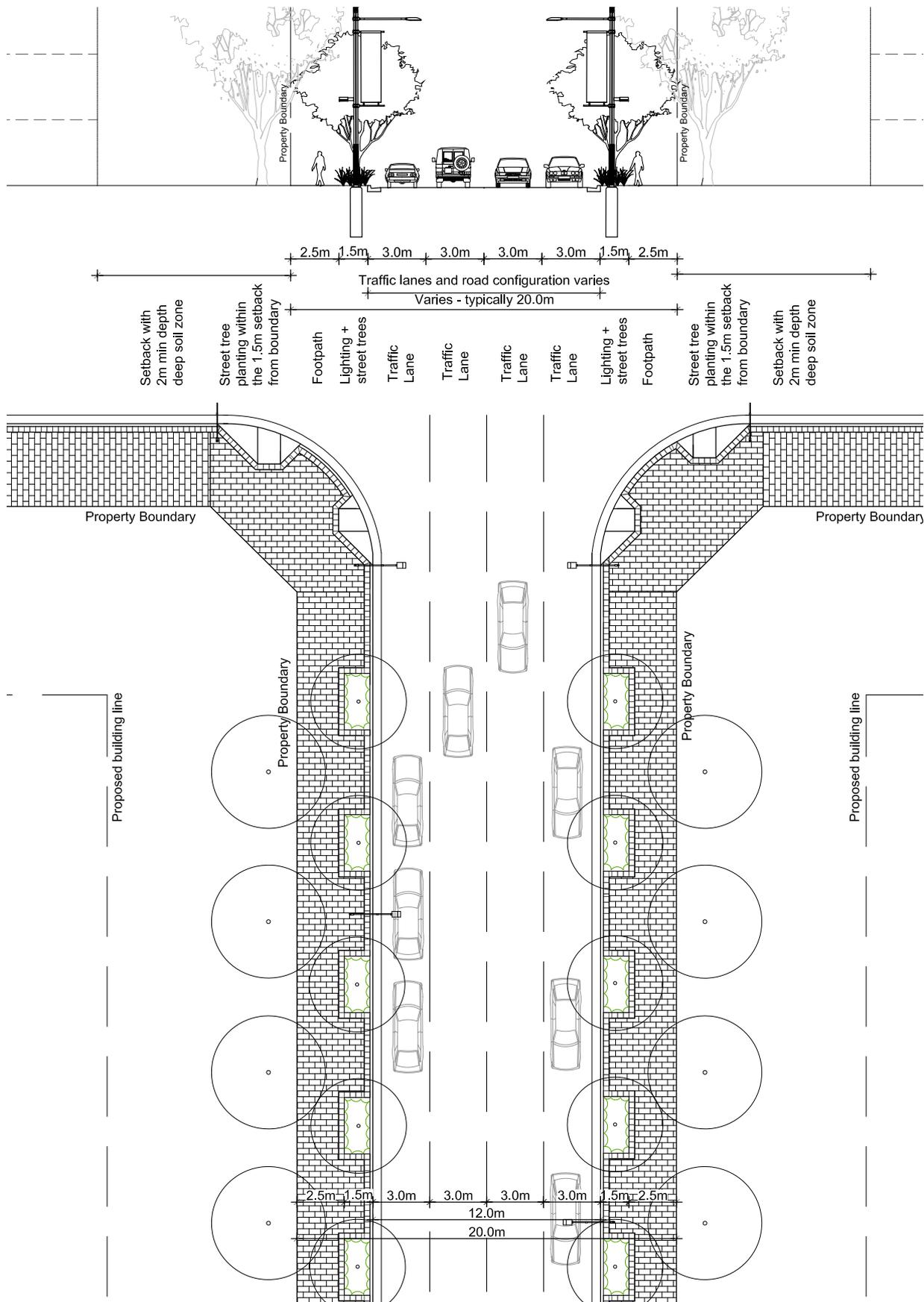


Figure 6.6.2.4 Typical Layout - Mixed Use, Commercial, or Business Character Street (NOT TO SCALE)
Secondary Road - Typically 20 metres wide

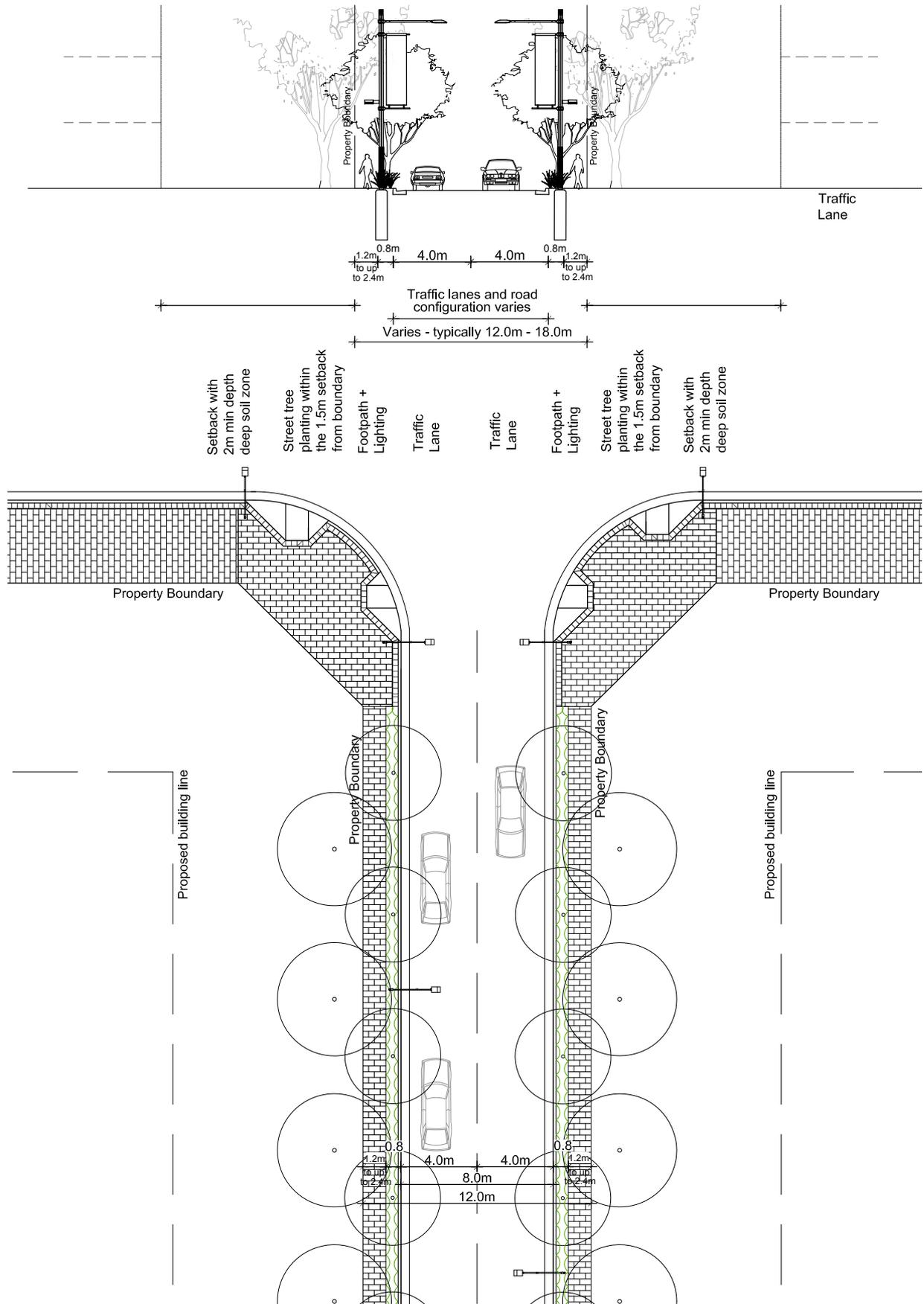


Figure 6.6.2.5 Typical Layout - Mixed Use, Commercial, or Business Character Street (NOT TO SCALE)
e.g. Tertiary Road - Julius Avenue - typically 12 to 18 metres in wide

6.6.3 Existing Streets - Residential Character

The following typical specifications apply to existing streets with a predominantly residential character within the Corridor.

Table 6.6.3.1 Typical Specifications for Existing Residential Character Streets

Elements	Typical Specifications
Footpath	
Paved footpath	Up to 2.4 metres (varies) (Refer to typical layout diagram)
Materials	Granite paving equal to black - flame exfoliated 600 mm x 300 mm x 60 mm (Refer to Fig. 3.2.1 <i>Macquarie Park Corridor Paving Plan</i>)
Kerb	Integral cast-in-situ concrete kerb and gutter; kerb ramp to be designed in accordance with desire lines, safety, and conflict zones (subject to Council's approval)
Driveway	Granite paving equal to black - flame exfoliated 150 mm x 100 mm x 60 mm
Landscaping	
Street Trees	To match existing; trees planted in 1.5 x 3 m pits spaced approximately 8 metres apart (subject to lighting design and other site-specific constraints)
Nature Strip	Native grass species such as <i>Lomandra Longifolia</i> ('Tanika' Spiny-head Mat Rush) or <i>Dianella caerulea</i> (Blueberry lily) (subject to Council's approval)
Street Furniture	
Bollards	Installed as necessary Specification: LEDA SSP80F Fixed Bollard 80NB (900mm high) Finish: Linished or brushed Grade 304 Stainless Steel
Bike rack	2 per city block located close to intersections or bus stops Specification: LEDA BR85F Bike Rail Dimensions: 850 x 1000 mm (200 mm in ground) Finish: 40NB(48.26) x 2.77mm Grade 304 Stainless Steel Pipe/Linished
Street Lighting	
Layout	Staggered configuration; refer to <i>Street Lighting Schema for the Macquarie Park Business Area</i> (subject to design and to be confirmed by Council)
Multi-function light pole	9 metres in height; refer to <i>Design Guide for Council-owned Street Lighting</i> for specification

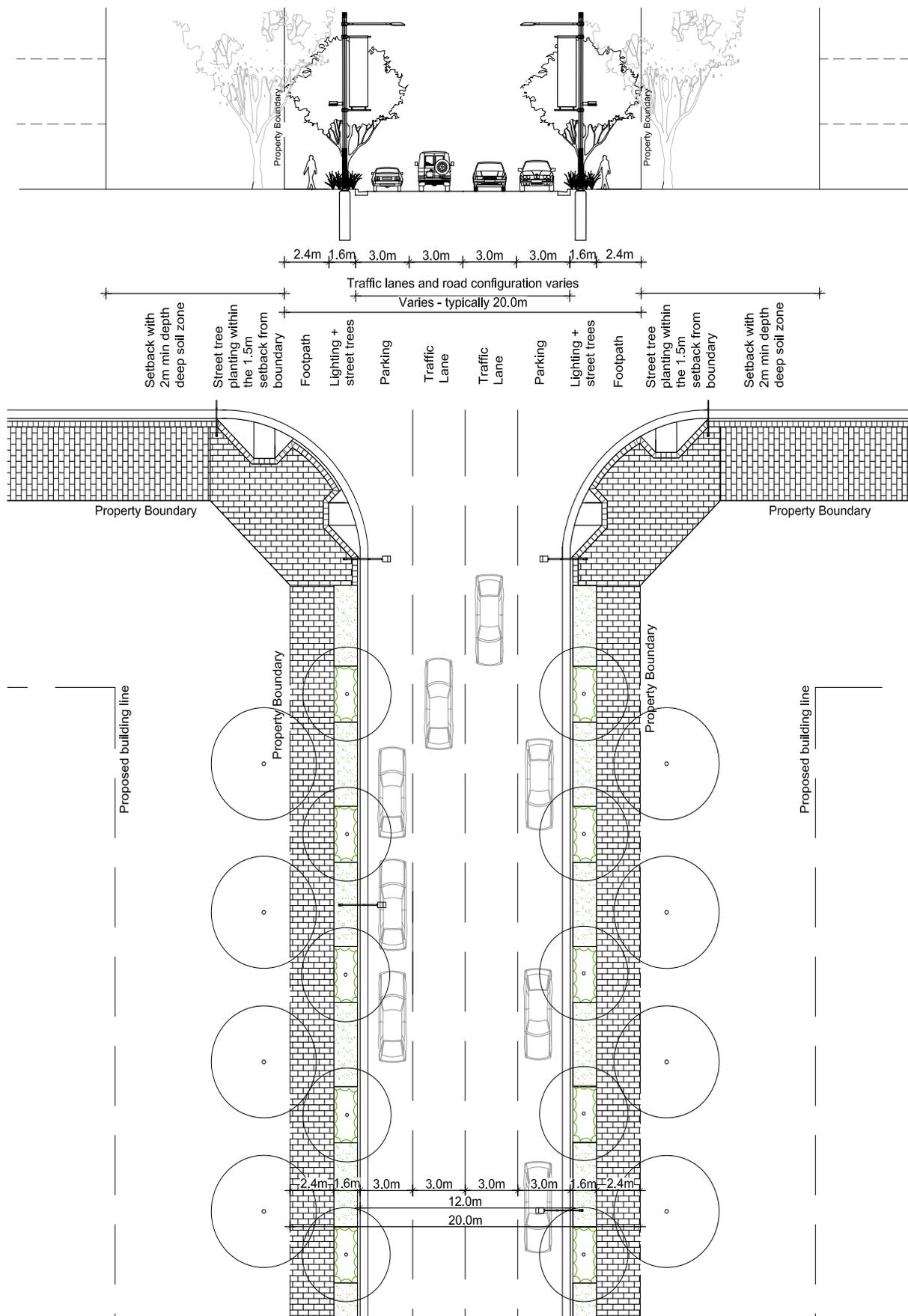


Figure 6.6.3.1 Typical Layout - Residential Character Street - typically 20 metres wide (NOT TO SCALE)

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