Schedule 2

Leppington Major Centre

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1 Introduction

1.1 Name and application of this Schedule

This Schedule forms part of the Liverpool Growth Centre Precincts Development Control Plan (also referred to as the DCP).

This Schedule applies to all development on the land within the Leppington Major Centre Boundary on **Figure 1-11-1**. This schedule and related amendments to the DCP give effect to the provisions of the DCP for land within the Leppington Major Centre as shown on the Land Application Map.

Notes:

The Leppington Major Centre is within the Leppington North Precinct. The Leppington North Precinct, and the Leppington Major Centre, is partly within Camden Local Government Area and partly within Liverpool Local Government Area. Separate DCPs apply for each Local Government Area.

Schedule 1 – Austral and Leppington North Precincts, provides specific controls for development within those Precincts, including lands that are within Leppington Major Centre. Applicants proposing development in the Leppington Major Centre should also refer to Schedule 1 to identify any controls in that Schedule which are also relevant to the proposed development.

1.2 Structure of this Schedule

This Schedule should be read in conjunction with the main body of the DCP, and Schedule 1, and is in addition to those parts of the DCP. In the event of an inconsistency between this Schedule and the main body of this DCP, this Schedule takes precedence. **Table 1-1** summarises the structure of this Schedule.

Table 1-1: Structure of this Schedule

Part	Summary
1 – Introduction	Identifies the land to which the Schedule applies.
2 – Town Centre vision and planning principles	Establishes an overall vision and planning principles to guide the ongoing development of the Leppington Major Centre.
3 – Town Centre Structure	Includes the Indicative layout Plan which shows the proposed future layout of the Major Centre. Establishes a hierarchy of streets within the Major Centre, and the function of each street type. Identifies key access routes for vehicles (cars and delivery vehicles), pedestrians, cyclists and public transport.
4 – Public Domain Controls	Provides specific objectives and controls that apply to the public areas of the Leppington Major Centre, including streets and laneways, plazas, squares and public open space.
5 – Building Controls	Controls to achieve a built form that is consistent with the town centre vision and planning principles. Controls relate to building heights, bulk and scale, and the positioning of buildings on the site, including setbacks, façade design, and energy efficiency.

Additional notes to readers are provided throughout this document. These notes are not part of the formal provisions of the DCP, but are intended to provide additional guidance and explanation of the provisions. If further guidance is required on the interpretation of provisions in the DCP, readers should refer to the definitions or contact Council for advice.

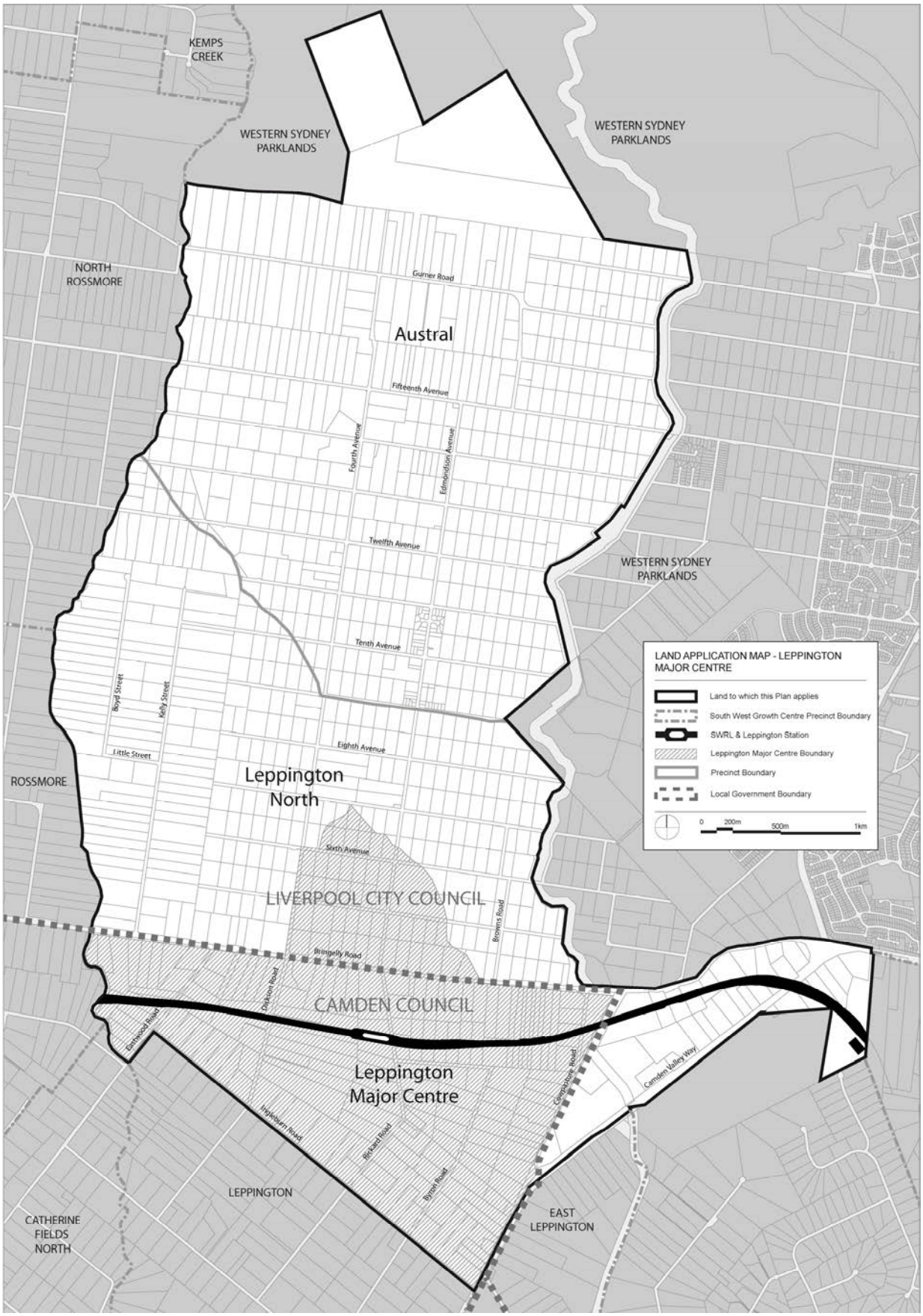


Figure 1-1: Land Application Map

2 Leppington Major Centre Vision and Planning Principles

2.1 Leppington Major Centre vision

Leppington Major Centre will be the primary focus for employment, retailing, entertainment and community services in the South West Growth Centre. It will grow progressively to become a Major Centre, consistent with the centre typology established by the Metropolitan Plan for Sydney 2036. The centre will be a destination for all residents in the South West Growth Centre, providing higher order services and facilities in addition to those found in local centres and neighbourhood centres.

Leppington Major Centre will be focused on the Leppington train station and an attractive public domain comprising a network of active streets, parks and plazas. Development will activate and enliven the public domain by encouraging the use of outdoor spaces for movement, recreation and socialisation.

The train station will provide both access to the centre, reinforcing its role as a regional employment hub, and from the South West Growth Centre to the rest of Metropolitan Sydney. An integrated road network, which builds on the existing roads and respects historic road alignments, will provide access for buses, cars, pedestrians and cyclists to the Major Centre.

Within the centre, the road network will create public spaces that are attractive to pedestrians and cyclists, while other roads will ensure good access to the centre for vehicles. Rickard Road will be the main transit boulevard: the key public transport, pedestrian and cyclist route to and from the centre and Leppington Station. The Main Street will be the focus of activity within the retail core and linking to the civic precinct north of the station. The Main Street will be activated by a high quality public domain and by development providing an active frontage to the street. The town centre streets will extend the network of active, pedestrian friendly streets throughout the centre. Perimeter roads (Eastwood Road, Dickson Road, Ingleburn Road, Byron Road, Camden Valley Way, Bringelly Road and Cowpasture Road) are the main vehicular access routes to and from the centre. Other internal roads and service lanes will provide efficient routes into the centre for cars, deliveries and service vehicles.

The layout of the centre capitalises on the natural features of the site. Public open space takes advantage of Scalabrini Creek and Bonds Creek, which form natural edges to the main commercial areas. The creek lines will serve an important role in drainage and water quality management, and also provide attractive green spaces for recreation and linkages through the centre and to surrounding residential areas. Landscaped streets will link the green spaces at the edges to the core of the centre, and water sensitive urban design measures will be integrated with street design to emphasise connections to the creeks.

A number of plazas, squares and parks will provide places for people to meet and play, and for the community to gather in the centre.

The centre will contain a mix of land uses to encourage vibrancy and to create a wide range of employment opportunities. The major land uses are clustered in sectors around Leppington Station:

- A retail core south of Leppington Station, with opportunities for mixed use development at the fringes integrating with the Scalabrini Creek parkland corridor.
- A civic precinct north of Leppington Station with education, cultural, recreation and human services for residents of the Growth Centre, in a vibrant mixed use area that connects Bringelly Road, the train station, Rickard Road and Scalabrini Creek.
- East of Rickard Road, a business park will create significant employment opportunities with commercial offices potentially associated with related uses such as warehousing or other low impact industries. The business park will be a major regional employment destination for the South West Sub-region.
- Bulky goods retailing and other related retail activities will take advantage of the high visibility of major roads including Bringelly Road and Cowpasture Road.
- Medium density residential development will be located within a number of pockets around the centre, within a 10 minute walk of Leppington Station.
- A light industrial precinct west of Dickson Road will provide significant employment opportunities and contain low impact industrial activities that meet the needs of the surrounding residential population.

The masterplan caters for long term growth, and because the major centre will develop over many years, planning controls are intentionally flexible to enable development to respond to dynamic market influences. The structural elements of the masterplan (the road network, open space network and general arrangement of land uses) are critical to creating a cohesive, functional and attractive centre. This DCP focuses on ensuring that development in the centre, at all stages of its growth, is consistent with the ultimate structure and function of the Leppington Major Centre.

2.2 Planning Principles

Note: *Part 5 of the DCP contains principles for town centres generally, which also apply to the Leppington Major Centre. The principles that follow should be read in conjunction with the principles in Part 5.*

2.2.1 Land use

1. A wide range of commercial, retail, community services, educational, light industrial, entertainment and recreational opportunities are available in Leppington Major Centre.
2. Opportunities for residential development exist within medium density residential areas and mixed use areas within or near the centre and within walking distance of Leppington Station.
3. Related land uses take advantage of opportunities to locate near each other to maximise access to services and the efficient provision and use of ancillary functions such as car parking.
4. The mix of land uses within the centre creates high levels of activity, and a vibrant, attractive centre.
5. The scale, intensity and function of land uses reinforces Leppington's role as a Major Centre and draws people to the centre from across the South West Growth Centre.
6. Land uses take advantage of public transport provision and the major road network, both of which make Leppington a preferred location for major employment generating land uses.
7. Development responds to existing patterns of subdivision and land ownership to make efficient use of land as the centre progressively develops.
8. Development will increase in intensity and scale, and a number of major stages in growth of the centre will occur over a period of 20-30 years.
9. At each stage in the development of the major centre, land uses and the form of development will be consistent with the vision for the major centre.

2.2.2 Transport and access

1. A hierarchy of streets creates clearly legible routes for pedestrians, cyclists, public transport, cars and service vehicles to access and circulate within the centre.
2. The function of each street type is clearly defined, including the relative priority that is given to different modes of transport for each street type.
3. Streets are designed and constructed to minimum standards that will facilitate the establishment of a high quality streetscape and provide sufficient capacity for pedestrians, cyclists and vehicles to move throughout the centre.
4. Streets are safe, attractive and interesting elements of the public domain.
5. The South West Rail Link is a key transport connection to Metropolitan Sydney from the South West Growth Centre, and an important connection to Leppington Major Centre, particularly for workers in

the centre. Access to and from Leppington Station, particularly for pedestrians, cyclists and buses is a critical element of the town centre road network.

6. All streets within the centre are characterised by low traffic speeds, with an emphasis on pedestrian amenity and safety.

7. Rickard Road is the main focus of activity within the centre, and is a low speed traffic environment that gives priority to buses, pedestrians and cyclists. It is the primary access route to the transport interchange and Leppington Station.

8. The Main Street is the focus of activity in the retail core of the centre. Retail, commercial and residential development activate the street, along with pedestrians, cyclists, cars and buses.

9. Bringelly Road, Ingleburn Road, Dickson Road and Byron Road are the primary access routes to the centre for cars and service vehicles.

10. Eastwood Road and Cowpasture Road support the primary access routes providing secondary access to the peripheral areas of the town centre from surrounding areas.

11. Town Centre Streets are active and pedestrian friendly, and have capacity for buses to circulate within the centre. They provide important vehicle access routes into the retail and commercial developments. Subject to demand, Town Centre Streets may have active ground floor frontages.

12. Service Lanes provide direct vehicle access to internal car parks and loading bays. They also cater for pedestrian though site links, but do not necessarily support active frontages.

13. Pedestrian Through-Site Links are pedestrian only connections at mid-block locations, to improve pedestrian permeability within the centre, and to connect and activate squares and plazas.

2.2.3 Public domain

1. The public domain comprises a network of streets, plazas, and public open space that are accessible at all times of the day, connect places within the centre and provide a consistent, high quality character and amenity that defines the Leppington Major Centre.

2. Elements of the public domain may be constructed by Council or other parties but are designed and constructed to consistent standards to unify development across the town centre.

3. Landscaping of streets, parks and plazas enhances the quality of the public domain, provides protection from the sun, and links the natural features of the town centre with the urban areas.

4. Materials and finishes are consistent for elements such as paving, street furniture, lighting, and elements that link the public and private domains such as building facades and awnings.

5. The design of streets reinforces their role in the road hierarchy and provides a safe, attractive and legible network for cars, pedestrians, cyclists and public transport.

6. Green links along Scalabrini Creek and Bonds Creek create an interface between the urban, built up parts of the centre and the natural features which contribute positively to the identity of the centre.

7. Landscaped streets connect green spaces with the urban plazas and squares that provide a focus for activity within the built up parts of the centre.

8. The orientation of streets takes advantage of and emphasises views to local features particularly Scalabrini Creek and Bonds Creek.

9. Streets and pedestrian through site links terminate at or link public parks, plazas and squares.

10. Plazas or squares are integrated with adjoining buildings and create opportunities for people to congregate within the centre.

11. Elements of water cycle management are integrated with the street network and public spaces to capitalise on the contribution of water to the amenity and character of the centre.

12. The design of the public domain achieves energy efficiency.

2.2.4 Built form

1. The design, orientation, size and bulk of buildings compliment the public domain.

2. Building heights emphasise the natural features of the Major Centre, including ridgelines and creek corridors.

3. The location and orientation of buildings takes advantage of and emphasises views to local and more distant features, including views to Scalabrini Creek, Bonds Creek and more distant views to the Blue Mountains.

4. The built form contributes to a legible town centre by highlighting key destinations and creating landmarks.

5. Building orientation, building heights and the design of building facades enhance safety and amenity in the public domain, including streets, parks, plazas and the creek corridors.

6. Taller buildings are clustered along Rickard Road and near Leppington Station.

7. The bulk of taller buildings is minimised by a fine grained road network and by limiting the floorplate of taller building elements.

8. Mid-block pedestrian or vehicle links are encouraged to improve pedestrian circulation and to reduce the horizontal bulk of buildings.

9. Along Rickard Road, the Main Street and Town Centre Streets, and fronting public squares and plazas, buildings are built to the front property boundary to define the public domain and assist the transition between private and public areas.

10. Ancillary activities such as parking, loading and service areas are visually screened from the public domain, are orientated towards and gain access from, Town Centre Streets or Service Lanes.

11. Buildings are orientated to take advantage of solar access and provide protection from prevailing winds both for building occupants and in the public domain.

12. The design and construction of buildings maximises energy efficiency, minimises water use and maximises water re-use, and considers the embodied energy of materials used in construction.

13. Development in the vicinity of listed heritage items respects and responds to the heritage significance of those items.

3 Town Centre Structure

3.1 Indicative Layout Plan

Objectives

a. To enable development to occur within Leppington Major Centre in accordance with the Indicative Layout Plan.

Controls

1. Development within the Leppington Major Centre is to be generally in accordance with the Indicative Layout Plan at **Figure 3-13-1**.

3.2 Public Domain

Objectives

a. To establish a structure for the public domain that connects and integrates development within the Leppington Major Centre.

b. To ensure that elements of the public domain are designed and constructed to appropriate standards, and that satisfactory arrangements are in place for the ongoing management and maintenance of the public domain either by Council or land owners.

Controls

1. Elements of the public domain include:
    - Streets
    - Pedestrian through-site links
    - Public parks and drainage land
    - Plazas
2. Public domain elements are to be located as shown on the Indicative Layout Plan.
3. Elements of the public domain that are zoned RE1 Public Recreation or SP2 Infrastructure can be delivered by Council, or may be constructed in accordance with this DCP by another party and dedicated to Council, subject to the agreement of Council.
4. Elements of the public domain that are zoned for purposes other than those listed in Control 3 above are the responsibility of the applicant, and details of the proposed design, construction and operational management of public domain elements are to be included in Development Applications.

Note: *Council may accept dedication of public domain elements such as plazas and squares subject to certain conditions. However, Council may require that these elements remain in private ownership and are maintained and managed by the land owner to appropriate standards. Applicants are encouraged to*

incorporate these elements of the public domain in development proposals in the Leppington Major Centre, and these proposals should be discussed with Council prior to submission of an Application.

5. Access is to be available to the public domain at all times of the day and night.

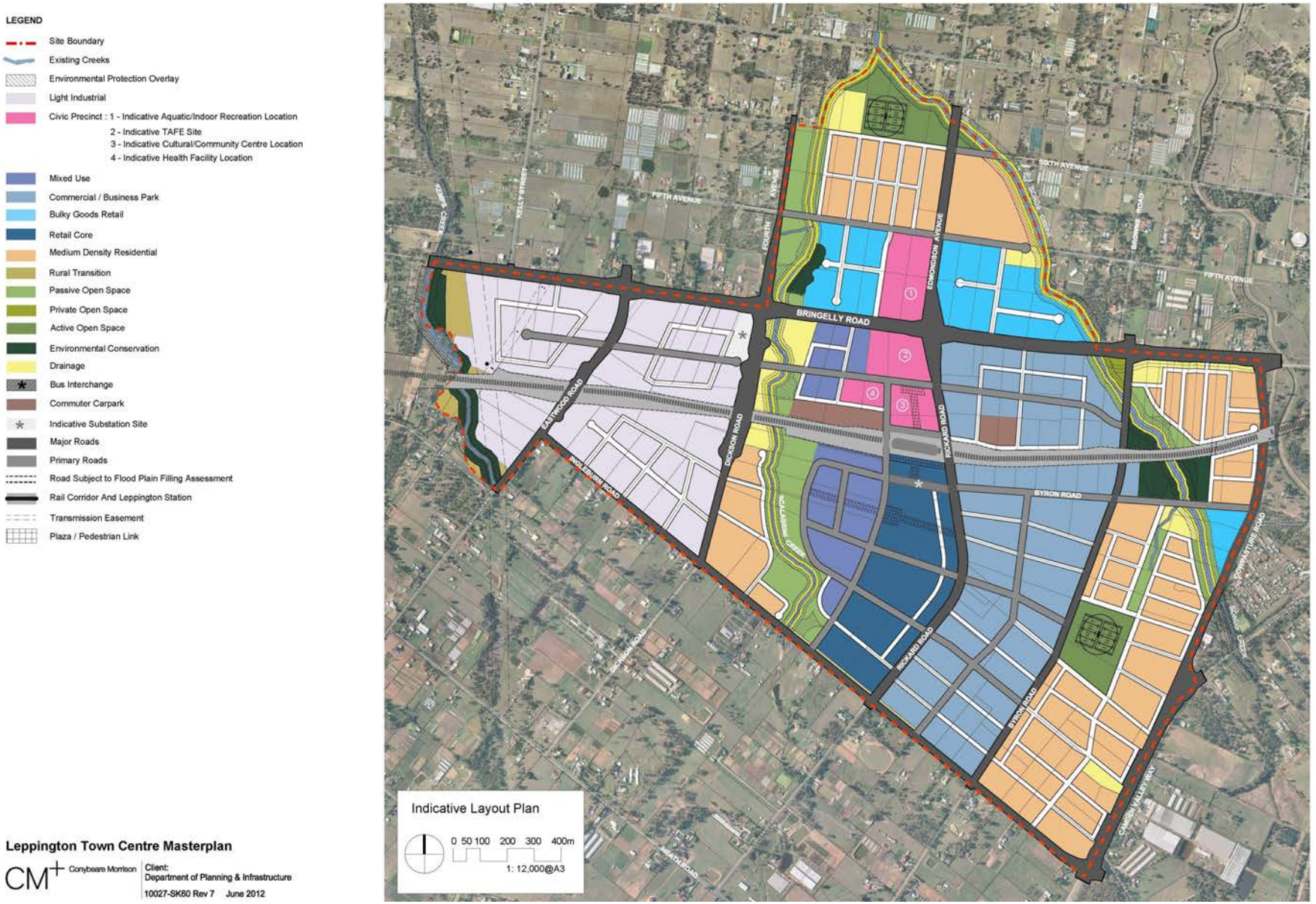


Figure 3-1: Indicative Layout Plan

3.3 Road hierarchy and circulation

Objectives

a. To ensure that the development of the Leppington Major Centre is based on a coordinated, integrated hierarchy of streets that connects places within the centre and to the road network beyond the centre;

b. To encourage walking, cycling and public transport as the dominant transport modes within the centre, while recognising the importance of private vehicles and service vehicles to the viability and functionality of the centre;

c. To ensure that the function of streets provides for all modes of transport, and that conflicts between pedestrians, cyclists, buses, cars and service vehicles are minimised;

Controls

1. The locations of streets are to be as shown on the Indicative Layout Plan.

2. The hierarchy of streets within the centre is shown on **Figure 3-23-2**. Streets are to be designed and constructed in accordance with this hierarchy and with **clause 4.1** of this Schedule.

Note: *typical cross sections for sub-arterial roads, local residential streets and residential collector roads are specified in clause 3.2.3 of the main body of this DCP. Streets of these types as shown on* ***Figure 3-23-2*** *are required to be designed in accordance with those requirements where they are within land zoned primarily for residential purposes, or are roads that are identified as sub-arterial roads.*

3. Modifications to the street network will be considered by Council only where the proposed street network:

    - Achieves the same outcomes in terms of traffic circulation;
    - Maintains the hierarchy of streets within the centre and opportunities for active street frontages to be created on the Main Street and Town Centre Streets;
    - Enables efficient and safe pedestrian and cyclist movement around the town centre;
    - Provides efficient access for cars to car parks and service vehicles to loading docks;
    - Is consistent with requirements for bus access in and around the centre and to the Leppington Transport Interchange;
    - Enables appropriate management of stormwater including connections to trunk stormwater basins shown on the Indicative Layout Plan;
    - Does not unreasonably impact on the ability of adjoining land owners to develop their land in accordance with the Indicative Layout Plan;
    - Is consistent with the Planning Principles in **clause 2.2** of this Schedule.

4. Additional mid-block streets (eg. Service Lanes) or Pedestrian Through-Site Links may be proposed where the additional street or link:

- Improves pedestrian movement or the circulation of traffic within the centre;
- Improves access to development for loading and service vehicles or for access to internal car parks;
- Integrates with the modified grid network of streets in the centre as shown on the Indicative Layout Plan;
- Meets relevant road safety requirements for intersection locations and road geometry;
- Is publicly accessible at all times;
- Does not significantly reduce the amount of pedestrian and vehicular activity on the Main Street or Town Centre Streets so as to jeopardise the creation of vibrant and active public spaces and the viability of businesses;
- Is constructed to withstand vehicular traffic for emergency and event access.

5. Traffic management measures are to be utilised within and surrounding the Major Centre to produce a low speed pedestrian friendly traffic environment, particularly on the Main Street and Town Centre Streets. Traffic management devices are to be identified at the time of DA submission.

6. Principles of CPTED (Crime Prevention through Environmental Design) are to be incorporated in the design of the street network.

7. Pedestrian and cycle links are to be provided along the streets in the major centre and in other areas of the public domain, as shown on **Figure 3-33-3**.

8. Streets and pathway networks are to be designed to ensure that walking and cycling take priority over traffic circulation.

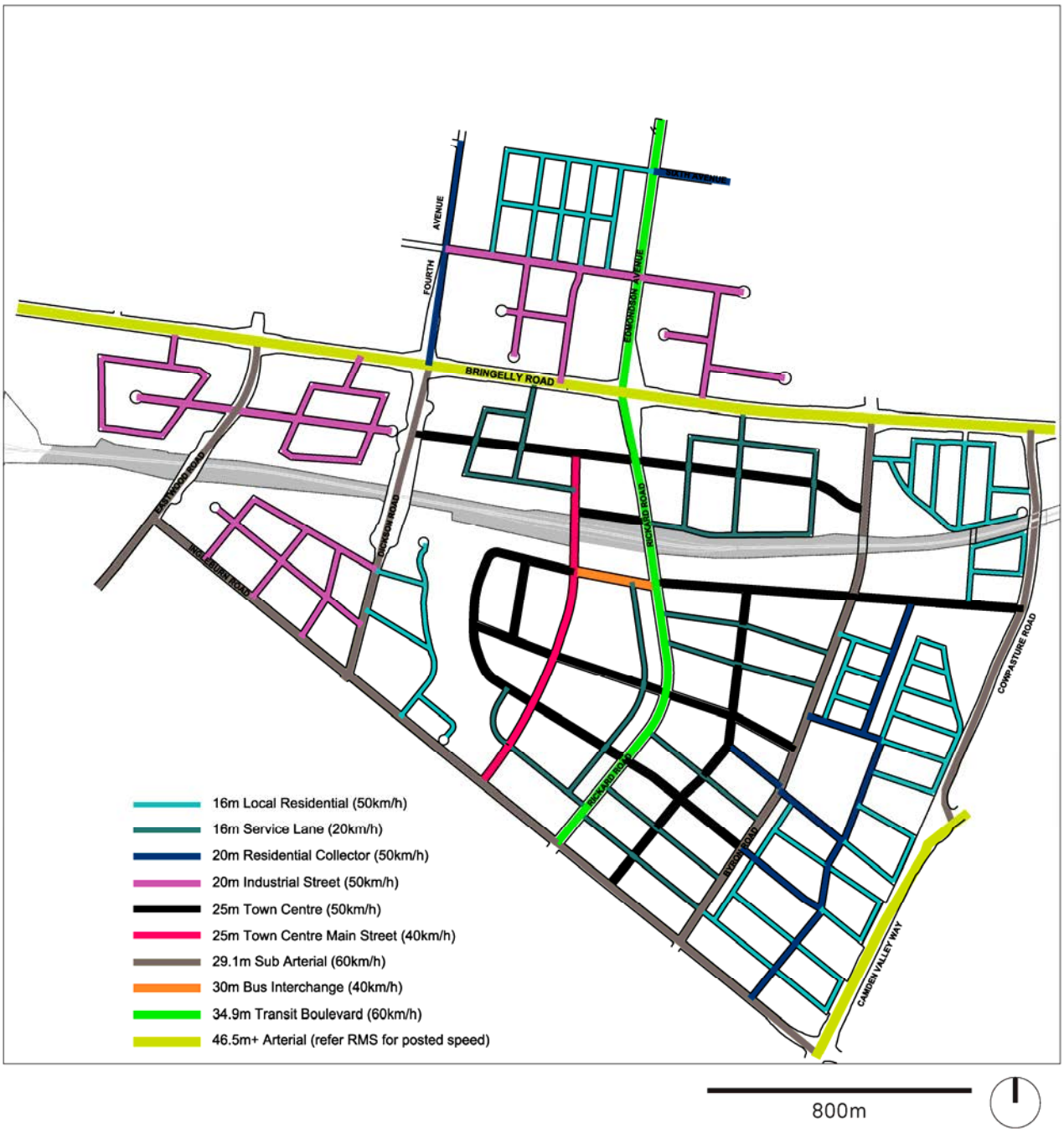


Figure 3-2: Leppington Major Centre road hierarchy

Note: *The speeds specified in the figure above are indicative design speeds. Posted speeds will not exceed these speeds and in some cases may be lower to achieve safety and amenity objectives for the Leppington Major Centre.*

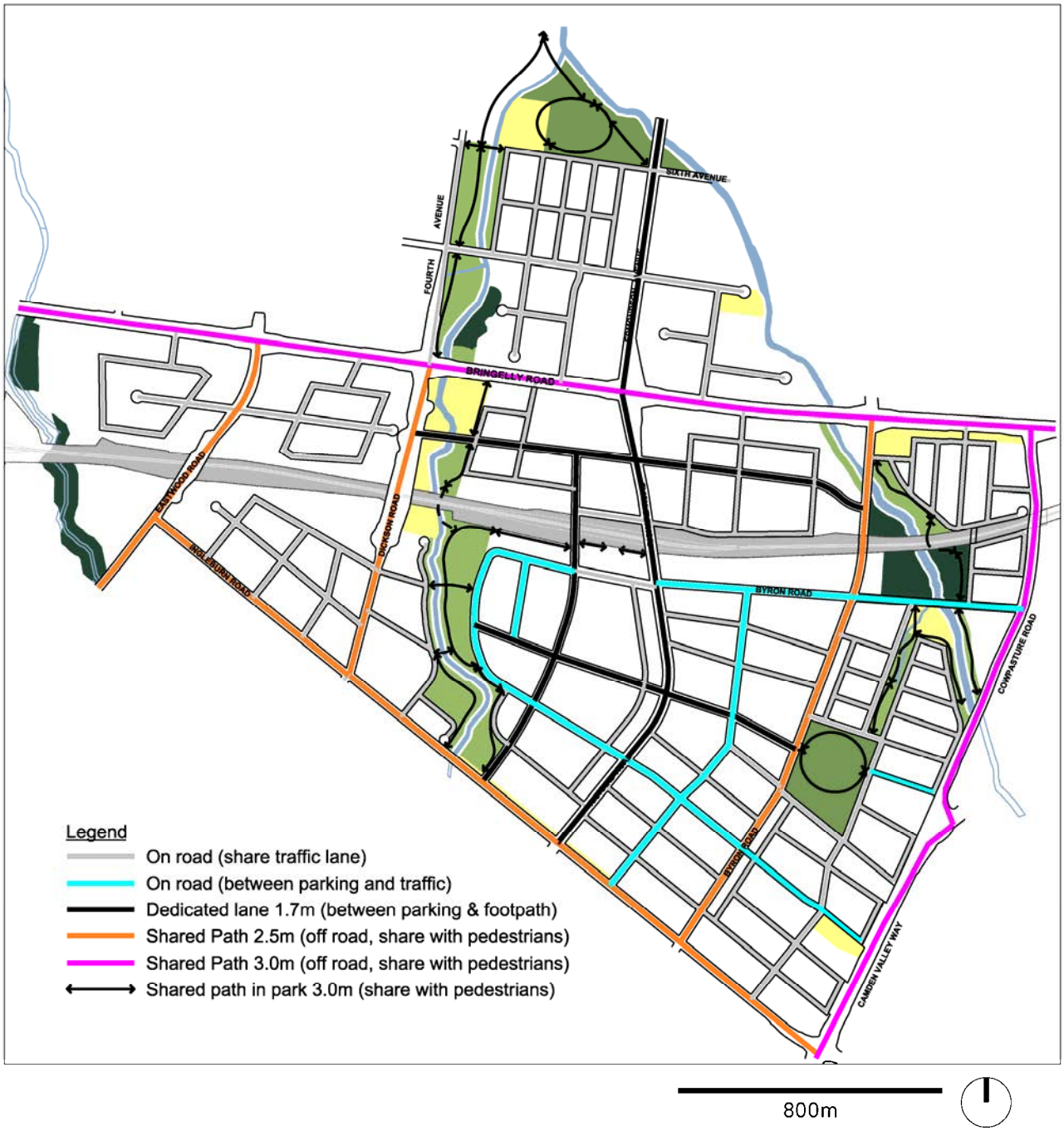


Figure 3-3: Pedestrian and cycle routes

4 Public Domain Controls

4.1 Materials

Objectives

a. To ensure that, as the Major Centre develops, consistent materials and finishes are used throughout the public domain.

b. For the public domain within the Major Centre to unify the character and amenity of the centre.

c. To ensure that materials are durable, easy to maintain and attractive.

Controls

1. Leppington Major Centre will have a unified and integrated character through consistent materials, details, finishes and treatments.

2. Materials used in the public domain are to be consistent with **Table 4-1** and demonstrate implementation of the materials selection principles below.

3. Criteria for the selection and use of materials, elements and finishes within the public domain of the Major Centre are:

    - design – items are to be functional and meet the needs of the Major Centre;
    - aesthetics – items are to relate to the scale, style and character of the Major Centre;
    - availability and ongoing supply – selection of items such as furniture and pavements e.g. should have a long term view of availability and supply for replacement parts and servicing;
    - cost – items are to be affordable and within the means of ongoing the Major Centre public domain managers;
    - maintenance – items must be easily maintained and not have onerous demanding ongoing maintenance requirements
    - life span / longevity – items selected should be looking at as long a lifespan as feasible to ensure the Major Centre public domain managers are not incurred with expensive recurrent replacement costs;
    - workability – items should be chosen for their simplicity;
    - sustainability – ESD principles of each item selected should be reviewed prior to final selection;
    - accessibility – all items must conform to the *Australian Disability Discrimination Act 1992* and relevant Australian Standards;
    - vandal resistance – all items must be implemented with view to reducing vandalism and a suitable repair programme in place;

- safety - items must conform to relevant codes and Australian Standards.
- Engineering Standards - items must comply with Council's Engineering Specifications

Table 4-1: Materials guidelines for the public domain

Item	Element	Guideline
Concrete Insitu	Joints	Expansion and control joints to align with building and alternative path edges where possible. Trip stops or equivalent to be used near trees - refer to Council's Engineering Specifications.
	Base Course	Compaction and material to be determined by consent authority - refer to Council's Engineering Specifications.
	Finish	Streets Even textured slip resistant surface to finish level Class B. Perpendicular Broom Finish with steel trowel margins
	Colour	Main path colour to be standard grey concrete. Feature concrete areas to be determined by consent authority. Dark tones can be used to create contrast with the main concrete colour, but limit area of coverage to reduce heat absorption.
	Hazard and Directional Tactile Indicators	Stainless Steel studs or product determined by consent authority. Provide 45% luminance contrast in accordance with (AS1428.4)
	Testing/Slip Resistance	Slip resistance test results required on sample installation.
	Maintenance/Cleaning	High pressure hosing / street sweeper. Maintenance program to be determined by consent authority.
Unit Pavers	Unit Size	To be determined by consent authority. Typically 400x400mm in stretcher bond pattern
	Base Course	Concrete slab support base approved by consent authority - refer to Council's Engineering Specifications. Pavers mortared onto concrete base
	Joints/Sealants	Expansion and control joints to align with building and alternative path edges where possible. To be determined by consent authority (Australian Standards) Pavers to be sealed in accordance with consent authority (AS)
	Finish	Streets/Pathways: semi-honed.
	Colour	To be determined by consent authority. Mid-tones are preferred to reduce glare and minimise heat absorption.
	Hazard and Directional Tactile Indicators	Stainless Steel studs or product determined by consent authority. Provide 45% luminance contrast in accordance with (AS1428.4)
	Testing/Slip Resistance	Slip resistant test results on loose tile samples with sealer and a sample installation.
	Maintenance/Cleaning	Sealant applied in outdoor dining areas High pressure hosing / street sweeper cleaning.

Item	Element	Guideline
		Maintenance program to be determined by consent authority.
	Tree Pit Edging	Steel edging to be installed tree pit perimeter edges to contain pavers. Steel edging to be secured to support concrete slab subbase.
Lighting	Lighting Levels	Streets/Road Reserves: P1 - P5 Pathways (Including Cycleways): P1 - P4 Public Activity Areas and Open Space (Excluding Car Parks): P6-P8 Connecting Elements (Steps, Stairways, Ramps, Footbridges, Pedestrian ways): P9-P10 Outdoor Carparks: P11 - P12
	Poles	Unpainted Proprietary Banner mounting system for Main Street Height of luminaires mounting determined by lighting engineer
	Luminaries	Luminaries to be consistent with lighting levels and Light spill requirements. To be determined by consent authority (AS)
	Light Spill	Lighting not to spill into residential areas. Lighting to focus on Street and Pedestrian pavements. To be determined by consent authority (AS)
	Catenary Lighting	Catenary lighting can be used in Town Square. To be determined by consent authority (AS)
Furniture	Bollards	Bollards to be used to control where maintenance vehicle access is required into pedestrian plaza areas Removable bollards required in emergency access and maintenance access areas. Bollards to be of consistent design.
	Barriers	Fence/Balustrade Structural Designated fencing to be provided along high level road medians and street edges to discourage pedestrian road crossing. Custom or proprietary fencing design to be determined by consent authority. Planting Designated hedge planting installed at medium level road edges and road medians to discourage pedestrian road crossing.
	Rubbish Bins	Rubbish Bins to be provided at pedestrian nodes, including crossing points. All rubbish bins to be of consistent design. Recycling Rubbish Bins to be provided in pedestrian gathering areas. Bin selection should consider bird/animal protection. Rubbish Bins and rubbish removal maintenance schedules to be determined by consent authority.
	Bench Seating/Feature Seating	Bench seating to be provided at regular intervals in the Town Centre Streets. Timber slat seating and backrest supports preferred. Custom bespoke seating can be considered in the Town Square.
	Bicycle Racks	Provide bicycle racks on hardstand areas only. Locate clear of pedestrian thoroughfares. Surface mounted, with tamper-proof fixings.
	Bicycle Rails	Locate in accordance with Austroads Part 14 – Bicycles. To be fabricated in accordance with Camden Council Standard Pathway Rails SD06.
	Drinking Fountains	Drinking fountains to be universally accessible. Locate clear of pedestrian thoroughfares.

Item	Element	Guideline
		Drinking fountain to be surface mounted.
	Shelters	Shelters and shade structures are to be: provided in open space areas and riparian corridors where sufficient immediate shade or weather protection is not available or where a sense of enclosure is considered desirable; provided over table and bench settings and table seats where weather protection is desirable; sited so that roof water is shed into garden areas; installed on hard wearing surface; surface mounted, with tamper-proof fixings; installed level, not at grade with pavement.
	Viewing Platforms	Boardwalks and Viewing Platforms maybe used to: provide access over spillways or viewing opportunities over water bodies; provide recreational or interpretational opportunities in riparian corridors or wetland areas; installed on hard wearing surface; surface mounted, with tamper-proof fixings; installed level, not at grade with adjacent surface.
	Tables	provided in association with benches in open space areas. installed on hard wearing surface. surface mounted, with anti-vandal fixings. installed level, not at grade with pavement.
	Handrails and balustrades	Handrails and balustrades to be in accordance with BCA and AS 1428.
Street Trees	Tree Guards	Tree Guards to be installed in major pedestrian gathering intersections. To be consistent design along street. To be determined by consent authority. Root guards to be installed.
	Tree Pits	Pit Covers Pit covers to be consistent along street and be flush with adjacent paving. To be determined by consent authority. Edging Steel edging required for trees in Unit Paving and Asphalt
Playgrounds	Playing Surface	High use areas (eg. District Playground) Rubber softfall to Australian Standards Low use areas (eg. Local Playground) Bark mulch to Australian Standards
	Playground Equipment	Refer Landcom Open Space Design Guidelines (2008), p25-26.
Exercise stations	Exercise Equipment	Exercise equipment to cater for a range of age groups. Provide proprietary items to Australian Standards installed to manufacturer's recommendations.
Tactile indicators	Pedestrian walkways	Provide tactile indicators on pedestrian crossing points as required by the consent authority. Consider other users impeded by tactile indicators such as wheelchairs and prams. Coordinate locations with pavement layout.

4.2 Landscaping

Objectives

a. To ensure that, as the Major Centre develops, species selection and landscape design adopt consistent themes.

b. For the public domain within the Major Centre to unify the character and amenity of the centre.

c. To ensure that species are appropriate to the environment of the Major Centre and contribute to the amenity and comfort of people in the Major Centre.

Controls

1. Leppington Major Centre will have a unified and integrated character through a consistency of species selection and landscaping design in the public domain.

2. Plant species are to be selected predominantly from the lists in the tables that follow, noting that recommended species are suitable for different parts of the public domain, including streets, plazas and squares and open space.

3. In Riparian Protection Areas (shown on the Riparian Protection Areas Map under the Growth Centres SEPP) plant selection should be locally indigenous and typical of species that naturally occur along watercourses on the Cumberland Plan. **Table 4-5** provides guidance on appropriate species.

4. Qualified Ecologists should also assist in any planting selection for rehabilitation, revegetation or restoration works within Riparian Protection Areas.

Table 4-2: Preferred tree species for streets, plazas and squares

Species Name	Common Name	Height	Width	Native
Acer palmatum 'Senkaki'	Coral Bark Maple	4m	3m	
Acer rubrum '	October Glory' Red Maple	9m	7m	
Acmena smithii 'Red Head'	Red Head Acmena	6m	2m	yes
Agonis flexuosa	Willow Myrtle	8m	4m	yes
Angophora costata Dwarf 'Darni'	Dwarf Angophora	4m	2m	yes
Bauhinia hookeri	Mountain Ebony	10m	5m	yes
Brachychiton populneus	Kurrajong	8m	5m	yes
Brachychiton rupestris	Bottle Tree	8m	5m	yes
Cercis canadensis 'Forest Pansy'	Canadian Redbud	2m	3m	
Cercis chinensis 'Avondale'	Chinese Redbud	12m	4m	

Species Name	Common Name	Height	Width	Native
Cercis occidentalis	Californian Redbud	5m	2m	
Cercis siliquastrum	Judas Tree	15m	5m	
Cereus grandiflorus	Night Blooming Cereus	5m	2m	
Ceretopetalum gummiferum	NSW Xmas Bush	6m	3m	yes
Cupaniopsis anarcardiodes	Tuckeroo	7m	3m	yes
Elaeocarpus reticulatus	Blue Berry Ash	8m	4m	yes
Eucalyptus: Dwarf grafted varieties only	Eg -'Summer Red', 'Orange Beauty', 'Wild Fire'	3m aprx		yes
Fraxinus griffithii	Evergreen Ash	6m	4m	
Fraxinus oxycarpia	Raywood varieties	10m	5m	
Ginko biloba 'Princeton Sentry’	Tall Narrow Ginko	10m	3m	
Gordonia axillaris	Poached Egg Camellia	7m	3m	
Hymenosporum flavum	Native Frangipani	7m	3m	yes
Jacaranda mimosifolia	Blue Haze Tree	15m	10m	
Jubaea chilensis	Chilean Wine Palm	8m	4m	
Species Name	Common Name	Height	Width	Native
Juniperus chinensis 'Keteleeri'	Corkscrew conifer	4m	3m	
Juniperus chinensis 'Spartan'	Spartan conifer	4m	2.5m	
Koelreuteria paniculata	Golden Rain Tree	5m	3m	
Lagerstroemia species	Crepe Myrtle	4m	3m	
Laurus nobilis	Bay Laurel	6m	3m	
Leptosperum species	tea tree species	3m	3m	yes
Lirodendron tulipefera fastigatum	Tulip tree	12m	5m	
Lophostemon confertus	Brisbane Brush Box	9m	6m	yes
Magnolia grandifolia 'Exmouth'	Magnolia 'Exmouth'	7m	3m	
Magnolia grandiflora 'Little Gem'	Magnolia ‘Little Gem’	4m	2m	
Magnolia grandifolia 'Kay Parris'	Dwarf Perfumed Magnolia	4m	2m	
Magnolia x soulangeana	Tulip Magnolia	7m	4m	
Magnolia soulangiana	Saucer Flower	6m	6m	

Species Name	Common Name	Height	Width	Native
Melaleuca styphelioides	Prickly Paperbark	6m	4m	yes
Melaleuca decora	White Cloud Tree	5m	2m	yes
Melaleuca linariifolia	Snow In Summer	6m	4m	yes
Nyssa sylvatica 'Autumn Cascade'	Weeping Blackgum	4m	3m	
Nyssa sylvatica	Black Tupelo	15m	6m	
Parrotia persica	Persian Witch Hazel	9m	3m	
Pistacia chinensis	Pistacia Nut Tree	13m	4m	
Prunus varieties	Flowering cherry s	4m	3m	
Malus varieties	Flowering apple	4m	3m	
Pyrus varieties	Flowering pear	6m	4m	
Pyrus calleryana 'Aristocrat'	Flowering Pear	6m	3m	
Pyrus calleryana 'Chanticleer'	Flowering Pear	9m	4m	
Species Name	Common Name	Height	Width	Native
Pyrus calleryana 'Bradford'	Bradford Pear	6m	3m	
Pyrus calleryana 'Edgedell'	Edgedell Pear	5m	3m	
Pyrus calleryana 'Glens Form'	Flowering Pear	8m	4m	
Pyrus calleryana 'Capital'	Flowering Pear	8m	4m	
Pyrus betulaefolia 'Southworth Dancer'	Flowering Pear	5m	4m	
Sapium sebiferum	Chinese Tallowwood	7m	3m	
Quercus palustris 'Pringreen'	Tall Narrow Oak	10m	3m	
Syzygium australe 'Pinnicle'	Narrow Syzygium	6m	2m	yes
Syzygium paniculatum	Brush Cherry	10m	4m	yes
Tristaniopsis laurina 'Luscious'	Water Gum	7m	3m	yes
Zelkova serrata	Zelkova	10m	4m	
Zelkova serrata 'Green Vase'	Wine Glass tree	10m	4m	
Zelkova serrata 'Mushashino'	Narrow Zelkova	8m	3m	

Table 4-3: Preferred tree species for parks and larger plazas

Species Name	Common Name	Height	Width	Native
Angophora costata	Sydney Red Gum	30m	10m	yes
Angophora floribunda	Rough Barked Apple	20m	6m	yes
Angophora subvelutina	Broad Leaf Apple	18m	6m	yes
Araucaria araucana	Monkey Puzzle Tree	35m	8m	yes
Araucaria bidwilli	Bunya Bunya Pine	40m	10m	yes
Araucaria cunninghamii	Hoop Pine	45m	6m	yes
Brachychiton acerifolis	Illawarra Flame Tree	30m	6m	yes
Brachychiton discolour	Lacebark Kurragong	30m	6m	yes
Caloedendron capense	Cape Chestnut	15m	8m	
Carya illinoinensis	Pecan	30m	10m	
Cedrus atlantica	Atlas Cedar	30m	8m	
Cedrus deodara	Deodar Cedar	30m	6m	
Cupressus funebris	Funeral Cypress	20m	5m	
Eucalyptus amplifolia	Cabbage Gum	30m	5m	yes
Eucalyptus bauerana	Blue Box	25m	4m	yes
Eucalyptus benthamii	Camden White Gum	35m	8m	yes
Eucalyptus crebra	Narrow Leaf Red Iron Bark	30m	8m	yes
Eucalyptus fibrosa	Broad Leaf Red Iron Bark	30m	8m	yes
Eucalyptus tereticornis	Forest Red Gum	40m	8m	yes
Eucalyptus viminalis	Manna Ribbon Gum	50m	8m	yes
Ficus macrophylla	Moreton Bay Fig	30m	8m	yes
Ficus rubiginosa	Port Jackson Fig	18m	6m	yes
Flindersia australis	Australian Teak	25m	5m	yes
Ginkgo biloba	Maidenhair Tree	30m	8m	
Jacaranda mimosifolia	Blue Haze Tree	15m	10m	
Liriodendron tulipifera	Tulip Tree	40m	8m	
Livistona australis	Cabbage Palm	20m	2m	yes

Species Name	Common Name	Height	Width	Native
Macadamia integrifolia	Macadamia Nut Tree	15m	5m	yes
Magnolia grandifolia	Bull Bay Tree	18m	8m	
Magnolia denudata	Yulan Tree	18m	8m	
Phoenix canariensis	Canary Island Date Palm	15m	5m	
Pinus pinea	Italian Stone Pine	25m	4m	
Podocarpus elatus	Illawarra Pine	25m	8m	yes
Quercus coccinea	Scarlet Oak	15m	3m	
Quercus palustris	Pin Oak	25m	5m	
Quercus robur	English Oak	30m	6m	
Schinus areira	Peppercorn Tree	17m	5m	
Syzygium luehmannii	Small Leaf Water Gum	20m	8m	yes
Ulmus parvifolia	Chinese Elm	12m	5m	
Zelkova serrata	Zelkova	12m	4m	
Washington robusta	Mexican Fan Palm	25m	3m	

Table 4-4: Preferred mid-storey and under-storey species

SHRUBS:	CLIMBERS:	GROUND COVERS & SUB SHRUBS:
Acmena varieties	Clematis aristate	Acacia cognate 'Mini Cog'
Banksia varieties	Gelsemium sempervirens	Anigozanthos "Bush Gems - varieties,eg Bush Haze, Bush Ranger
Bauhinia galpini	Jasminum spp.	Dianella caerulea
Brunfelsia - grandifolia/ maliformis/pauciflora varieties	Hardenbergia violacea	Dichondra repens
Callistemon varieties	Kennedia rubicunda	Convolvulus mauritanicus
Cordyline fruiticosa 'Kiwi'	Mandevilla spp	Goodenia hederacea
Crinum pedunculatum	Pandorea jasminoides	Hardenbergia violacea
Dodonaea	Trachelospermum jasminoides	Kniphofia "Maid of Orleans"
Doryanthes excelsa	**NATIVE HERBS:**	Melaleuca pentagona 'Little Penta'
Eucalyptus:dwarf grafted varieties.	Dianella spp	Myoparum spp
Gordonia axillaris	Eremophila debilis (syn. Myoporum debile)	Myoporum parvifolium
Grevillea varieties	Lomandra spp (eg Tanika or Nyalla)	Myoporum montanum
Erica varieties	Plectranthus parvifolius	Plectranthus parvifolius
Eremophila varieties	Pennisetum alopecureoides	Rhodanthe anthemoides
Ixora chinensis (Prince of Orange)	Scaevola albida	Scaevola aemula
Kunzea varieties	**NATIVE GRASSES:**	Sedum sempervirens
Indigofera australis	Carex appressa	**HEDGES:**
Leptospermum species	Danthonia racemosa	Brunfelsia varieties
Loropetalum chinensis	Dianella varieties Imperata cylindrical	Buxus varieties
Magnolia grandifolia 'Little Gem'	Lomandra varieties incl 'Tanika' 'Nyalla' etc	Loropetalum chinensis varieties
Magnolia stellata (Star Magnolia)	Sorghum leiocladum	Michelia varieties
Melaleuca 'Revolution Gold'	Themeda australis	Murraya varieties
Michelia figo (Port Wine Magnolia)		Photonia x fraseri 'Little Red Robin'
Myoporum montanum		Viburnum varieties eg odoralissimum
Photonia 'Red Robin' and other smaller growth Photonia.		
Viburnum varieties, eg odoralissimum		
Syzygium varieties.		

Table 4-5: Species for riparian protection areas

(a) Littoral Species (littoral means the foreshores, riverbanks and the plants of that habitat).	
Species Name	**Common Name**
Baumea articulata	
Bolboschoenus fluviatilus	
Carex appressa	Tall Sedge
Cyperus exaltatus	
Gahnia sieberiana	Red Fruited Saw Sedge
Isolepis nodosa	Knobby Club Rush
Juncus usitatus	Common Rush
Philydrum lanuginosum	
Potamogeton tricarinatus	
(b) Macrophyte Species (Macrophyte means the conspicuous plants that dominate wetlands, shallow lakes and streams)	
Species Name	**Common Name**
Baumea articulata	Jointed Twig Rush
Bolboschoenus fluviatus	Marsh Club Rush
Carex appressa	Ephemeral Marsh
Cyperus exaltatus	
Eleocharis sphacelata	Tall Spike Rush
Juncus usitatus	
Phrgmites australis	Common Reed
Potamogeton tricarinatus	
Philydrum lanuginosum	

4.3 Street design

Objectives

a. To establish design standards that correspond with the intended function and character of the different street types in Leppington Major Centre.

b. To ensure that streets provide appropriate amenity for all users, are safe and are able to be maintained.

Controls

1. Streets that are anticipated to operate as bus routes must be capable of accommodating buses with a minimum vehicle length of 14.5 metres.

2. Materials used in footpaths, landscaped areas and other elements of road verges are to be consistent with this DCP.

3. Materials and finishes, and planting, are to emphasise key elements of the streetscape, such as intersections, pedestrian crossings and major building entries.

4. Residential streets are to be designed in accordance with the controls in Part 3 of the main body of this DCP.

5. Industrial streets are to be designed in accordance with the controls in Part 5 of the main body of this DCP.

6. For local residential streets with on road cycle lane between parking and traffic lane (as shown on **Figure 3-33-3**), the road reserve is to be 18m wide. The additional land area and construction cost (above the cost of constructing a local residential street to the dimensions specified in this DCP) will be funded by Council.

Street landscaping

7. Each Development Application is to include a landscaping plan which demonstrates how the landscaping proposed for the development fits into the overall Public Domain Strategy.

8. The design of streets, including tree planting, and buildings that front them is to consider that:

    - North-south oriented and north-east to south-west oriented streets benefit from solar protection in summer to eastern side of the street.
    - East-west and north-west to south-east oriented streets benefit from solar access in the winter solstice to southern side of the street.

9. Deciduous trees are to be used only where greater solar access in winter is required (eg. on the southern side of east-west oriented streets and the southern and eastern sides of urban plazas).

10. Evergreen trees are to be used for roadside planting (especially sub-arterial and arterial roads).

11. Evergreen trees are to be used where visual-buffers are required (eg. adjacent rail and sub-arterial / arterial roads).

12. Street trees have a shorter lifespan than park trees, and their ongoing maintenance and replacement should be planned to ensure continued canopy cover.

13. Street tree planting need not be symmetrical. Different species can be planted on opposite sides of the street to perform different microclimatic functions.

14. The layout of street tree planting on town centre streets is to be formal with regular spacing and coordinate with regular light-pole locations, street parking, awnings and outdoor seating.

15. The layout of street tree planting on residential and bulky goods / industrial local streets is to be informal to maximise opportunity for planting amongst multiple driveway entrances.

16. The layout of street trees and landscape zones must coordinate required clear-zones from street corners and setbacks from street kerbs.

17. Plant selection is to utilise species listed in **Table 4-2** and take into account the following:

    - Species which complement remnant native vegetation where possible.
    - Potential impacts on road and footpath pavements.
    - Water and maintenance requirements.
    - Scale in relation to the function of the area.
    - Contribution to the character of the local centre.
    - Consistency with solar access and weather protection requirements in this DCP.
    - Impacts on utilities (Power/Gas/Water/Sewer/Cables) and street lights
    - Pruning and shaping resilience
    - Driveways, bus stops, pedestrian crossings and intersections
    - Road verge and nature strip widths
    - Building orientation, uses and setbacks
    - Lateral spreading habits
    - Waste service collections
    - Cultural and heritage amenity.
    - Minimum setbacks from concrete structures.
    - Road Authority requirements for street trees to meet road safety objectives.

18. Tree spacing should generally be:

    - 12-15m on E-W and NW-SE streets to allow greater solar access in winter.

- 10-12m on N-S and NE-SW streets to provide greater protection from summer western sun.
- Sufficient to ensure that tree pits treat stormwater runoff from the road to meet the water quality standards specified in this DCP.

Larger tree canopies may require wider spacing to match canopy width.

19. Taller trees may be appropriate on the southern side of east-west oriented streets and the eastern side of north-south oriented streets to maximise sunlight penetration in winter and shade in summer (to both the street and to building facades).

4.3.1 Rickard Road

Objectives

a. Rickard Road is to function as a transit boulevard within Leppington Major Centre, with priority to public transport, pedestrians and cyclists and a low speed traffic environment.

b. To ensure that Rickard Road has an attractive landscape character.

c. To activate the street with outdoor uses and active building frontages.

Controls

1. The design of Rickard Road is to be as shown on **Figure 4-14-1** and consistent with the controls below.

Quality of Materials	• Footpath pavement to be consistent material for the full-width. • Pedestrian pavement to be high-quality unit paver or insitu concrete.
Street Trees	• Provide street trees at regular spacing, coordinate with awnings, outdoor dining, street lights and on-street car park locations. • Large trees preferred on verges to create a tree lined boulevard. Large trees in the median preferred subject to road safety requirements. • Provide frangible street trees in median, regular spaced and offset from footpath trees. • Plant around base of street trees. • For medians less than 4m width (eg at intersections), no planting is permitted and hard surfaces are to be provided. • Provision is to be made for maintenance vehicles to enter the median.
Street Activation	• Main building entrances should be located on Rickard Road. • Outdoor dining and other activities that activate the street are encouraged adjacent to building entrances and near street corners. • Opportunity to provide outdoor dining in kerb blisters. Minimum clear pedestrian path required. Design to consider barrier treatments to provide separation from traffic lanes and a pleasant environment. • Outdoor dining to be located clear of building frontage to allow way-finding by people who are sight impaired.
Light poles and bus stop coordination	• Coordinate light pole location with street trees, bus shelters and awnings (refer to **Figure 4-24-2**).
Mid Block Crossing	• Not permitted.
Through site link	• Provide through-site link access to retail areas • Provide additional building setbacks at entrances.
Awnings and weather protection	• Continuous awnings to be provided for all development. • Supplement weather protection for outdoor dining areas with umbrellas and retractable awnings.
Water Sensitive Urban Design	• Tree pits are to collect and treat rain water from the road carriageway and downpipes from awnings to meet water quality standards specified in this DCP.

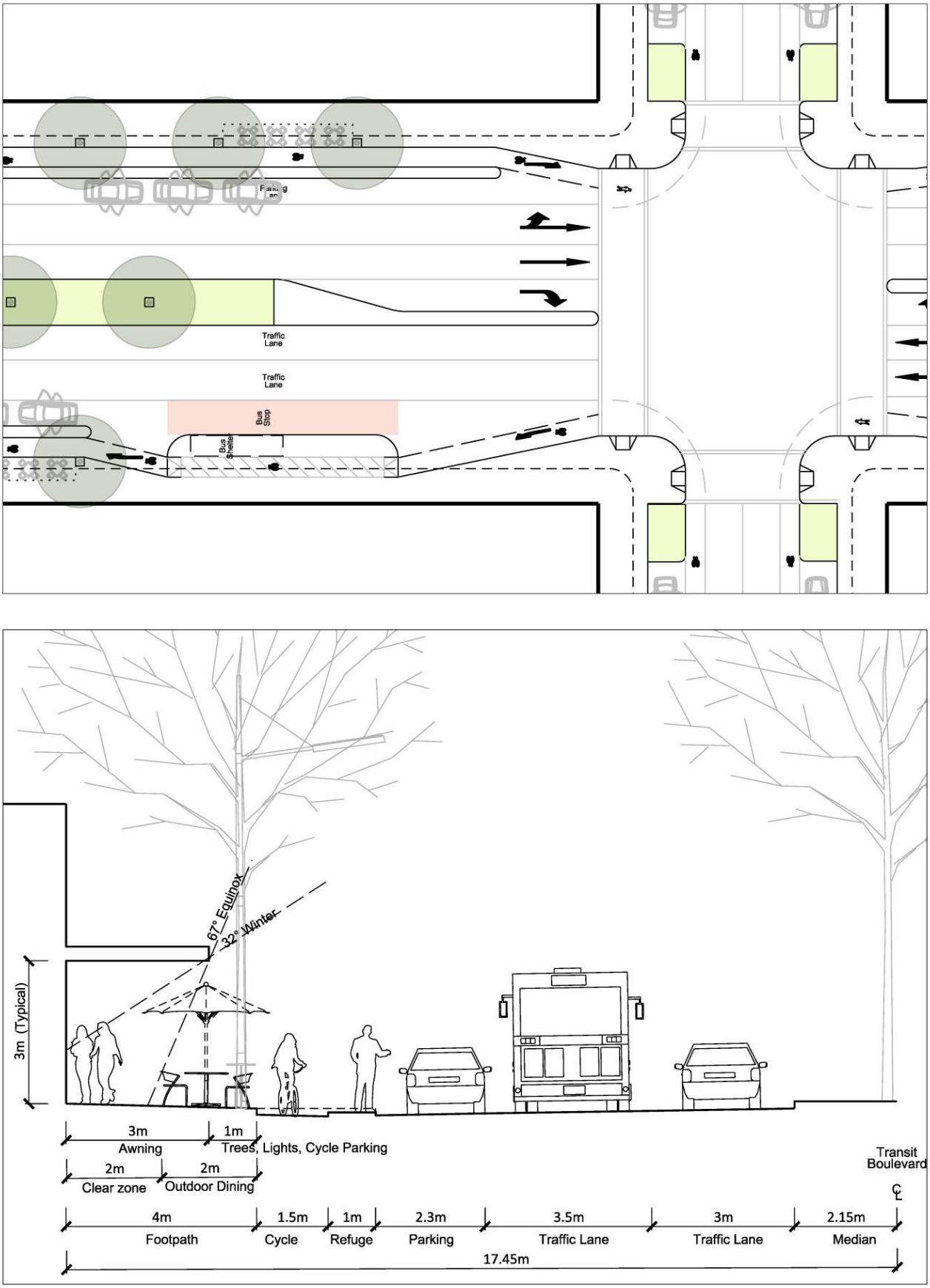


Figure 4-1: Rickard Road typical plan and cross section

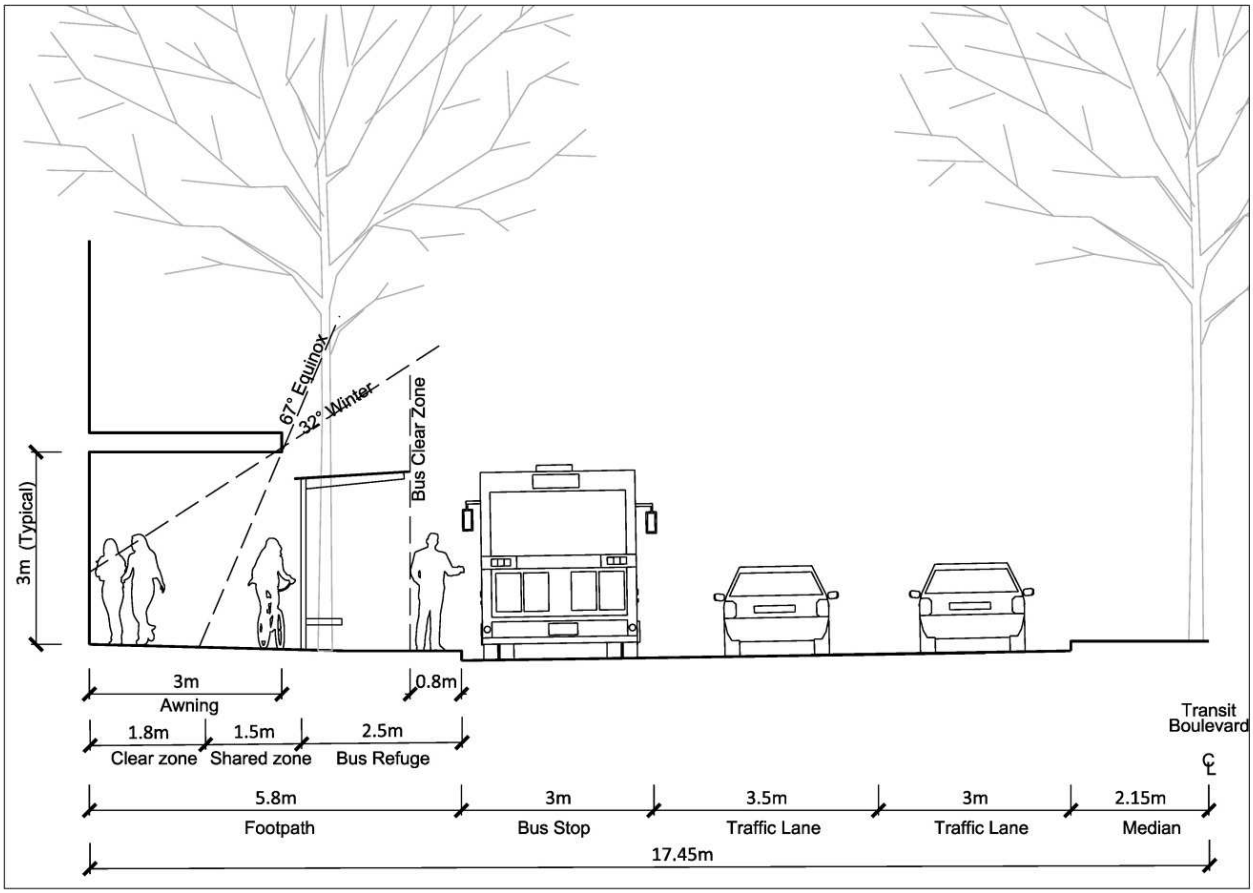


Figure 4-2: Rickard Road cross section at bus stops

4.3.2 Main Street

Objectives

a. To activate the main street by:

- fronting specialty retail and other land uses that create activity onto the Main Street.
- Maximising on street parking and access for cyclists.
- Creating at attractive pedestrian environment

b. To ensure that the main street develops as the main focus of activity in the retail core of the Major Centre.

Controls

1. The design of the Main Street is to be as shown on **Figure 4-34-3** and consistent with the controls below.

Quality of Materials	• Footpath pavement to be consistent material for the full-width. • Pedestrian pavement to be high-quality unit pavers. • Use paving patterns / variety of colours or materials to differentiate outdoor dining areas and entrances to through-site links.
Street Trees	• Provide street trees at regular spacing, coordinate with awnings, outdoor dining, street lights and street car park locations. • No street trees adjacent bus stops. • Species selection is to be from the species suitable for north-south oriented streets in Appendix A2, and species type is to be consistent for the length of the street. More than one species can be used, particularly to achieve a particular pattern or to achieve appropriate solar access / shade out comes, but the pattern of species should be replicated for the entire length of the Main Street.
Street Activation	• Development must present an active frontage to the main street. • Buildings define the street edge (zero setbacks). • Outdoor dining and other activities that activate the street are encouraged. • No outdoor dining / on-street trading adjacent bus stops. • Outdoor dining to be located clear of building frontage to allow way-finding by people who are sight impaired. • Public (unpaid) seating provided near mid-block crossings, and typically 50m spacing therefrom.
Parking and loading	• No driveway access permitted on the main street. • All off street parking and loading is to be accessed from other streets and service lanes. • The on-street parking lane provides for a range of functions (eg. loading bays, bus stops and turning lanes at intersections if required) • Provide event and emergency vehicle access to the Town Plaza via the mid block crossing using removable bollards.

Light poles and bus stop coordination	• Coordinate light pole locations with street trees, bus shelters and awnings. • Ensure light pole design can accommodate a proprietary banner mounting system. • Arrangements for bus stops, the cycle lane, footpaths and road carriageway are to be consistent with **Figure 4-44-4**.
Intersections and pedestrian crossings	• Provide a mid-block crossing centred on the Town Plaza. Consent authority is to determine if the crossing is to be raised. • The design of the crossings should accommodate either raised or flush treatments, and signals if required in the future. • Provide blisters at pedestrian crossings and the mid-block crossing consistent with **Figure 4-44-4**. • Provide corner blisters at intersections except where dedicated turning lanes are required (**Figure 4-54-5**) • Provide low-level planting to the mid-block crossing. • Use bollards if crossing is raised.
Through site link	• Provide through-site link access to retail areas at the mid-block crossing location. • Provide additional building setbacks at entrances.
Awnings and weather protection	• Supplement weather protection for outdoor dining areas with umbrellas and retractable awnings. • Continuous awnings are required for all buildings fronting the main street.
Water Sensitive Urban Design	• Tree pits are to collect and treat rain water from the road carriageway and downpipes from awnings to meet water quality standards specified in this DCP.

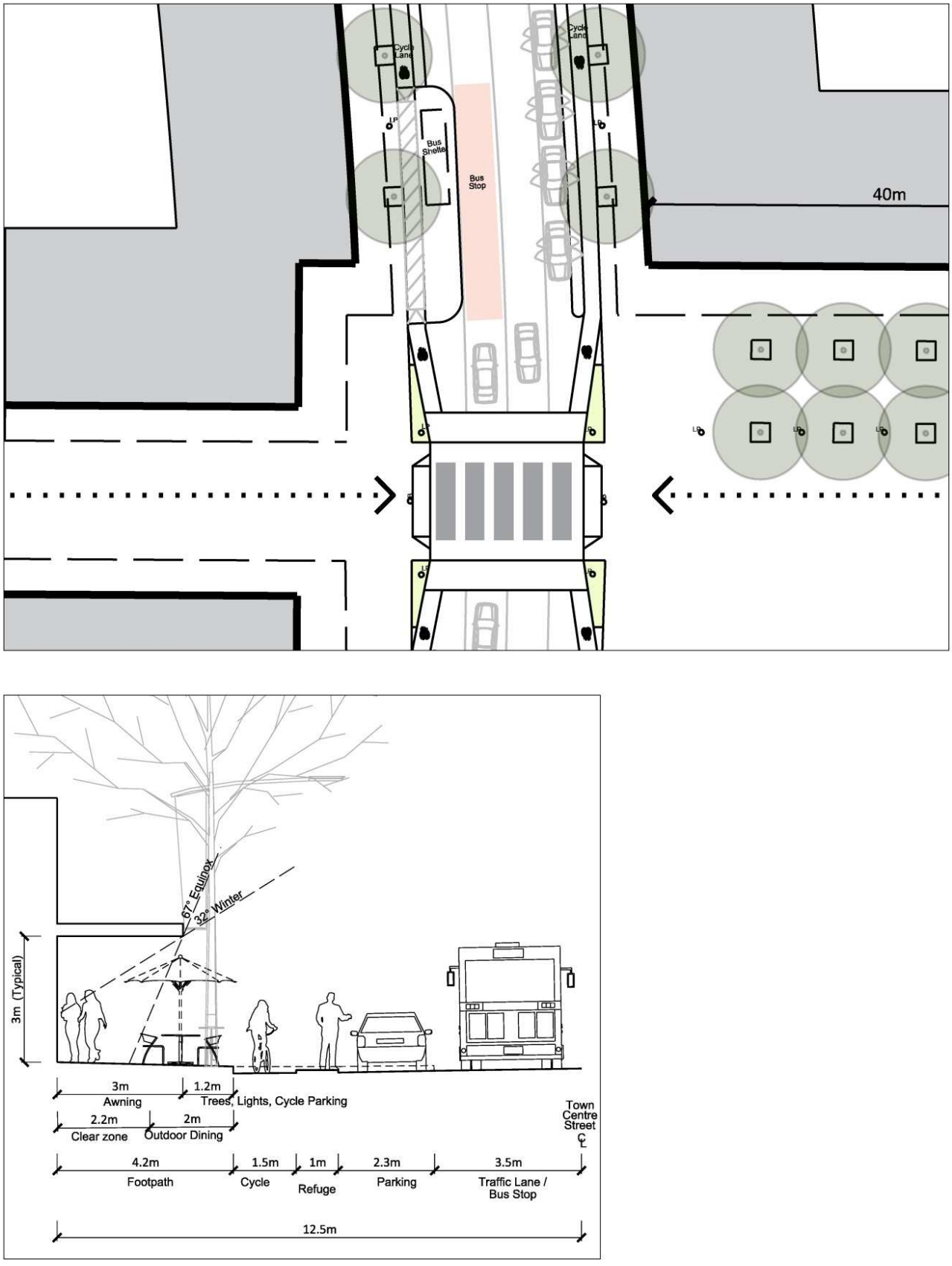


Figure 4-3: Main Street typical plan and cross section

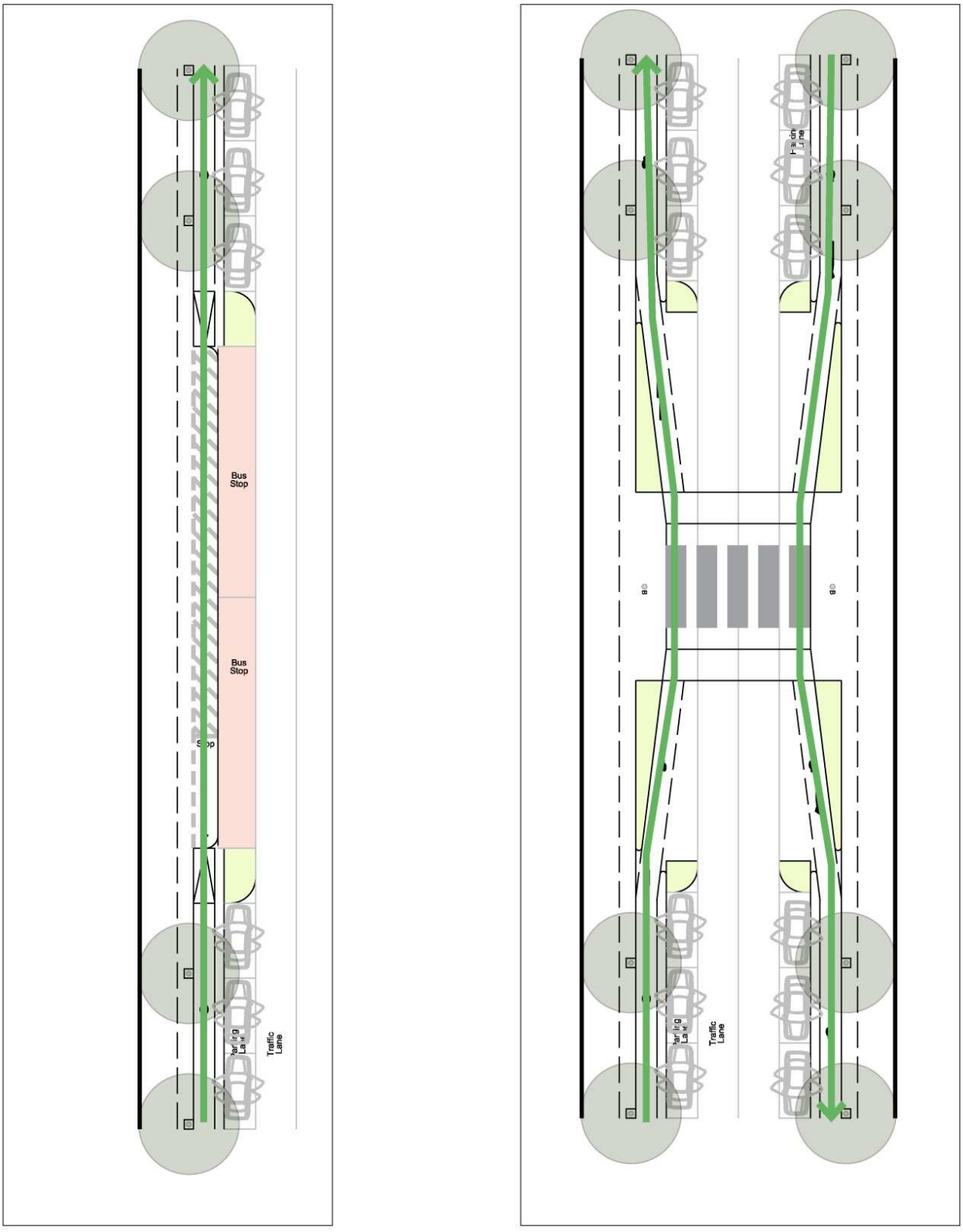


Figure 4-4: Main Street design at mid-block bus stops and mid-block pedestrian crossings

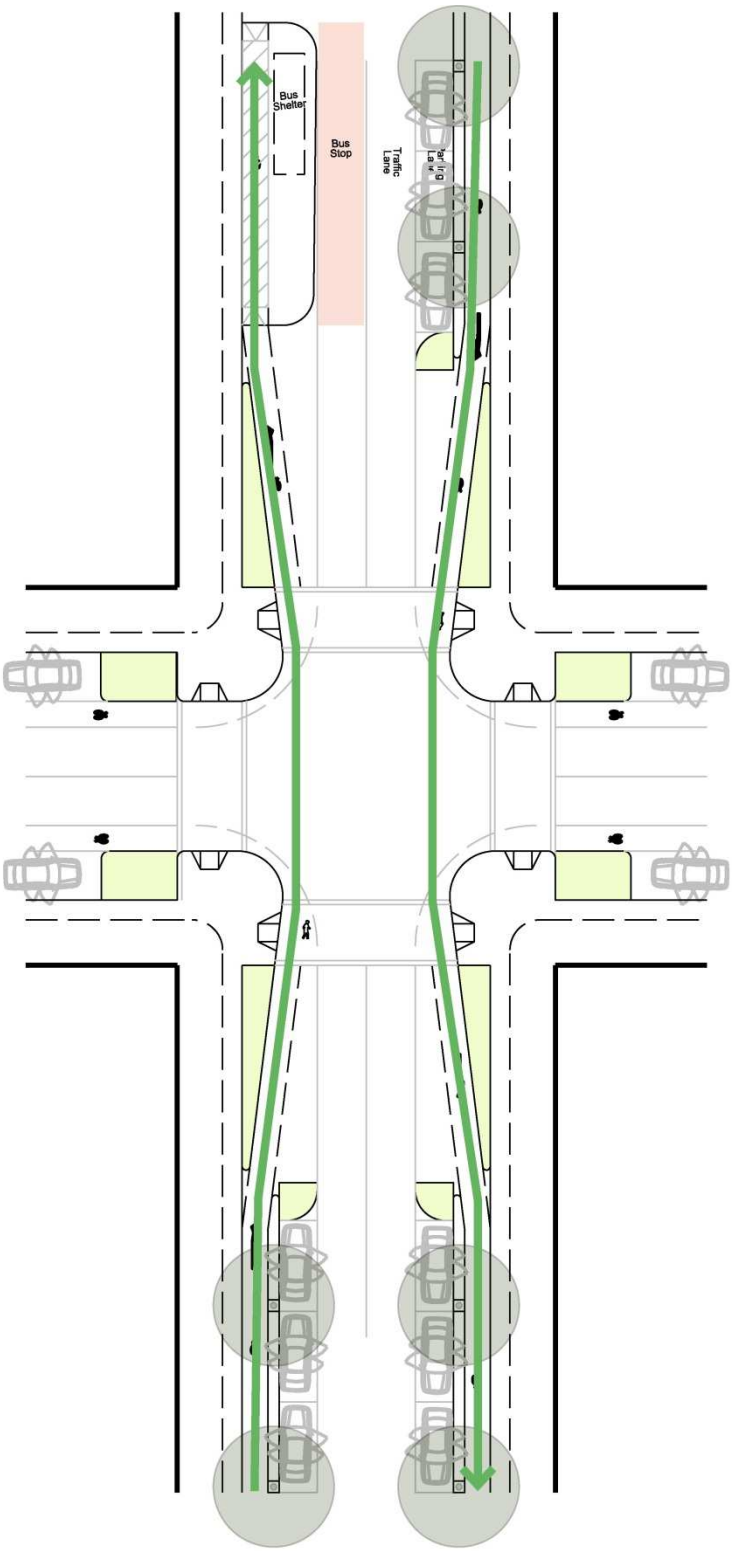


Figure 4-5: Main Street intersection design

4.3.3 Town Centre Streets

Objectives

a. To ensure that Town Centre Streets are able to accommodate growth in vehicular, pedestrian and cyclist traffic as the town centre develops.

b. To ensure that development in the town centre has appropriate vehicle access for parking, loading and services.

c. To ensure that Town Centre Streets are attractive and contribute positively to the character of the Major Centre.

d. To activate Town Centre Streets, where possible, by:

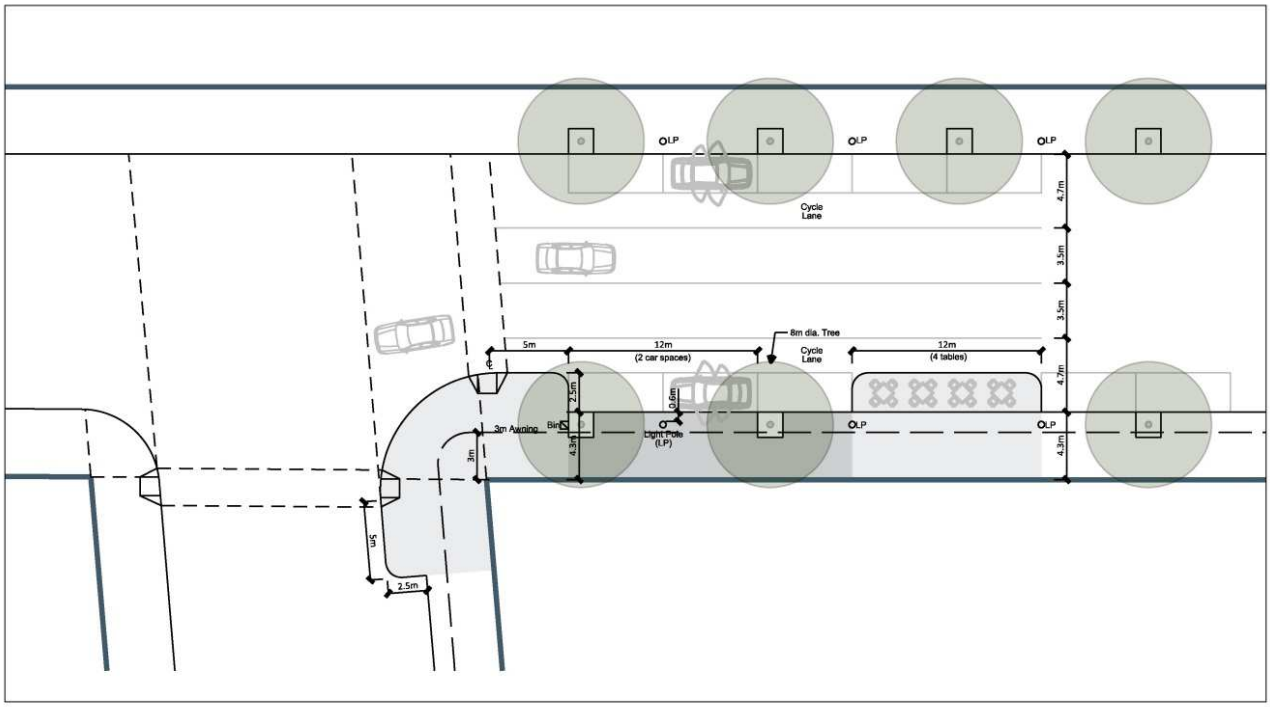
- fronting specialty retail and other land uses that create activity onto the street.
- Maximising on street parking and access for cyclists.
- Creating an attractive pedestrian environment

Controls

1. The design of Town Centre Streets is to be as shown on **Figure 4-64-6** and consistent with the controls below.

Quality of Materials	• Footpath pavement to be consistent material for the full-width. • Pedestrian pavement to be high-quality unit paver. • Use paving patterns / variety of colours or materials to differentiate outdoor dining areas and entrances to through-site links. • Additional planting can be provided in kerb blisters (eg. to frame outdoor dining areas). This will require removal of some on-street parking.
Street Trees	• Provide street trees at regular spacing, coordinate with awnings, outdoor dining, street lights, car park/loading bay entries and on street parking. • No street trees adjacent bus stops. • Tree species type is to be consistent for the length of the street. • More than one species can be used, particularly to achieve a particular pattern or to achieve appropriate solar access / shade out comes, but the pattern of species should be replicated for the entire length of the Main Street. • Provide minimum separation distance of 0.75m from edge of concrete structures to street tree. • Provide root guards.
Street Activation	• Active frontage are preferred for Town Centre Streets, but these streets may also provide vehicle access to internal parking and loading areas. • Buildings define the street edge (zero setbacks) where there is an active frontage or to screen internal parking and loading areas. • Where buildings do not have a zero setback, a landscaped setback is to be provided to screen utility areas, car parks and loading areas from view from the street.

	• Outdoor dining and other activities that activate the street are encouraged. Design is to consider barrier treatments to provide separation from traffic lanes and a pleasant environment. • No outdoor dining / on-street trading adjacent bus stops. • Outdoor dining to be located clear of building frontage to allow way-finding by people who are sight impaired.
Parking and loading	• Town Centre Streets may provide vehicle access to internal parking and loading areas. • The on-street parking lane provides for a range of functions (eg. loading bays, bus stops and turning lanes at intersections if required).
Light poles and bus stop coordination	• Coordinate light pole locations with street trees, bus shelters and awnings. • Ensure light pole design can accommodate a proprietary banner mounting system. • Arrangements for bus stops, the cycle lane, footpaths and road carriageway are to be ensure the safety of bus passengers, cyclists and pedestrians.
Intersections and pedestrian crossings	• Provide corner blisters at pedestrian crossings and mid-block crossings. • Provide low-level planting to the mid-block crossing. • Use bollards if crossings are raised.
Through site link	• Provide through-site link access to retail areas at the mid-block crossing location. • Provide additional building setbacks at entrances.
Awnings and weather protection	• Supplement weather protection for outdoor dining areas with umbrellas and retractable awnings. • Continuous awnings preferred along the length of street, subject to whether active street frontage uses locate on these streets.
Water Sensitive Urban Design	• Opportunity for WSUD in corner blisters and as a replacement for on street parking bays. • Tree pits are to collect and treat rain water from the road carriageway and downpipes from awnings to meet water quality standards specified in this DCP.



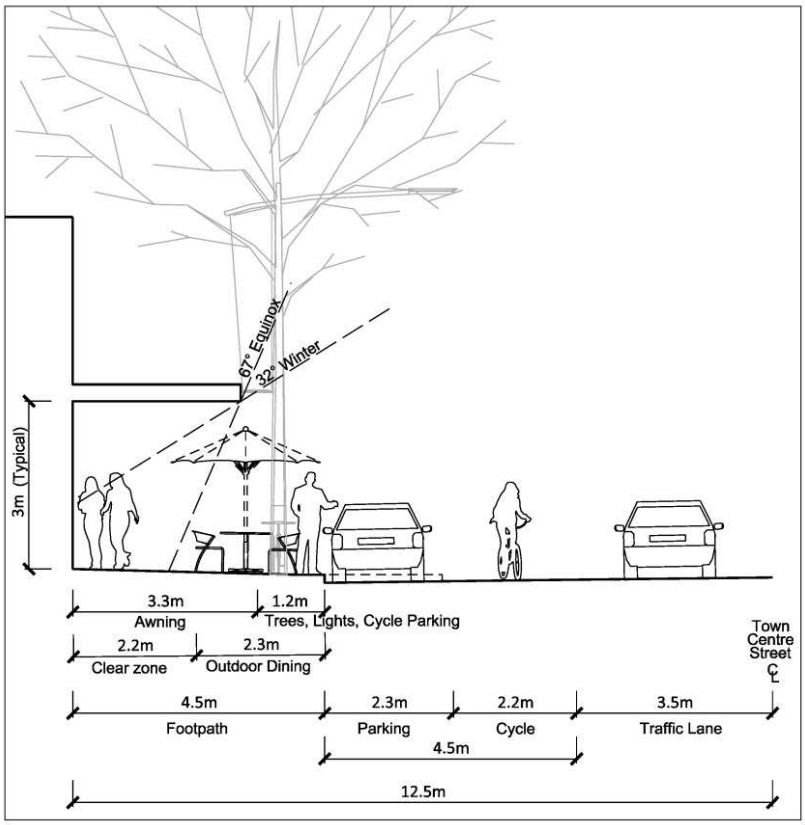


Figure 4-6: Town Centre Street typical plan and cross section

4.3.4 Bus Interchange

Objectives

a. To enable the function of the bus interchange to evolve as the Major Centre grows.

b. To ensure that the street is activated, but that other uses do not interfere with the operation of the bus interchange.

c. To ensure that the bus interchange is well integrated with the train station.

Controls

1. The design of the Bus Interchange Street is to be as shown on **Figure 4-74-7** and consistent with the controls below.

Quality of Materials	• Footpath pavement to be consistent material for the full-width. • Pedestrian pavement to be high-quality unit paver.
Street Trees	• No street trees adjacent bus stops. Provide shade trees in Bus Interchange Plaza connecting to Rail Station Concourse.
Street Activation	• No outdoor dining / on-street trading adjacent bus stops. • For outdoor dining facing the street, a minimum building setback of 2m at ground level is required. • Locate outdoor dining areas in Bus Interchange Plaza. Provide planter beds / awnings / retractable canopies for sun protection.
Parking and loading	• Parking and loading access is to be from other streets.
Light poles and bus stop coordination	• Coordinate light pole location with street trees, bus shelters and awnings. • The location of Bus Bays is to consider pedestrian access and operational requirements to provide sufficient queuing distance for the left-turn into Rickard Road and the Main Street. • Provide bus only lanes adjacent bus stop bays to avoid conflict with other vehicles
Intersections and pedestrian crossings	• Provide mid-block crossing centred on Bus Interchange Plaza. Consent authority to determine if the crossing is raised. • The design of the crossings should accommodate either raised or flush treatments, and signals as required • Provide through-site link access to retail areas at mid-block crossing location. Provide additional building setbacks at entrance. • Provide corner blisters at pedestrian crossings and mid-block crossing. • Provide low-level planting and bollards to mid-block crossing
Through site link	• Provide through-site link access to retail areas at the mid-block crossing location. • Provide additional building setbacks at entrances.
Awnings and weather protection	• Provide continuous awnings / colonnades over footpath. • Provide separate bus shelters for weather protection • Potential to provide colonnade flanking Bus Interchange Plaza to provide all-weather access from the Rail Station to the Bus Interchange.
Water Sensitive Urban Design	• No opportunity for WSUD on Bus Interchange Street.

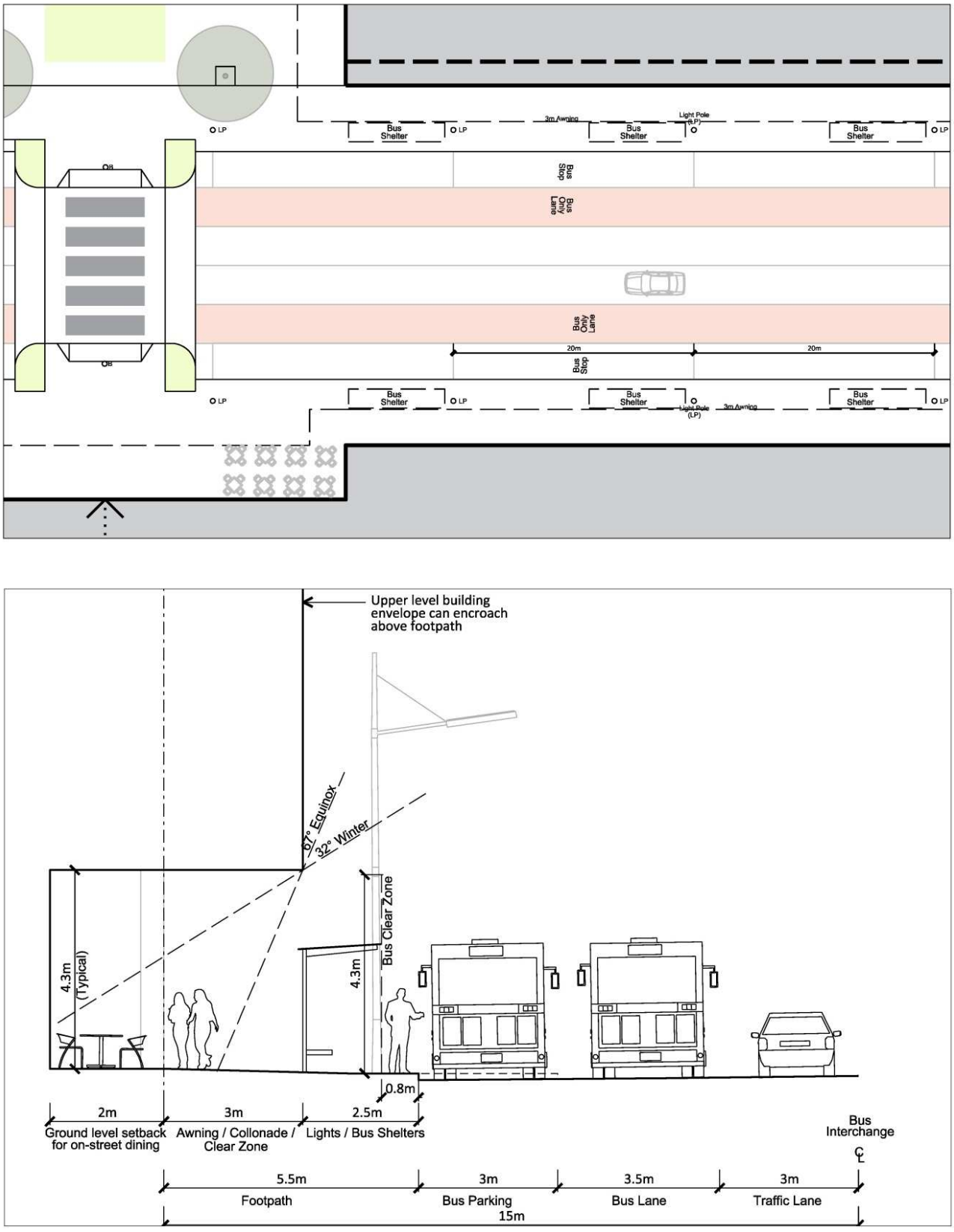


Figure 4-7: Bus interchange street typical plan and cross-section

4.3.5 Service Lanes

Objectives

a. To ensure that there is appropriate access for vehicles to development in the town centre, for purposes such as parking and loading.

b. To ensure that utility activities, parking and loading do not detract from the character of the Main Street and Town Centre Streets.

c. To provide opportunities for additional pedestrian connections through the Major Centre.

Controls

1. The design of Service Lanes is to be as shown on **Figure 4-84-8** and consistent with the controls below.

Quality of Materials	• Footpath pavement to be insitu concrete. • Driveways to be consistent treatment within public domain.
Street Trees	• Limit street tree planting to areas adjacent to intersections with other town centre streets.
Street Activation	• Outdoor Dining permitted near intersections of Town Centre Streets.
Parking and loading	• Service lanes are the primary access routes for vehicles to internal car parks and loading bays. • On street parking may be permitted on one side of the street only, providing it does not interfere with the function of the street.
Through site link	• Provide additional building setbacks at entrance to through site links.
Awnings and weather protection	• Awnings can wrap around corners from intersection with Town Centre Streets. • No requirement for continuous awnings.
Water Sensitive Urban Design	• No opportunity for WSUD on Service Lanes.

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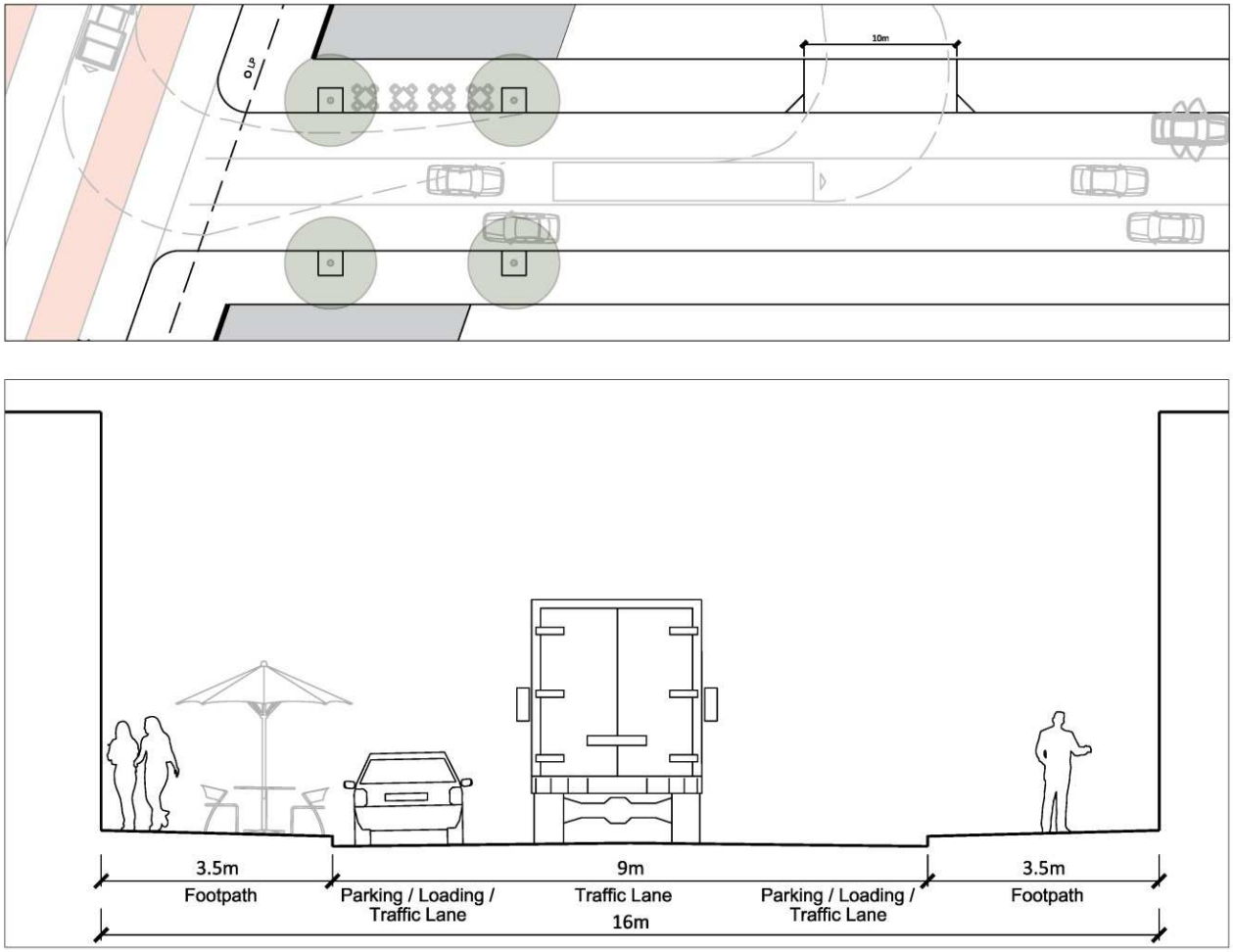


Figure 4-8: Service lane typical plan and cross-section

4.4 Plazas and squares

Objectives

a. To create a series of activity nodes within the public domain that are a focus for informal and organised community gatherings and interaction.

b. To establish places within the centre that promote active use of the public domain and an interface between development and the public domain.

c. To provide breaks in the built form at key locations.

d. To encourage development to be orientated towards the public domain rather than being internally focused.

Controls

1. The design of Plazas is to consider the following principles:

    - quality of social spaces;
    - safety and perceptions of safety;
    - provision for sight and mobility impaired people;
    - cater for special public events, markets etc;
    - pedestrian walkways and pavement surfaces;
    - pedestrian lighting;
    - location and amount of seating;
    - visual amenity;
    - passive recreation function;
    - cultural significance - places for social interaction and public art; and
    - maintenance requirements.

2. Plazas or squares are encouraged at key nodes within the centre, such as at intersections between Town Centre Streets and Service Lanes or Pedestrian Through Site Links, at intersections along Rickard Road, or to incorporate, highlight and interpret heritage items such as the Leppington Public School and the WV Scott Memorial.

3. Squares or plazas should be located to terminate or enhance vistas within the centre and to surrounding areas, particularly at high points or to connect the centre to the adjacent creek corridors.

4. The boundary dimensions of squares and plazas should be in the order of 40-70 metres. The dimensions and orientation of the plaza or square is to maximise solar access, particularly during winter.

5. The design of the square or plaza and adjoining buildings is to ensure that at least 50% of the area of the square or plaza receives sunlight between the hours of 11am-2pm on June 21. Above the first floor, buildings may need to be set back to ensure appropriate solar access to the square.

6. Plazas and squares should generally be square or rectangular, although irregular shapes may be appropriate to make use of residual land or where streets intersect at odd angles.

7. Squares and plazas may include water features to improve amenity, assist in management of micro-climates and to incorporate water sensitive urban design into the public domain.

8. Buildings are to be built to the boundary fronting squares, plazas and parks at the ground floor and first floor, or set back at the ground floor a maximum of 3 metres only where a colonnade is proposed within the setback.

9. Buildings fronting squares, plazas or public open space are to have active frontages above the ground floor that provide passive surveillance of the square or plaza. Commercial or retail tenancies are to have glazed facades or balconies overlooking the square, and residential development is to have balconies facing the square, plaza or park.

10. Materials and finishes are to be in accordance with **Table 4-1**.

11. Plant species selection for plazas and squares is to predominantly utilise species listed in **Table 4-2**.

12. Trees, awnings and colonnades are the preferred means of shade and weather protection within squares and plazas. Trees should be predominantly deciduous to provide shade in summer and solar access in winter.

4.4.1 Town Plaza

Controls

1. The Town Plaza is to be located mid-block on the main street generally in the location shown on the Indicative Layout Plan.

2. The design of the Town Plaza is to be consistent with the controls below and **Figure 4-94-9**.

Quality of Materials	• Pedestrian pavement to be high-quality unit paver.
Trees	• Provide shade trees in north-eastern corner to provide shade from the west in summer. • Provide deciduous trees on the southern side of the plaza
Activation	• Provide flexible public activity space with water and public art elements and free seating. • Integrate the development at ground level and upper floors with the plaza. Active uses at ground floor fronting all sides of the plaza and upper floor residential are encouraged to overlook the plaza. Orient balconies and living areas towards the plaza to provide passive surveillance and activity. • Locate outdoor dining on south-east side to provide good solar access in winter and shade from the western sun in summer. • Provide multiple areas for public seating with good visual surveillance and protection from summer sun (eg. shade trees). • Coordinate locations with pedestrian desire lines to avoid conflicts. • Opportunity for bespoke street furniture and public art integration into public seating.
Parking loading and vehicle access.	• Provide event and emergency vehicle access to the Town Plaza via the mid block crossing using removable bollards.
Through site link	• Provide through-site link access to retail areas at mid-block crossing location from the plaza. Provide additional building setbacks at entrances. Through site links are publicly accessible 24hrs.
Awnings and weather protection	• All development fronting the plaza is to provide continuous awning or colonnades.
Water Sensitive Urban Design	• WSUD to be integrated with tree planting Tree pits within the plaza are to collect and treat rain water from impervious surfaces to meet water quality standards specified in this DCP. • WSUD measures to be integrated with water features where practical.
Lighting	• In addition to street lighting, provide pedestrian lighting to plazas, mid-block crossings, marked and signalised pedestrian crossings, cycle lanes and through site links. • Provide feature lighting (eg. catenary) in the Town Plaza.

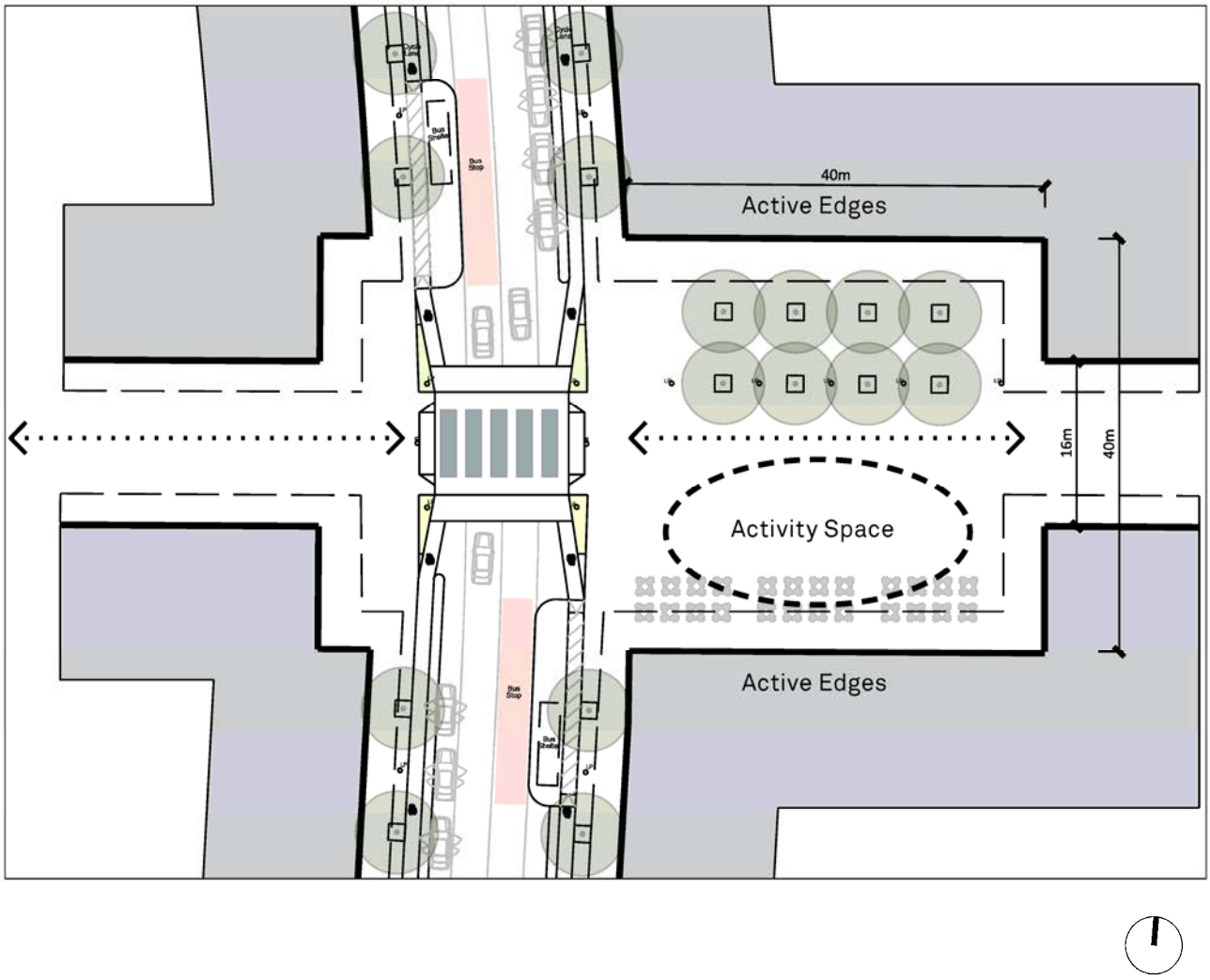


Figure 4-9: Layout of the Town Plaza

4.4.2 Rail and Bus Interchange Plaza

Controls

1. The Interchange Plaza is to be aligned with the Leppington Station concourse and entry, generally in the location shown on the Indicative Layout Plan.

2. The design of the Interchange Plaza is to be consistent with the controls below and **Figure 4-94-9**.

Quality of Materials	• Pedestrian pavement to be high-quality unit paver. • Paving material and design to integrate with station entry / concourse to assist way-finding.
Trees	• No street trees adjacent bus stops. Provide shade trees in Bus Interchange Plaza connecting to Rail Station Concourse.
Activation	• Provide flexible public activity space with water and public art elements and free seating. • Provide multiple areas for public seating with good visual surveillance and protection from summer sun (eg. shade trees). • Coordinate seating locations with pedestrian desire lines to avoid conflicts. • Integrate the development at ground level and upper floors with the plaza. Active uses at ground floor fronting all sides of the plaza and upper floor residential are encouraged to overlook the plaza. Orient balconies and living areas towards the plaza to provide passive surveillance and activity. • No outdoor dining / on-street trading adjacent bus stops. • Locate outdoor dining areas in Bus Interchange Plaza. • Provide planter beds / awnings / retractable canopies / colonnades for sun protection Provide multiple areas for public seating with good visual surveillance and protection from summer sun (eg. shade trees). • Opportunity for bespoke street furniture and public art integration into public seating to extend the public art themes adopted for Leppington Station.
Parking loading and vehicle access.	• Provide event and emergency vehicle access to the Interchange Plaza via the mid block crossing using removable bollards.
Through site link	• Provide through-site link access to retail areas at mid-block crossing location from the plaza. Provide additional building setbacks at entrances. Through site links are publicly accessible 24hrs.
Awnings and weather protection	• Supplement weather protection for outdoor dining areas with umbrellas and retractable awnings. • Provide colonnade flanking Bus Interchange Plaza to provide all-weather access from the Rail Station to the Bus Interchange.
Water Sensitive Urban Design	• WSUD to be integrated with tree planting Tree pits within the plaza are to collect and treat rain water from impervious surfaces to meet water quality standards specified in this DCP. • WSUD measures to be integrated with water features where practical.
Lighting	• In addition to street lighting, provide pedestrian lighting to plazas, mid-block crossings, marked and signalised pedestrian crossings, cycle lanes and through site links. • Provide feature lighting (eg. catenary) in the Interchange Plaza.

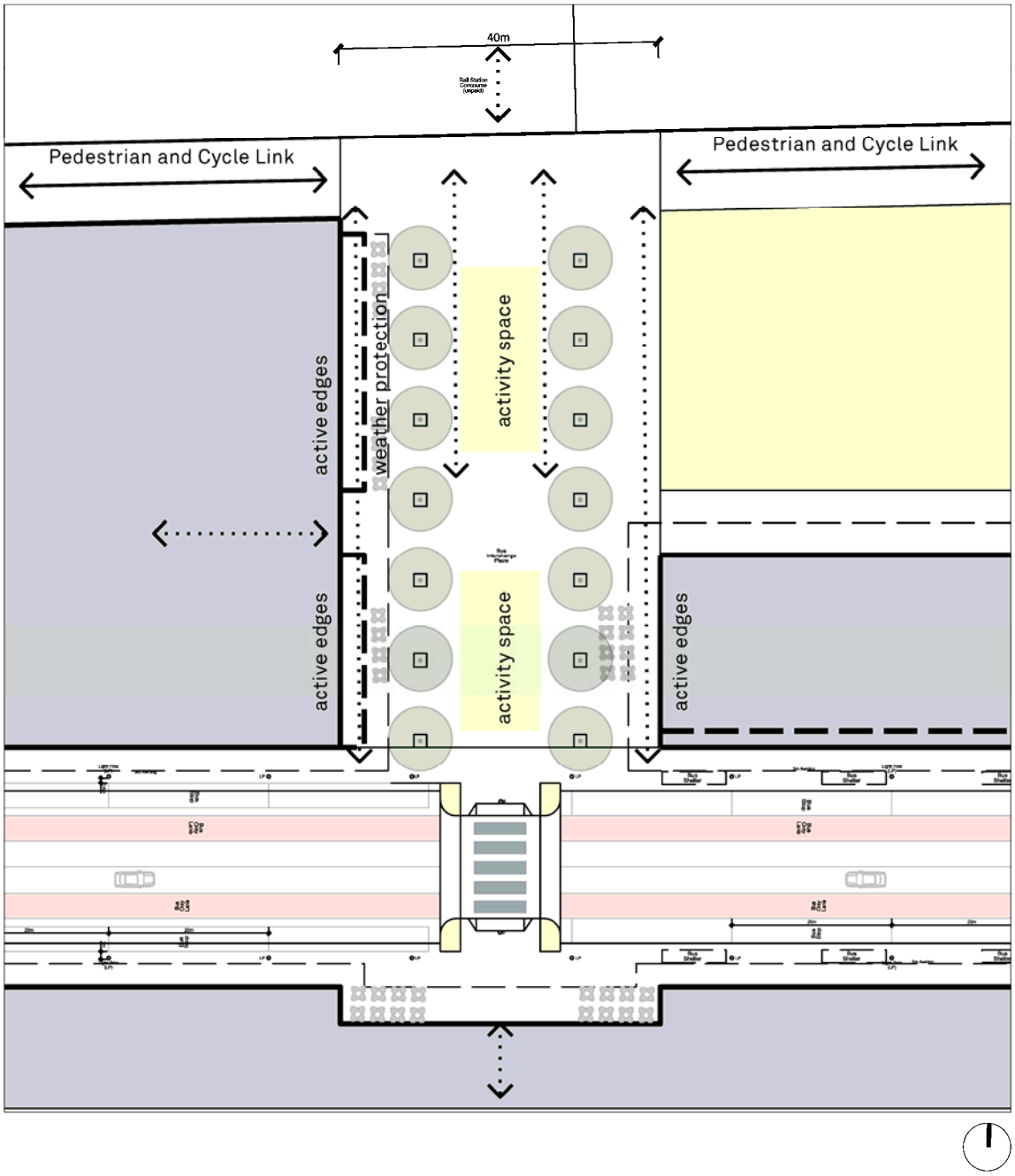


Figure 4-10: Layout of the Rail and Bus Interchange Plaza

4.4.3 Civic Centre Plaza

Controls

1. The Civic Centre Plaza is to be developed as part of the Civic and Cultural Centre to the north of Leppington Station.

2. The location of the Civic Centre Plaza is to align with a through site link from Leppington Station and integrate with the TAFE college to the north, generally in the location shown on the Indicative Layout Plan.

3. The design of the Civic Centre Plaza is to be consistent with the controls below and **Figure 4-114-11**.

Quality of Materials	• Pedestrian pavement to be high-quality unit paver. • Continue design themes from the station through the through-site links and plaza to assist in pedestrian way-finding to the station.
Trees	• Provide shade trees in eastern corner to provide shade from the west in summer.
Activation	• Provide flexible public activity space with water and public art elements and free seating. This space should also accommodate outdoor community events, eg. free markets, fetes, performances, street theatre etc associated with the community and cultural use of the buildings. • Provide multiple areas for public seating with good visual surveillance and protection from summer sun (eg. shade trees). • Coordinate seating locations with pedestrian desire lines to avoid conflicts. • Integrate the development at ground level and upper floors with the plaza. Active uses at ground floor fronting all sides of the plaza and upper floor residential are encouraged to overlook the plaza. Orient balconies and living areas towards the plaza to provide passive surveillance and activity. • No outdoor dining / on-street trading adjacent bus stops. • Locate outdoor dining areas on west side to provide good solar access in winter and shade from the western sun in summer. • Provide planter beds / awnings / retractable canopies / colonnades for sun protection Provide multiple areas for public seating with good visual surveillance and protection from summer sun (eg. shade trees). • Opportunity for bespoke street furniture and public art integration into public seating to extend the public art themes adopted for Leppington Station. • Provide pedestrian through-site link access to Civic areas at mid-block crossing location. Provide additional building setbacks at entrances.
Parking loading and vehicle access.	• Provide event and emergency vehicle access to the Civic Centre Plaza via the mid block crossing using removable bollards.
Through site link	• Provide through-site link access to retail areas at mid-block crossing location from the plaza. Provide additional building setbacks at entrances. Through site links are publicly accessible 24hrs.
Awnings and weather protection	• Supplement weather protection for outdoor dining areas with umbrellas and retractable awnings.
Water Sensitive Urban Design	• WSUD to be integrated with tree planting Tree pits within the plaza are to

	collect and treat rain water from impervious surfaces to meet water quality standards specified in this DCP. • WSUD measures to be integrated with water features where practical.
Lighting	• In addition to street lighting, provide pedestrian lighting to plazas, mid-block crossings, marked and signalised pedestrian crossings, cycle lanes and through site links. • Provide feature lighting (eg. catenary) in the Civic Centre Plaza.

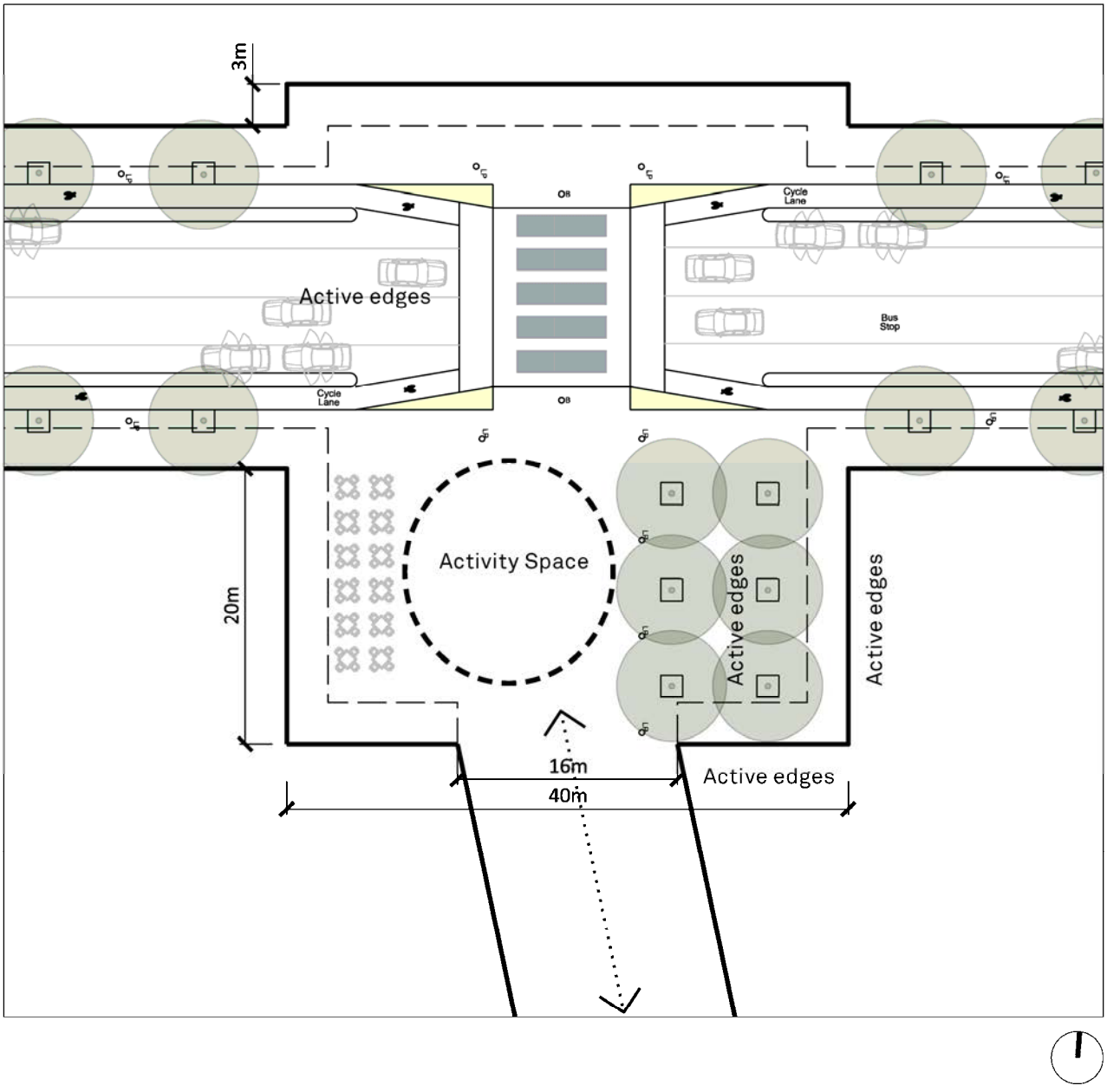


Figure 4-11: Layout of the Civic Centre Plaza

4.4.4 Small Urban Plazas and Pedestrian Through-site Links

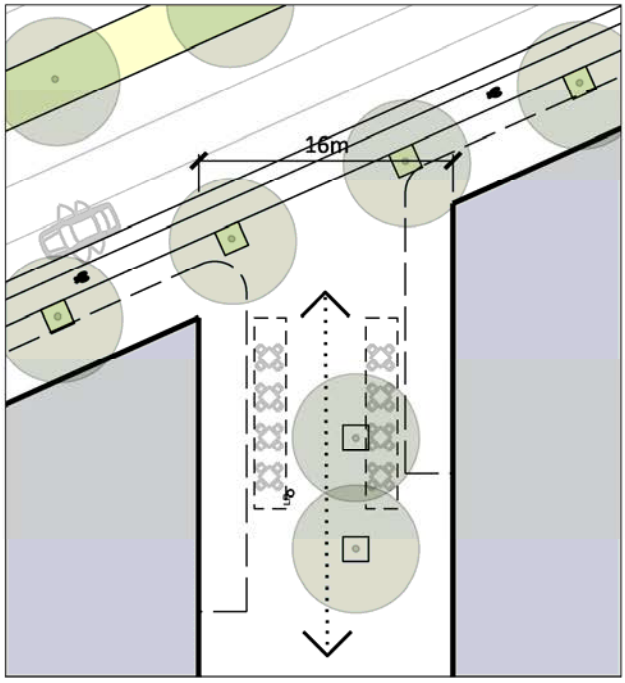
Controls

1. Small plazas and through site links are to be integrated with the design of development in the Major Centre.

2. Pedestrian through site links are to be located mid-block and where they will enhance pedestrian connectivity within the Centre.

3. The design of the Small Plazas is to be consistent with the controls below and **Figure 4-114-11**.

Quality of Materials	• Pedestrian pavement to be high-quality unit paver.
Trees	• Provide shade trees in eastern corner to provide shade from the west in summer.
Activation	• Locate outdoor dining areas at corners. Provide planter beds / awnings / retractable canopies for sun protection. • Through-site links and small urban plazas are publicly accessible 24hrs. • Provide multiple areas for public seating with good visual surveillance and protection from summer sun (eg. shade trees). • Coordinate locations with pedestrian desire lines to avoid conflicts. • Opportunity for bespoke street furniture and public art integration into public seating.
Parking loading and vehicle access.	• Provide event and emergency vehicle access to the Civic Centre Plaza via the mid block crossing using removable bollards.
Through site link	• Provide through-site link access to retail areas at mid-block crossing location from the plaza. Provide additional building setbacks at entrances. Through site links are publicly accessible 24hrs.
Awnings and weather protection	• Supplement weather protection for outdoor dining areas with umbrellas and retractable awnings.
Water Sensitive Urban Design	• WSUD to be integrated with tree planting Tree pits within the plaza are to collect and treat rain water from impervious surfaces to meet water quality standards specified in this DCP. • WSUD measures to be integrated with water features where practical.
Lighting	• In addition to street lighting, provide pedestrian lighting to plazas, mid-block crossings, marked and signalised pedestrian crossings, cycle lanes and through site links. • Provide feature lighting (eg. catenary) in the Civic Centre Plaza.



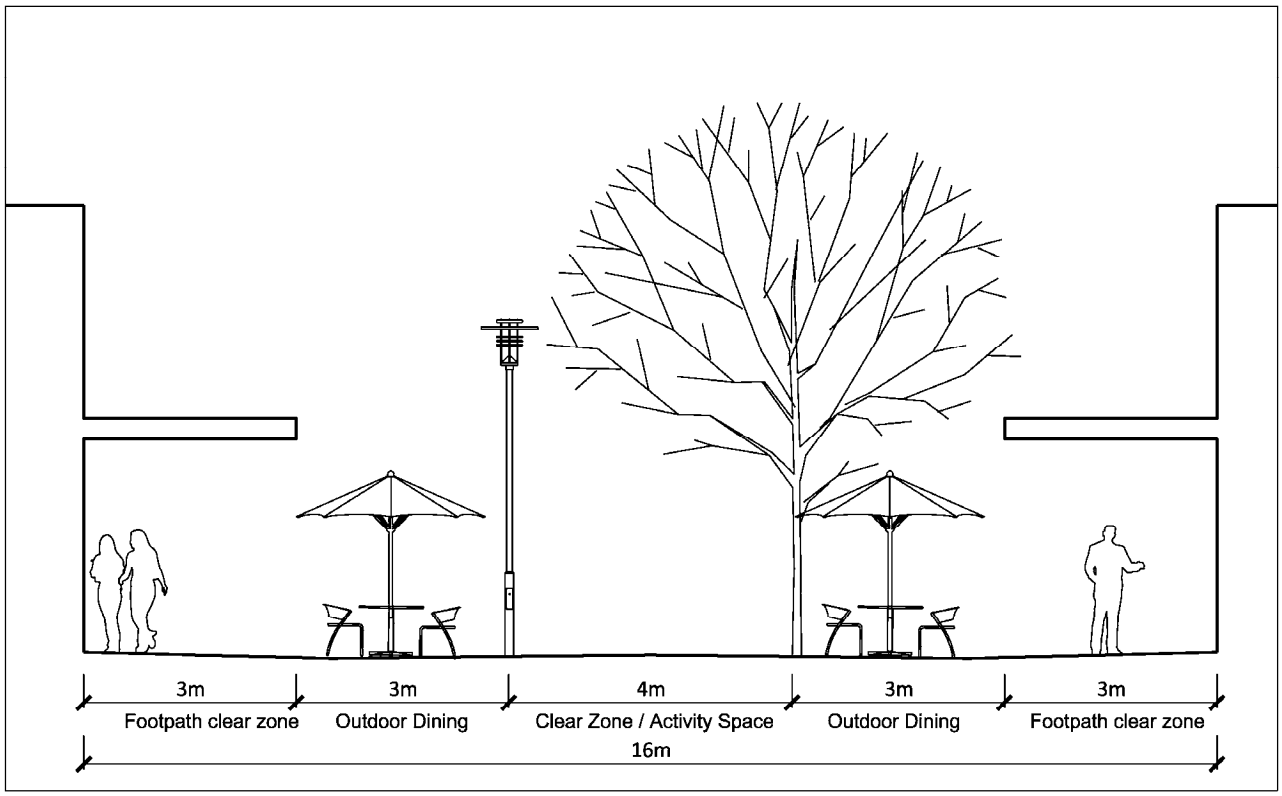


Figure 4-12: Design of small plazas

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4.5 Public Open Space

The Scalabrini Creek Corridor, west of the Town Centre and Civic Centre, provides the major north-south connecting open space element for the Major Centre. District level open space areas adjoin the creek corridor close to the retail core. This area of open space will act as a focus for community events and passive recreation, serving both the local residents, the Business Park and visitors to the retail core.

On the eastern side of the Major Centre, Byron Road Park provides a mix of sport facilities and a passive recreation environment serving local residents and the adjoining Business Park. Connecting north of Byron Road Park, the Bonds Creek Corridor provides a north-south connecting open space element, its recreation function serving primarily the adjoining residents.

Objectives

a. Public open space is to be integrated with the built form of the Major Centre.

b. Public open space is to provide a range of recreational and social opportunities for workers, residents and visitors to the Major Centre.

c. The design of public open space is to respect the natural environment, integrating water sensitive urban design and the rehabilitation of Riparian Protection Areas.

Controls

1. The design of Parks is to take into account the following principles:

    - integrate passive and active recreation functions with environmental functions;
    - quality of social spaces;
    - safety and perceptions of safety;
    - provision for sight and mobility impaired;
    - cater for special public events, markets etc;
    - pedestrian walkways and pavement surfaces;
    - pedestrian lighting;
    - location and amount of seating;
    - visual amenity;
    - cultural significance - places for social interaction and public art; and
    - maintenance requirements.

2. The design of public open space is to be generally in accordance with the concept designs at **Figure 4-13** to **Figure 4-16**.

3. Where public open space includes or is adjacent to a Riparian Protection Area, the concepts in **Figure 4-17** are to be implemented in the design.

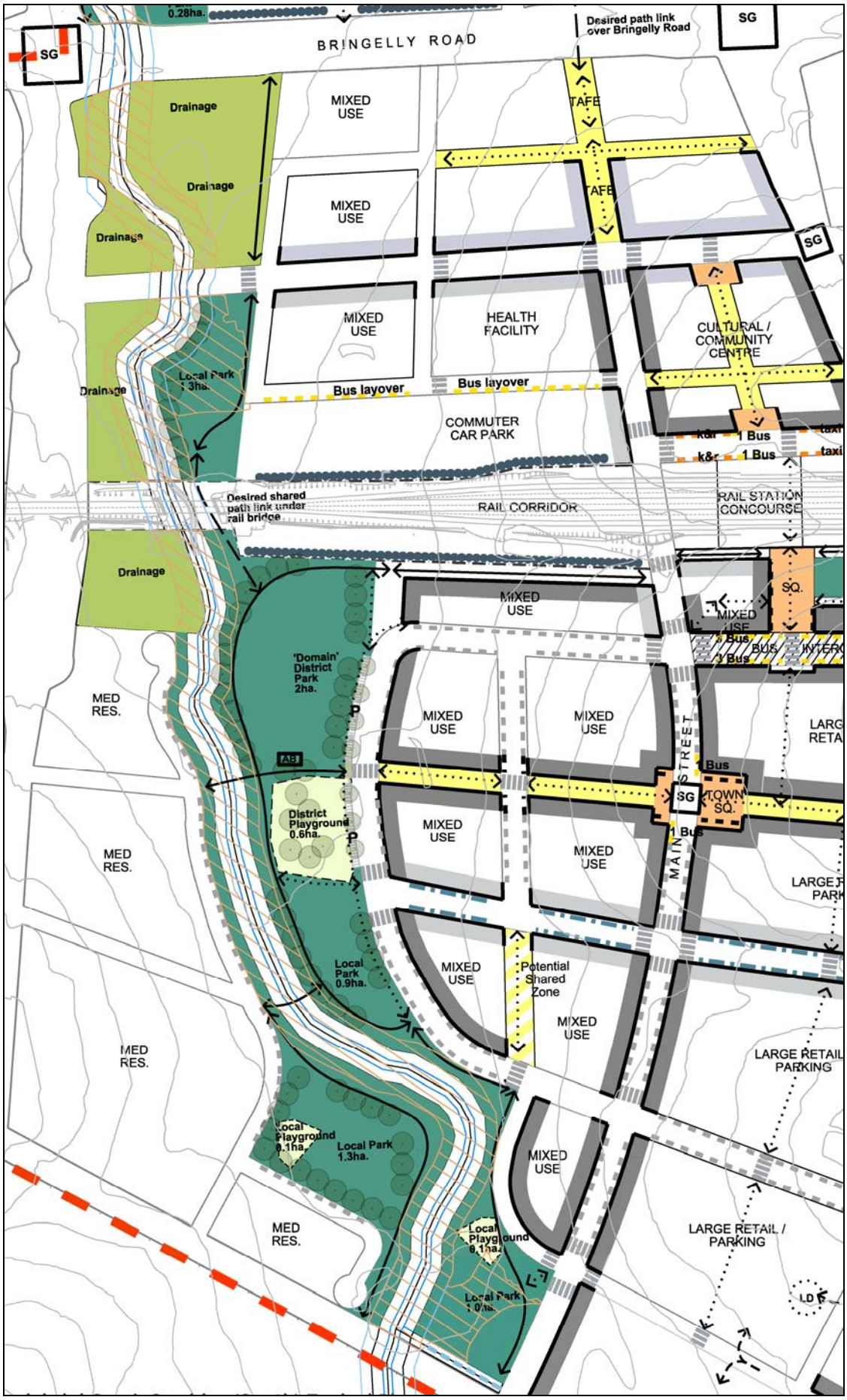
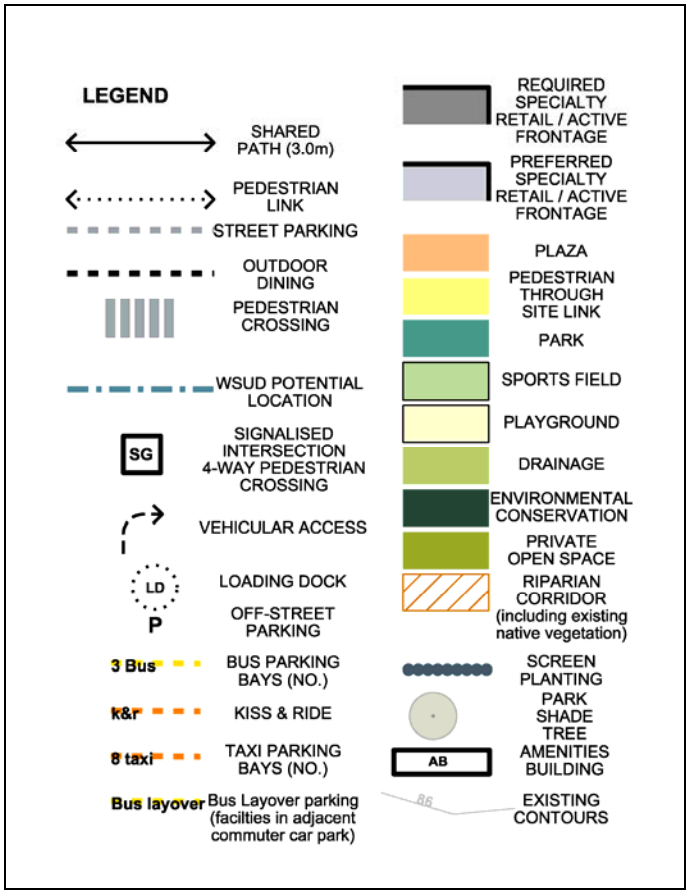

BRINGELLY ROAD
Desired path link over Bringelly Road
SG
0.28ha.
Drainage
MIXED USE
TAFE
HEALTH FACILITY
CULTURAL / COMMUNITY CENTRE
Local Park 1.3ha.
Bus layover
COMMUTER CAR PARK
1 Bus
RAIL CORRIDOR
Desired shared path link under rail bridge
RAIL STATION CONCOURSE
SQ.
'Domain' District Park 2ha.
MED RES.
AB
District Playground 0.6ha.
MAIN STREET
TOWN SQ.
Local Park 0.9ha.
Potential Shared Zone
LARGE RETAIL PARKING
Local Playground 0.1ha.
Local Park 1.3ha.
LARGE RETAIL / PARKING

Figure 4-13: Scalabrini Creek Corridor (South) concept design



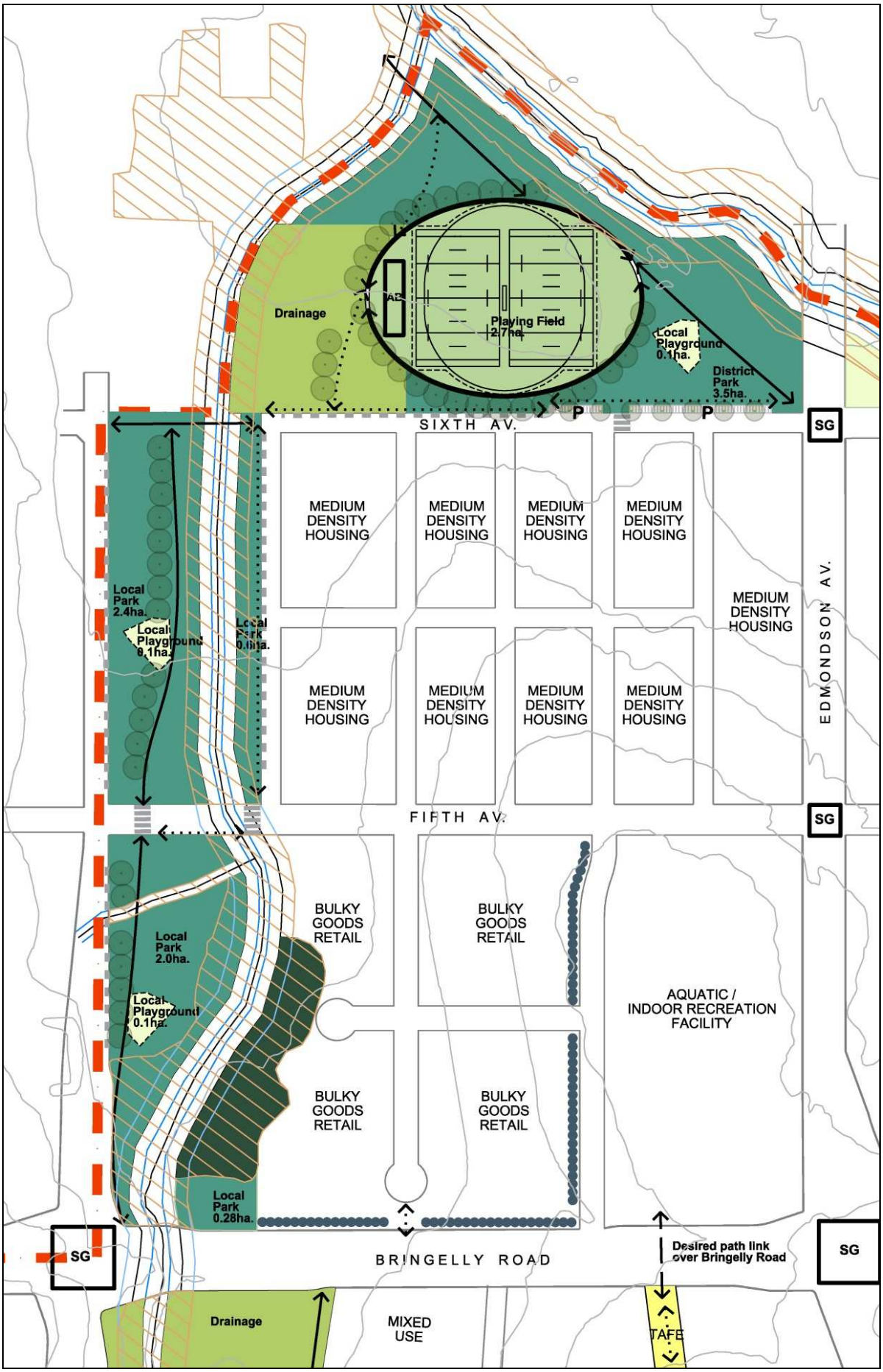
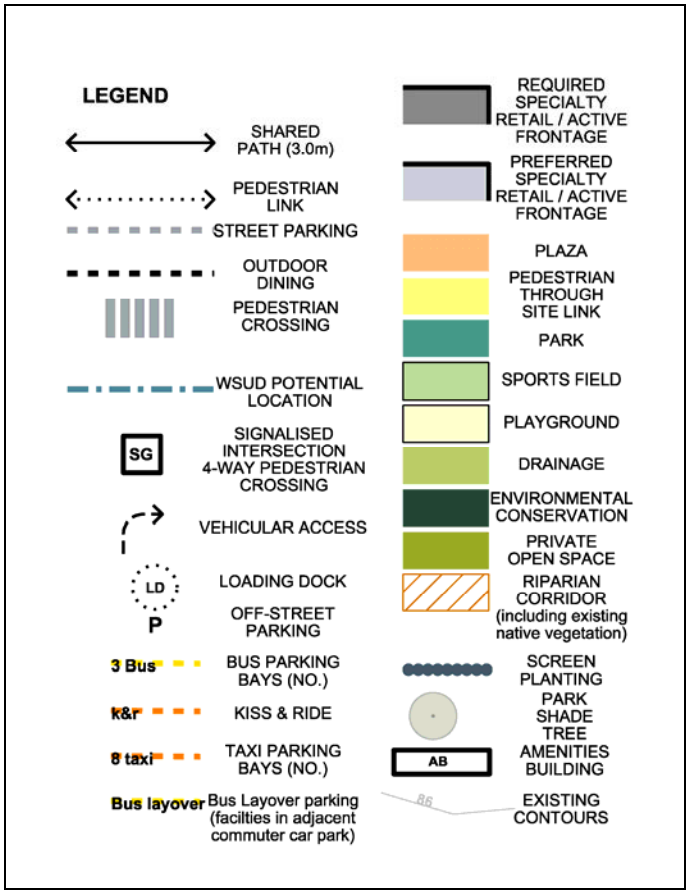

Drainage
AP
Playing Field 2.7ha.
Local Playground 0.1ha.
District Park 3.5ha.
SIXTH AV.
P
P
SG
MEDIUM DENSITY HOUSING
MEDIUM DENSITY HOUSING
MEDIUM DENSITY HOUSING
MEDIUM DENSITY HOUSING
MEDIUM DENSITY HOUSING
EDMONDSON AV.
Local Park 2.4ha.
Local Playground 0.1ha.
MEDIUM DENSITY HOUSING
MEDIUM DENSITY HOUSING
MEDIUM DENSITY HOUSING
MEDIUM DENSITY HOUSING
FIFTH AV.
SG
Local Park 2.0ha.
Local Playground 0.1ha.
BULKY GOODS RETAIL
BULKY GOODS RETAIL
AQUATIC / INDOOR RECREATION FACILITY
BULKY GOODS RETAIL
BULKY GOODS RETAIL
Local Park 0.28ha.
SG
BRINGELLY ROAD
Desired path link over Bringelly Road
SG
Drainage
MIXED USE
TAFE

Figure 4-14: Scalabrini Creek Corridor (North) concept design



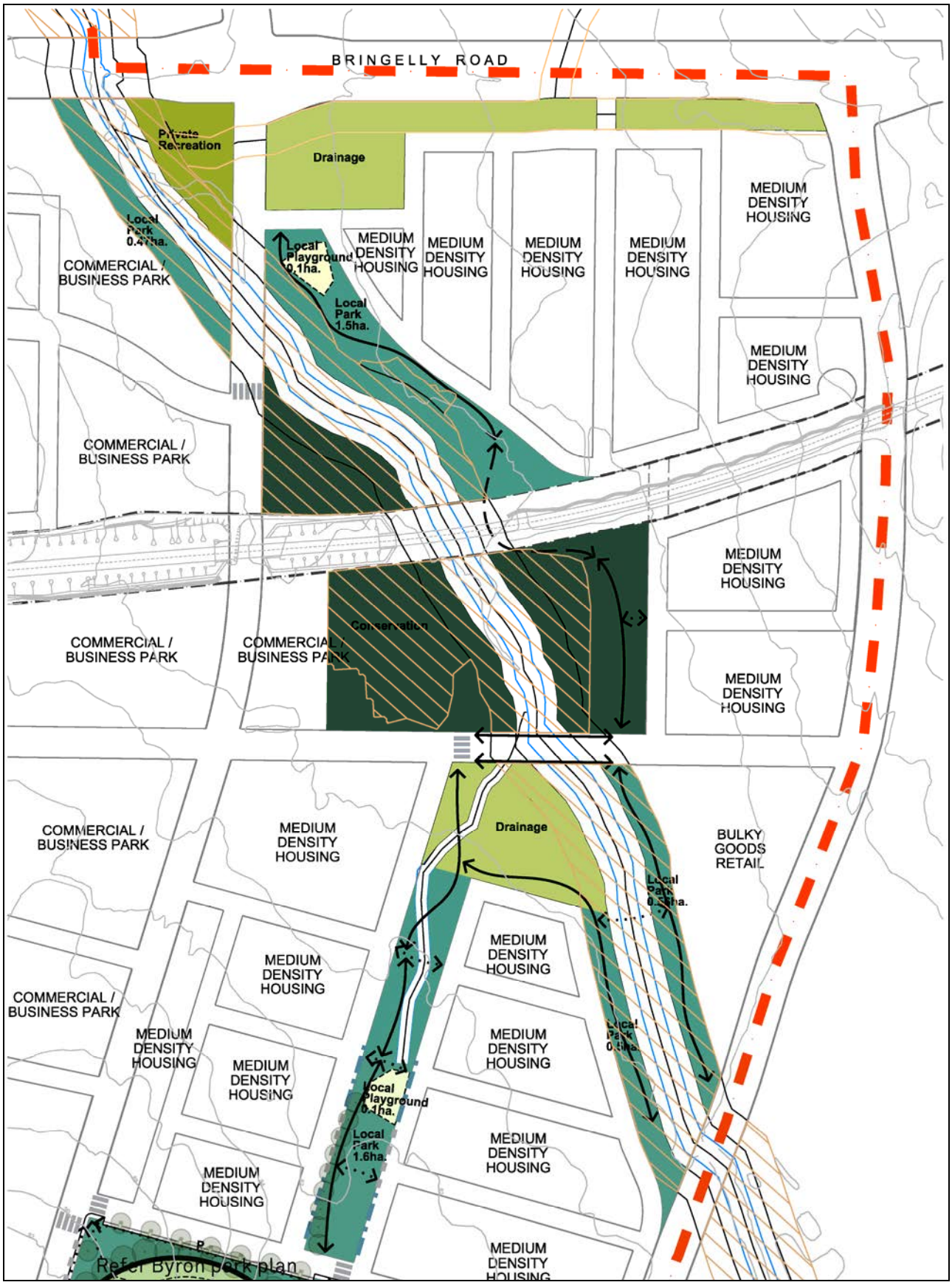
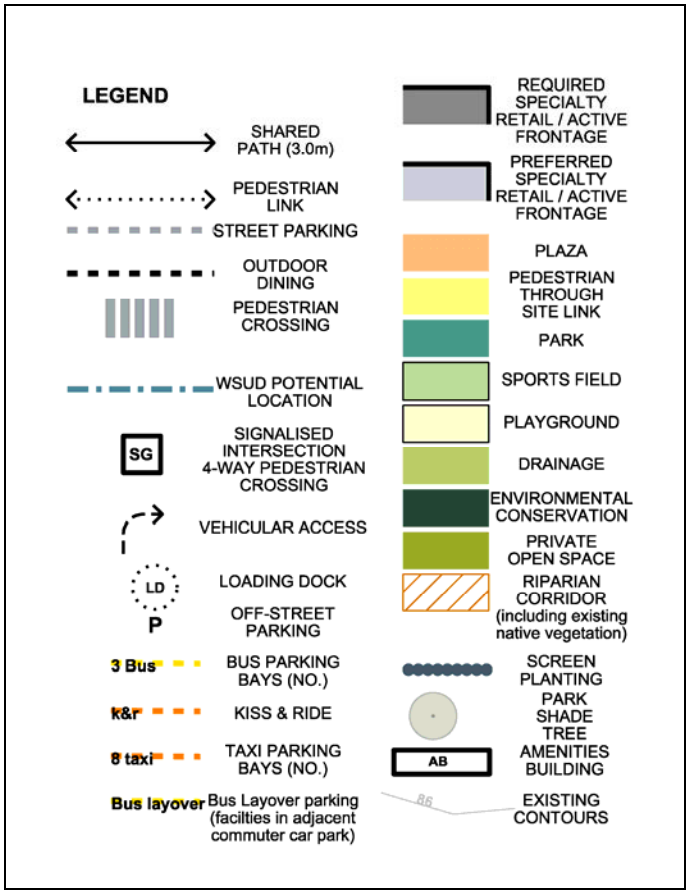

BRINGELLY ROAD
Drainage
MEDIUM DENSITY HOUSING
COMMERCIAL / BUSINESS PARK
Local Playground 0.1ha.
Local Park 1.5ha.
Conservation
BULKY GOODS RETAIL
Local Park 1.6ha.
Refer Byron park plan

Figure 4-15: Bonds Creek Corridor concept design



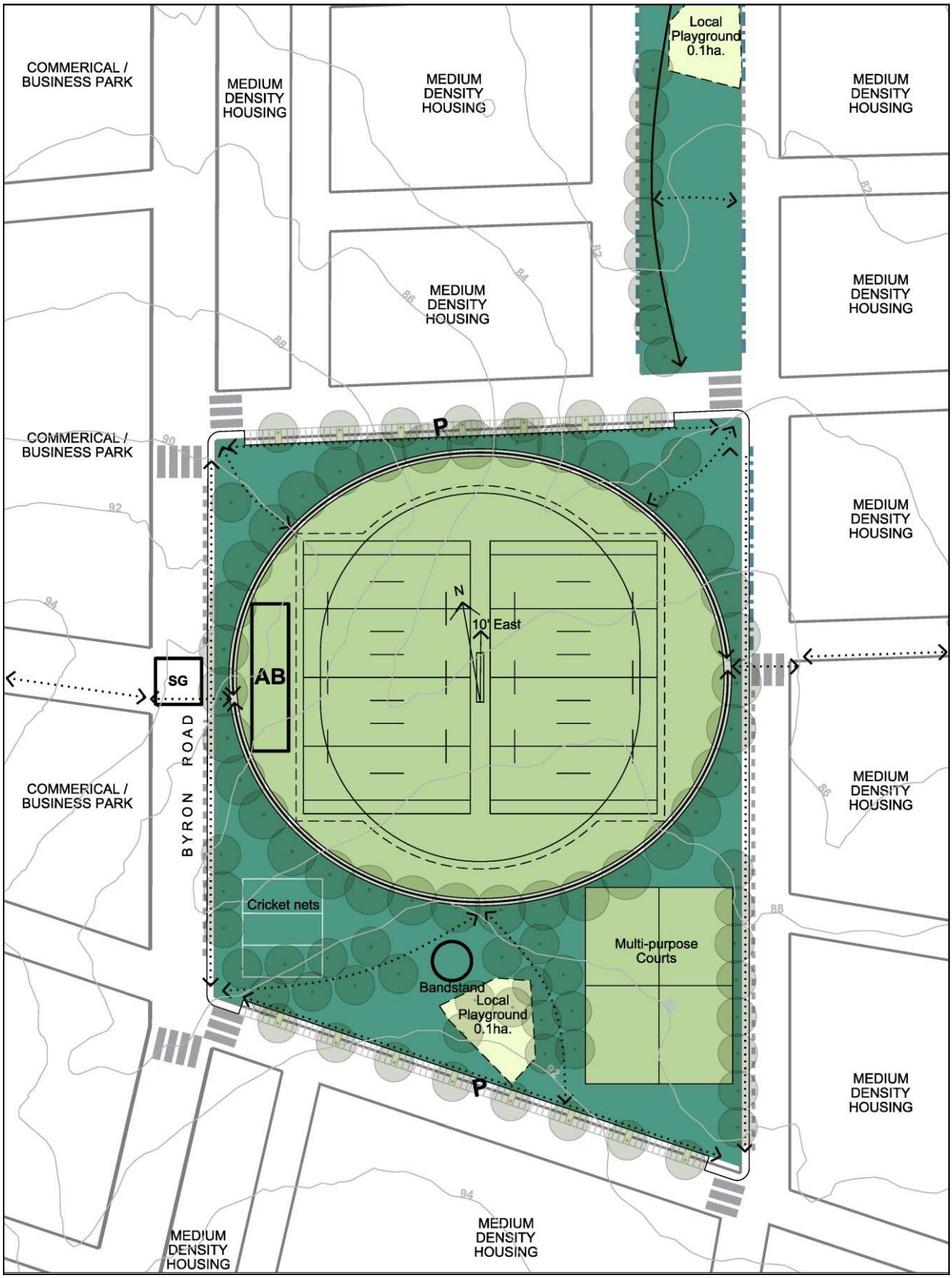
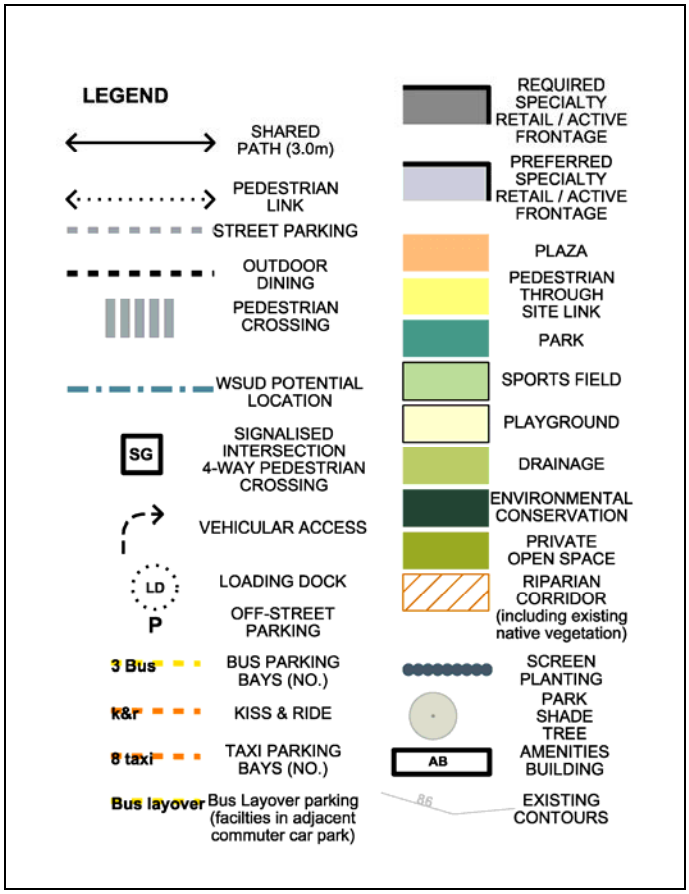

COMMERICAL / BUSINESS PARK
MEDIUM DENSITY HOUSING
MEDIUM DENSITY HOUSING
Local Playground 0.1ha.
MEDIUM DENSITY HOUSING
MEDIUM DENSITY HOUSING
MEDIUM DENSITY HOUSING
COMMERICAL / BUSINESS PARK
P
MEDIUM DENSITY HOUSING
N
10° East
AB
SG
BYRON ROAD
COMMERICAL / BUSINESS PARK
MEDIUM DENSITY HOUSING
Cricket nets
Multi-purpose Courts
Bandstand
Local Playground 0.1ha.
P
MEDIUM DENSITY HOUSING
MEDIUM DENSITY HOUSING
MEDIUM DENSITY HOUSING

Figure 4-16: Byron Road Park concept design



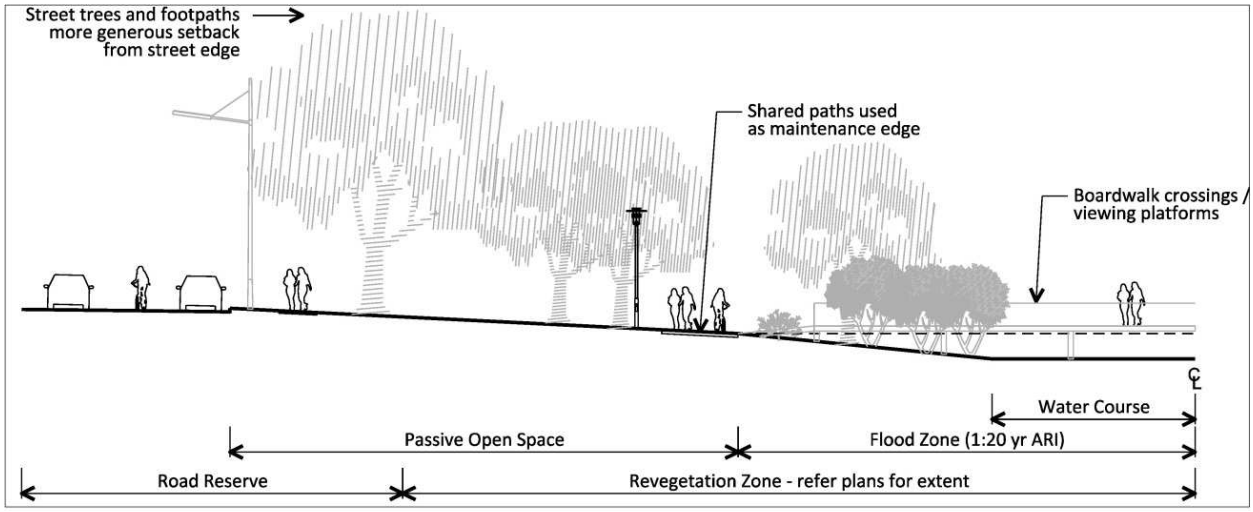


Figure 4-17: Concept design for open space corridors incorporating Riparian Protection Areas

5 Building Controls

5.1 Building envelopes and setbacks

5.1.1 Building orientation

Objectives

a. To establish a positive interface between buildings, streets, parks, plazas and squares.

b. To provide passive surveillance and activity within the public domain.

c. To ensure that buildings are positioned and orientated to maximise energy efficiency, take advantage of sunlight and provide protection from inclement weather.

Controls

1. Buildings are to be orientated towards and provide active frontages at street level, to Rickard Road, the Main Streets and preferably to Town Centre Streets, as shown on **Figure 5-15-1**.

2. Active ground floor uses that include outdoor seating and/or openable shopfronts are best orientated towards the north or east, however these uses are encouraged facing Rickard Road, the Main Street and Town Centre Streets regardless of their orientation.

3. The main pedestrian entries to buildings, including ground floor retail and commercial premises that face the street, are to be from the streets listed in the controls above with active frontages.

4. Buildings are to be orientated towards major access roads in the Leppington Major Centre, including Eastwood Road, Dickson Road, Ingleburn Road, Bringelly Road, Byron Road, Edmondson Avenue, Camden Valley Way and Cowpasture Road. Blank walls are not to face these roads, and glazing is to occupy at least 50% of the building façade width facing these roads.

5. Service and utility bays, loading docks and car park entries are to be orientated towards Service lanes, or where this is not possible, to streets that are not specified as requiring at Active Frontage in **Figure 5-15-1**. Where vehicle entry is provided from a Town Centre Street, car parks, service bays and loading docks are to be screened from view from the street.

6. Large format retail such as supermarkets and parking areas are to be sleeved or hidden by retail and commercial uses, or designed with a high proportion of glazing where the building fronts directly onto the Main Street or Town Centre Streets.

7. Buildings are to be orientated to provide attractive, active building frontages and passive surveillance to public open space, land zoned for drainage purposes, plazas, squares and pedestrian through-site links.

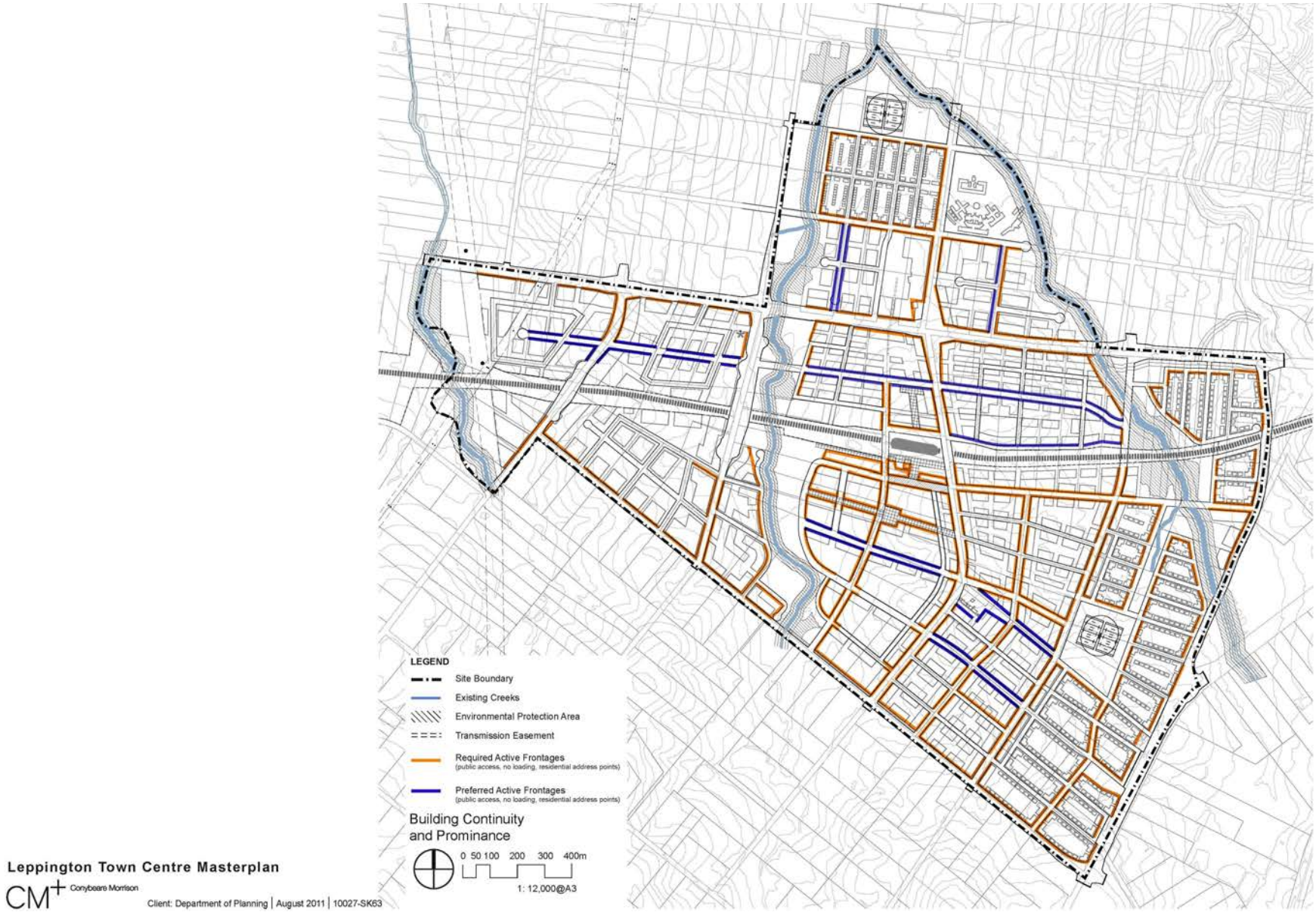


Figure 5-1: Building orientation

5.1.2 Setbacks

Objectives

a. To establish consistent building lines fronting streets and other elements of the public domain.

b. To provide sufficient space between buildings and the street for landscaping where necessary.

c. To establish the desired vertical and horizontal spatial proportions of streets and other public places.

d. To provide a defined street edge within a town centre context.

e. To encourage passive surveillance of streets and other public spaces.

Controls

1. Building setbacks are to be in accordance with **Figure 5-25-2**.

2. Where **Figure 5-25-2** identifies a zero setback, buildings are to be built to the property boundary (i.e. a zero setback), for at least the ground floor and first floor.

3. Projections beyond the zero setbacks lines may include awnings, verandas, balconies, roof overhangs and blade walls above street level.

4. On land where a front setback other than a zero setback applies, façade articulation elements may extend into the front setback to a maximum of 1.5 metres and for a maximum of 50% of the length of the building facade.

5. Setbacks for residential buildings (apart from residential buildings that contain retail or commercial uses at the ground floor), are to be in accordance with the residential setback controls in Part 4 of the main body of this DCP.

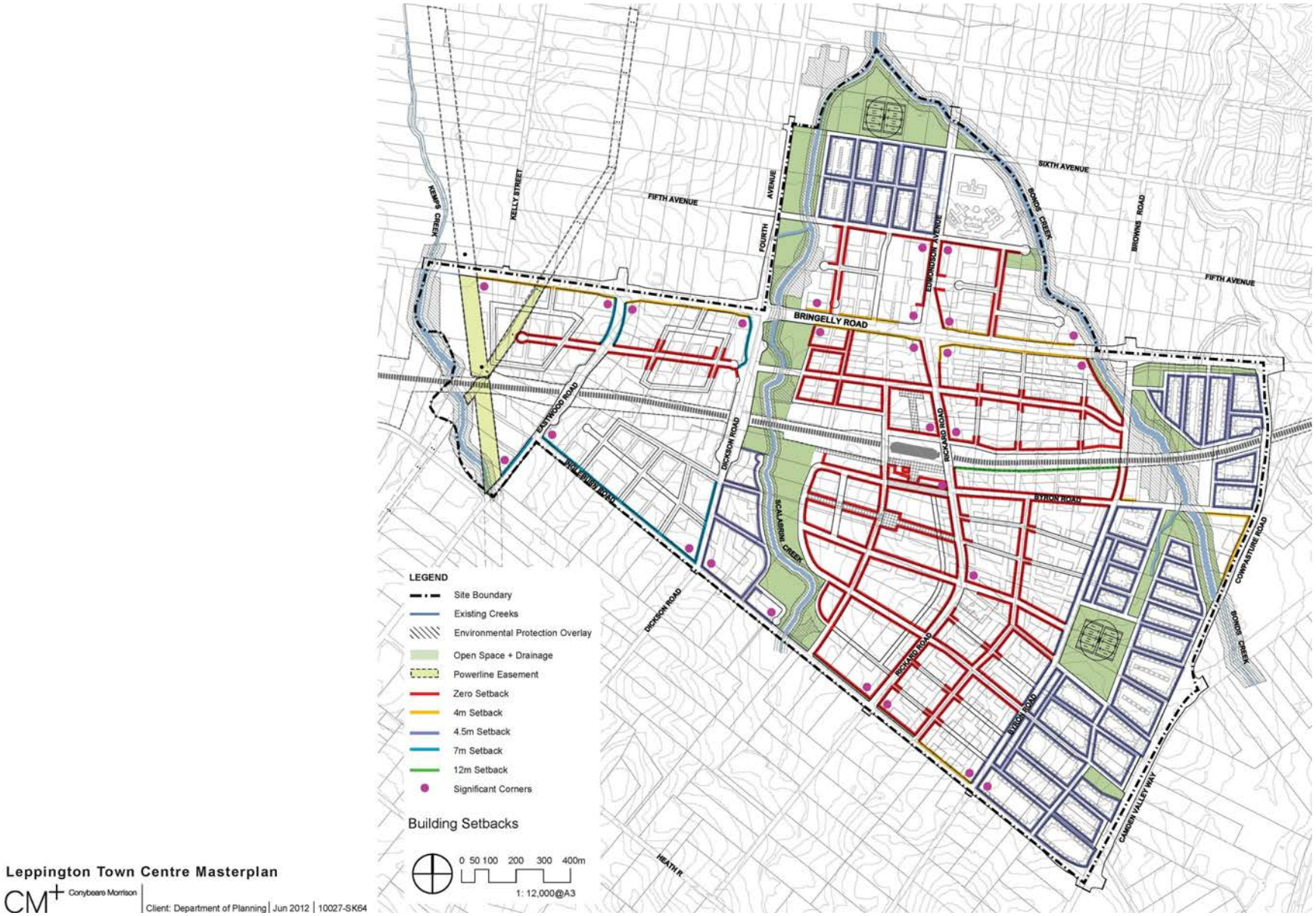


Figure 5-2: Building setbacks

5.1.3 Building height and envelope controls

Objectives

a. To control the height, bulk and scale of buildings to be consistent with the Leppington Major Centre Vision and Planning Principles.

b. To ensure appropriate sunlight penetration to streets and public spaces.

Controls

1. Maximum building heights are to be in accordance with **Figure 5-35-3**.

Note: *The Growth Centres SEPP specifies maximum building heights. The controls in this DCP are intended to provide more detailed guidance on appropriate building heights to achieve urban design, amenity and environmental sustainability outcomes for the Leppington Major Centre.*

2. The Rickard Road Transit Boulevard, Leppington Station, and prominent street corners should be reinforced in a visual context through concentrating building height and built form, as illustrated at **Figure 5-35-3**.

3. Taller buildings may also be concentrated along other major roads and adjacent to public open space, plazas and squares to emphasise and assist in way-finding to these public spaces, providing solar access requirements can still be achieved.

4. Above the first floor, building setbacks and separation distances are to be provided in accordance with the controls in Part 5 in the main body of this DCP.

Note: *it may be necessary to vary building setbacks and separation distances on upper floors from the numeric controls in Part 5 of the DCP, to ensure that privacy, amenity and solar access are provided in accordance with the relevant DCP controls.*

5. Buildings are to be designed to ensure a human scale is maintained at street level.

6. Minimum floor to finished ceiling heights are as follows:

    - Ground floor of all buildings (regardless of use): 3.6m
    - First floor for retail and/or commercial use: 3.3m
    - All other retail and/or commercial floors: 3.3m
    - All other residential floors: 2.7m

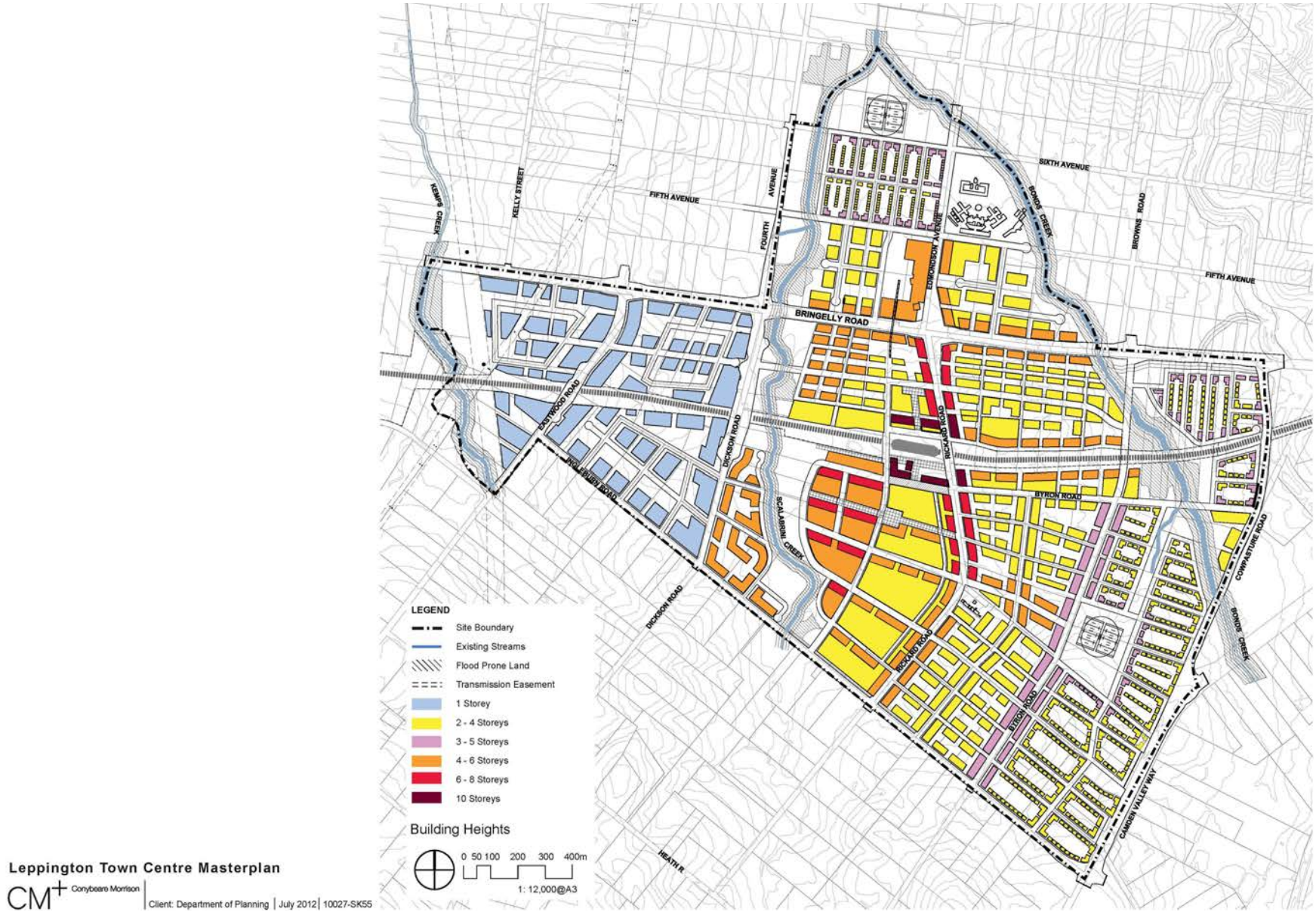


Figure 5-3: Building heights

5.2 Façade design

Objectives

a. To ensure that the design of building facades contributes positively to an attractive streetscape.

b. To encourage materials and finishes that are attractive, compliment the public domain, and are durable and easy to maintain.

c. To maximise activity and surveillance at street level.

Controls

1. Articulation zones should be provided to compliment the building mass and emphasise key design elements such as entrance points and respond to environmental conditions including solar access, noise, privacy and views.

2. External security shutters are not permitted.

3. On corner sites, shop fronts are to wrap around the corner.

4. Entries to residential or commercial lobbies, facing Rickard Road, Main Town Centre Streets or Internal Access Streets, are to be a maximum of 50% of the building frontage width or 10 metres, whichever is the lesser.

5. Architectural expression should be diverse across building groups/blocks and facades should be articulated to create visual interest.

6. There should be a contemporary architectural style based on simple primary building forms and a fine grained assemblage of elements (which may incorporate the diversity of character of streetscapes in historic towns such as Camden).

7. Façade design should create a series of vertical elements along a building length reflecting a traditional main street façade.

8. Building facades are to be designed to accentuate key architectural features and clearly delineate points of interest such as building entries, vertical and horizontal elements.

9. Building facades are to incorporate a variety of finishes and materials which provide visual relief to the built form and which complement the materials and colours adopted for the public domain (refer to **Part 4** of this Schedule).

10. Sleeve buildings are to be used to minimise the visual impact of large boxes, service areas and to define streets.

11. Roof forms and structures such as clock towers/spires are encouraged for key sites and roofs should be designed to break up the overall mass of a roof on a large building.

12. Roof elements should be used to screen mechanical plant.

5.3 Landscaping

Objectives

a. To integrate landscaping within development sites with the design of buildings and with the landscape character of the public domain.

b. To ensure landscaping contributes to an attractive streetscape, a safe environment for people, and to minimising the impacts of development on the natural environment.

Controls

1. A landscape plan is to be submitted for all development within the Leppington Major Centre where landscaped areas are required or proposed at ground level.

2. Where buildings require a setback of more than zero from the street, the setback area is to be landscaped and is to consist of predominantly soft ground with deep soil (ie. solid paving, concrete, or other impervious materials are to be minimised).

3. Landscaping within development sites is to complement the landscape character of adjoining streets and other public spaces (refer to the controls in **Part 0** of this Schedule).

4. The proportion of the site that is unpaved is to be maximised to enable maximum water infiltration. Planting is to include deep rooted tree species to assist in maintaining an appropriate water table.

5. Rainwater storage and re-use is required for all landscaping irrigation, with mains water only to be used as a backup. The capacity of on site water storage is to consider the likely water consumption required to maintain landscaped areas within the site.

6. Landscaping of development sites adjacent to Scalabrini Creek and Bonds Creek is to integrate with the natural characteristics of the existing vegetation or vegetation to be re-established along these creek corridors. Native (locally indigenous) plant species are to be the dominant landscape species in these locations.

7. Landscape plans submitted for development on bushfire-prone land (refer to the **Bushfire Risk and Asset Protection Zone Requirements** figure in **Schedule 1**) must be prepared in accordance with the NSW Rural Fire Service Planning for Bushfire Protection Guidelines.

8. Landscaping design and tree species selection is to consider solar access (in winter) and the provision of shade (in summer) to buildings, the public domain and outdoor areas within the development (including private or communal open space areas).

5.4 Water Sensitive Urban Design

Objectives

a. To protect and enhance natural water systems which may be affected by urban development.

b. To reduce storm water run-off and peak flows effected by urban development.

c. To meet stormwater quality targets through treatment systems such as bio-retention, swales, wetlands and raingardens.

d. To integrate stormwater detention and treatment with the urban structure of the Leppington Major Centre.

Controls

1. The Water Sensitive Urban Design controls in Clause 6.5 of the main body of the DCP also apply to development in the Business zones (B3, B4, B5 and B7) in Leppington Major Centre.

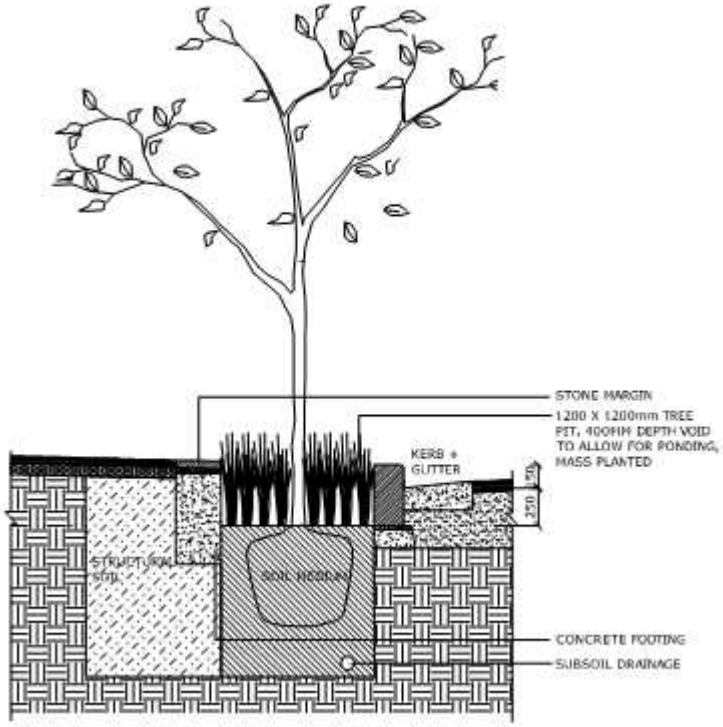
1. A Leppington Major Centre Water Sensitive Urban Design Strategy (WSUD Strategy) has been prepared by the Department of Planning and Infrastructure and is available from Council. Development applications must demonstrate compliance with the WSUD Strategy and the controls in this DCP (which take precedence over the Strategy) to Council's satisfaction.

2. Trunk stormwater detention basins and channels as shown on the Indicative Layout Plan have been designed to detain stormwater volume up to the 100 year ARI storm event from streets, residential zoned land and public spaces within the Leppington Town Centre. Detention of additional stormwater runoff as a result of other development is to be managed within the development site (on site detention) to ensure there is no increase in runoff in events up to the 100 year ARI event.

3. Where development adjoins or incorporates streets that follow drainage paths (low points), WSUD measures should be incorporated into the design of the street. Measures such as bioswales and tree pits are to be located in the road verge (as opposed to in a central median).

4. For individual Development Applications, a Water Cycle Management Strategy should be prepared by a suitably qualified consultant to demonstrate how the proposed development manages run off quantity and quality, reduces potable water use, minimises effluent production and integrates landscape irrigation with recycled water.

5. Measures to treat stormwater quality, to achieve the targets specified in clause 2.3.3 of the main body of this DCP, are to be incorporated into each development. The design and location of water quality treatment devices is to be consistent with the WSUD Strategy, and integrated with elements of the development such as car parks, landscaped areas, private open space, communal outdoor areas and setback zones.



Source: City of Ryde Public Domain Strategy

Figure 5-4: Design of tree pits

5.5 Parking, loading and access

Objectives

a. To ensure an appropriate number of parking spaces are provided within the Leppington Major Centre to service the needs of businesses, residents and visitors.

b. To encourage modes of travel other than private cars for travel within and to the Leppington Major Centre.

c. To ensure efficient and safe access for delivery and service vehicles to businesses within the Leppington Major Centre.

d. To provide integrated vehicle, bicycle and service access points without compromising streetscape character or pedestrian amenity.

Controls

1. On street parking to be provided throughout the centre in accordance with the cross sections in **Part 4** of this Schedule to contribute to street life and surveillance.

2. Rates of provision for car parking are to be determined with reference to the car parking rates specified in Part 4 of this DCP for residential development, Part 5 for commercial and retail development and Part 6 for industrial development. Rates may be modified (subject to agreement by Council), or Council may restrict the provision of parking to a maximum number of spaces because:

    - Access to public transport means that dependence on private cars is reduced within the Leppington Major Centre, or
    - Traffic congestion is likely to occur because parking provision generates traffic volumes in excess of planned road capacity, or
    - The required rate of car parking would result in detrimental impacts on the character and amenity of the centre, or
    - On street parking is available in proximity to the proposed development, reducing demand for internal car parking, or
    - Provision is made for other modes of transport eg. Walking and cycling that would reduce the demand for car parking, or
    - Efficiencies in car parking use are achieved by locating the proposed development adjacent to another development or land use that has spare car parking capacity (in general or at certain times of the day) or where parking provision can be shared between the developments, or
    - Shared use of car parking by commuters and the development is proposed, or
    - A detailed assessment of required provision of car parking demonstrates that parking will be appropriately provided at a rate which differs from the standards.

3. Rooftop parking is discouraged to preserve the future amenity for residential flat buildings located in the centre.

4. Below ground car parking is encouraged for higher density residential and mixed-use development and for major retail and commercial development.

5. The majority of car parking is to be provided under or behind buildings, and on street to limit visual impact and maintain pedestrian amenity.

6. Where multi-level parking is proposed above ground, the car park is to be screened from view from Rickard Road, Main Town Centre Streets and Internal Access Streets by buildings that present an active façade to the street.

7. Parking, loading and service areas are to be accessed predominantly from Secondary Town Centre Streets.

8. At grade car parking is permitted where the main access is from a Secondary Town Centre Street and where site landscaping and buildings provide appropriate visual screening from public places.

9. Car parks are not to be visible from public parks, squares or plazas.

10. Where below ground parking is along a street edge and cross ventilation is desirable, any exposed section of car park wall is to be appropriately modelled and scaled.

11. Natural ventilation of basement and sub-basement parking areas is encouraged to be provided wherever possible.

12. Service vehicle access points should be consolidated where possible to limit the potential for conflict points.

13. Bicycle racks/storage areas are to be provided in all developments in accordance with the requirements of Part 5 of the main body of this DCP. Bicycle racks/storage areas should be provided for both residents/employees and site visitors.

14. Within the B5 Business Development zone, between Bringelly Road and Fifth Avenue, car parks are to be located internally (i.e. behind buildings that provide frontages to Bringelly Road, Fifth Avenue and Edmondson Avenue).

15. Within the B5 Business Development zone, where car parking, loading or service areas are located adjacent to land zoned for public recreation, landscaping is to be used to screen the car park from view from the public recreation land.

16. Loading and service areas are not to be located adjacent to or across a road from land zoned for residential or public recreation purposes.

5.6 Development and use of flood prone land

Objectives

a. To enable development that is appropriate to the level of flood risk that applies to parts of Leppington Major Centre.

b. To maximise the development potential of land in Leppington Major Centre, and the productive use of land that is affected by flooding.

c. To ensure that development does not create an increased risk of flooding or changes to flooding conditions.

Controls

1. Development within the 100 year ARI flood extent, as shown on the Floodprone Land figure in Schedule 1, is only to occur where the controls relating to flood prone land in Part 2 of the main body of this DCP are met.

2. Use of flood prone land for activities that are ancillary to development on adjoining (non flood prone) land are encouraged, subject to compliance with Council's Floodplain Risk Management Policy and the Precinct Water Cycle Management Strategy (available from Council), and may include:

    - Communal areas or private open space associated with residential or mixed use development or development in the Business Park.
    - Landscaping.

5.7 Heritage

Objectives

a. To conserve and enhance the heritage significance of heritage items.

b. To retain an appropriate landscape setting for the item and views associated with the place.

c. To encourage ongoing use of heritage items, including adaptive reuse where this will contribute to the conservation of the item.

Controls

1. Developments in the vicinity of Leppington School Heritage Item must be sympathetic to the scale, massing and character of the significant weatherboard buildings and their garden setting. Buildings shall not exceed two storeys in height within 10 metres of the curtilage of the Leppington School site. Developments shall incorporate landscape treatments to ensure an appropriate transition of building scale between the heritage item and adjacent development.

2. Developments that coincide with the former Eastwood Road historic road alignment shall conserve elements of the original road alignment within the landscape, either by means of a natural landscape corridor or other forms of interpretation such as explanatory signage.

5.8 Staging of development

Objectives

a. To recognise that development of the Leppington Major Centre will occur progressively over a number of years and that early stages of development have the potential to influence long term outcomes for the centre.

b. To ensure that development, at all stages of the development of the centre, is consistent with the Leppington Major Centre Vision and Planning Principles.

c. To maximise the efficient delivery of infrastructure necessary to enable development to occur in the centre.

Controls

1. Development in the early stages of growth in the centre should be designed, oriented and located to comply with the relevant controls in this schedule, or to not preclude future development from complying with the controls and Planning Principles.

2. To the extent that it is practical, early development in the centre is to consider the layout, orientation and scale of future stages of development that may occur and whether the proposed development will enable future stages of development to occur.

3. In support of Control 2, Council may require the applicant to submit concept plans showing how the proposed development would integrate with potential future stages of development on the land or on adjoining land, in a manner that is consistent with the controls in this Schedule.

4. Temporary access arrangements may be agreed to by Council in situations where the road network is not sufficiently developed to enable compliance with the parking, loading and access requirements of clause 5.4. Where temporary access arrangements are proposed, applicants are to demonstrate how the development will enable transition to permanent access arrangements that comply with clause 5.4 when the road network is sufficiently completed.

5. To enable the efficient development of land in the early stages of the centre, Council may consider amendments to the locations of roads as shown on the Indicative Layout Plan, where necessary to maximise the development potential of land or to ensure that appropriate access is provided.

6. Despite Control 5, the locations of the Main Street, Bus Interchange Street and Town Centre Streets are generally fixed and applicants will be required to construct these roads at, or as close as possible to, the locations shown on the Indicative Layout Plan.

7. Council will generally require the full width of roads to be constructed as part of any development proposal that requires the construction of a new road, except for the road verge and footpath on the side opposite the development, where applicants can demonstrate to Council that that verge and footpath is not required to service the proposed development. Where the new road straddles a property boundary, Council may accept amendment to the location of the road to ensure the full road

carriageway width (and full width of verges/footpaths where required) can be constructed within the development site.

8. Construction of half road widths will only be permitted where the applicant can demonstrate to Council that the half road will have sufficient capacity and be safe for the predicted traffic volumes. Half roads will not be permitted where they form the primary means of vehicular access to parking areas for retail premises or commercial premises.

9. **Figure 5-55-4** illustrates the potential staging of development in Leppington Major Centre, based on factors including likely water, sewer and electricity servicing, development of the road network and demand for different types of development in the town centre. The staging of development is not required to occur as shown on **Figure 5-55-4**, but is to consider the other requirements of this clause to contribute to the orderly and efficient development of the centre.

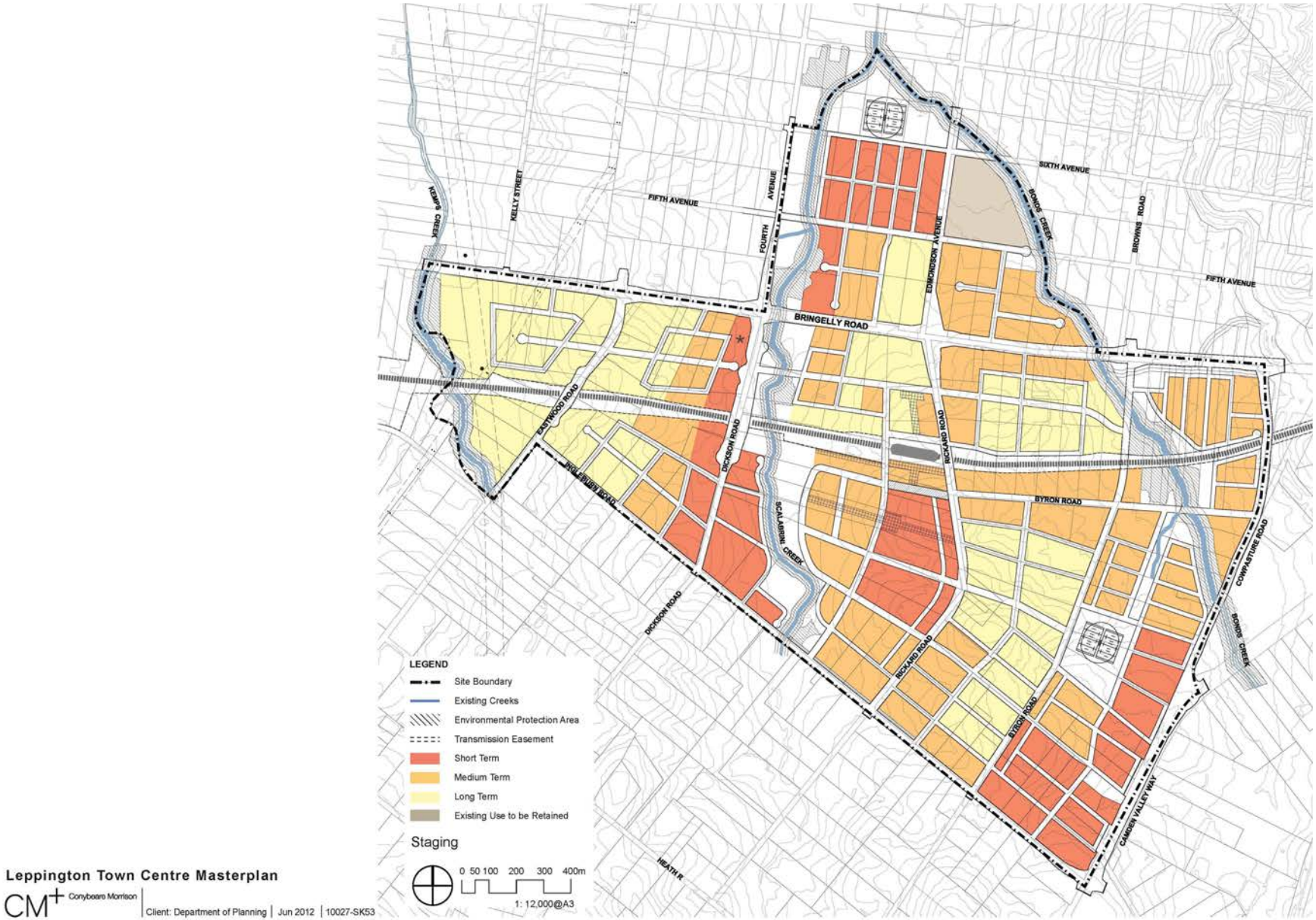


Figure 5-5: Indicative development stages in Leppington Major Centre