



LEPPINGTON MAJOR CENTRE

Public Domain Strategy



Prepared for

The Department of Planning and Infrastructure
NSW Government

Prepared by
AECOM Design + Planning
Level 21, 420 George Street, Sydney, NSW 2000
PO Box Q410, QVB PO, Sydney, NSW, 1230
T +61 2 8934 0000 F +61 2 8934 0001 www.aecom.com

contact: Greg.Burton@aecom.com

© AECOM Australia Pty Ltd (AECOM). All rights reserved.

AECOM has prepared this document for the sole use of the Client and for a specific purpose, each as expressly stated in the document. No other party should rely on this document without the prior written consent of AECOM. AECOM undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use this document. This document has been prepared based on the Client's description of its requirements and AECOM's experience, having regard to assumptions that AECOM can reasonably be expected to make in accordance with sound professional principles. AECOM may also have relied upon information provided by the Client and other third parties to prepare this document, some of which may not have been verified. Subject to the above conditions, this document may be transmitted, reproduced or disseminated only in its entirety.

Table of Contents

Introduction	5	Parks	55
Indicative Layout Plan	6	Scalabrini Creek Corridor (South)	56
Creating successful centres	8	Case Study: Sydney Park Playground	58
		Scalabrini Creek Corridor (North)	60
Vision	11	Bonds Creek Corridor	62
		Riparian Corridor Treatments	64
		Byron Road Park	66
		Case Study: Petersham Park	68
Place Making Principles	13		
		Plazas	71
Streets	19	Town Plaza	72
Street Types	20	Case Study: Rouse Hill Town Plaza	74
Street Slopes	21	Rail & Bus Interchange Plaza	76
Street Aspect	22	Case Study: St Leonards Plaza	78
Street Trees	23	Civic Plaza	80
Views and Open Space	24	Small urban plazas & through site links	82
Pedestrian and Cycle Links	25		
Town Centre	26	A1 - Indicative Layout Plan	85
Town Centre - wayfinding strategy	28		
Town Centre - SWRL interim design	30	A2 - Tree & Plant Species	89
Main Street Principles and Function	32		
Main Street (25m)	34	A3 - Material Guidelines	99
Town Centre Streets - Cycleways	36		
Town Centre Streets (25m)	38	A4 - Vision Workshop	105
Rickard Road - Transit Boulevard (34.9m)	40		
Bus Interchange (30m)	44		
Service Lanes (16m)	46		
Local Residential Streets (16m)	47		
Residential Collector (20m)	48		
Industrial Street (20m)	49		
Sub-arterial (29.1m)	50		
Bringelly Road (46.5m+)	51		
WSUD Street Integration Principles	52		



01

Introduction

Introduction

In April 2012, AECOM Design + Planning were commissioned by the NSW Department of Planning and Infrastructure to develop a Public Realm Strategy for the Leppington Major Centre. The Public Domain Strategy has been prepared as part of the Precinct Planning for Leppington Major Centre, the proposed largest centre of the South West Growth Centre. The project consists of the following major components:

- Development of a well-considered design and planning process beginning with a response to site conditions and development context, establishment of place making, urban design and landscape principles and strategies
- The preparation of a component of a development control plan that specifies the character, intent and appropriate controls to realise the strategy

The Austral and Leppington North Precincts

This report builds on the planning and design work prepared for the Austral and Leppington North Precincts which are being carried out as a single project. Refer to the appendix for the Indicative Layout Plan (ILP) for Leppington Major Centre. The Public Domain Strategy (PDS) will act to create a sense of unity and consistent identity throughout the Major Centre as it develops over time whilst providing a hierarchy of places that are appropriate to the needs of the future community. The PDS builds on the structure of public domain within the Leppington Major Centre ILP into 3 main components - Street, Parks and Plazas.

The outcomes of the strategy will be used to develop controls that will be added to development control plans in Camden and Liverpool in order to

achieve a coherent public domain that is consistent with its role as major centre of the South West Growth Centre whilst being relevant to people and place.

Project Objectives

The project objectives are:

- To produce a Public Domain Strategy for the Leppington Major Centre, suitable for inclusion in the Development Control Plans that will apply to the Leppington Major Centre
- To establish consistent design standards, materials and finishes and landscaping treatments for elements of the public domain, including streets, parks, plazas and squares within the Major Centre
- To ensure that as development occurs progressively within the Major Centre over a number of years and by numerous different developers, the public domain unifies the centre, is attractive, well designed and constructed, and sustainable
- To ensure that cost effectiveness and whole of life costs are considered in the design of public places, and the selection of materials and finishes
- To create a sense of identity and character that defines the Leppington Major Centre, integrates the built environment with natural systems, and promotes the Major Centre as a place to invest, work, visit or live weekday or weekend, day or night.

Project Stages

The Public Realm Strategy is in three stages:

Stage 1 – Vision

- The Vision will be informed by an up front Vision workshop with key stakeholders

Stage 2 – Public Domain Strategy

- Prepare place making, urban design and landscape principles to inform the Public Domain Strategy
- Prepare a strategic framework
- Provide an approach under each typology: streets, plazas and parks

Stage 3 – Development Control Plan

- This stage builds on the outcomes, strategies developed in the vision and strategy stages. The principles will be consolidated and articulated as integrated public realm controls informed by character statements. These controls and statements of intent form the basis of the overall public realm structure and identity

Indicative Layout Plan

The Leppington Major Centre includes a mix of land uses focused around a retail and civic centre and train / bus interchange.

The Major Centre will support significant numbers of new jobs and residents within the town centre catchment.

Forming a spine to the Major Centre, Rickard Road is the major north-south connecting road from the arterial Bringelly Road. Rickard Road will function as a transit boulevard, providing a mix of transit options including walking, cycling, public transport and cars. It connects the Retail Core and Business Park to the broader catchment.

The Retail Core is located south of the Rail and Bus Interchange, and west of Rickard Road, with adjoining areas of mixed-use and business park providing opportunities for a mix of commercial

and residential uses to complement the local retail uses.

The layout of the Retail Core includes provision for walkable, pedestrian and cycle friendly streets including several through site links that provide greater pedestrian connectivity.

A Main Street has been established as the major north-south street connecting the rail station, bus interchange, civic centre and retail core. This street will complement Rickard Road and will provide a focus for local retail street trade and community activity.

LEGEND

- Site Boundary
- Existing Creeks
- Environmental Protection Overlay
- Light Industrial
- Civic Precinct : 1 - Indicative Aquatic/Indoor Recreation Location
2 - Indicative TAFE Site
3 - Indicative Cultural/Community Centre Location
4 - Indicative Health Facility Location
- Mixed Use
- Commercial / Business Park
- Bulky Goods Retail
- Retail Core
- Medium Density Residential
- Rural Transition
- Passive Open Space
- Private Open Space
- Active Open Space
- Environmental Conservation
- Drainage
- Bus Interchange
- Commuter Carpark
- Indicative Substation Site
- Major Roads
- Primary Roads
- Road Subject to Flood Plain Filling Assessment
- Rail Corridor And Leppington Station
- Transmission Easement
- Plaza / Pedestrian Link

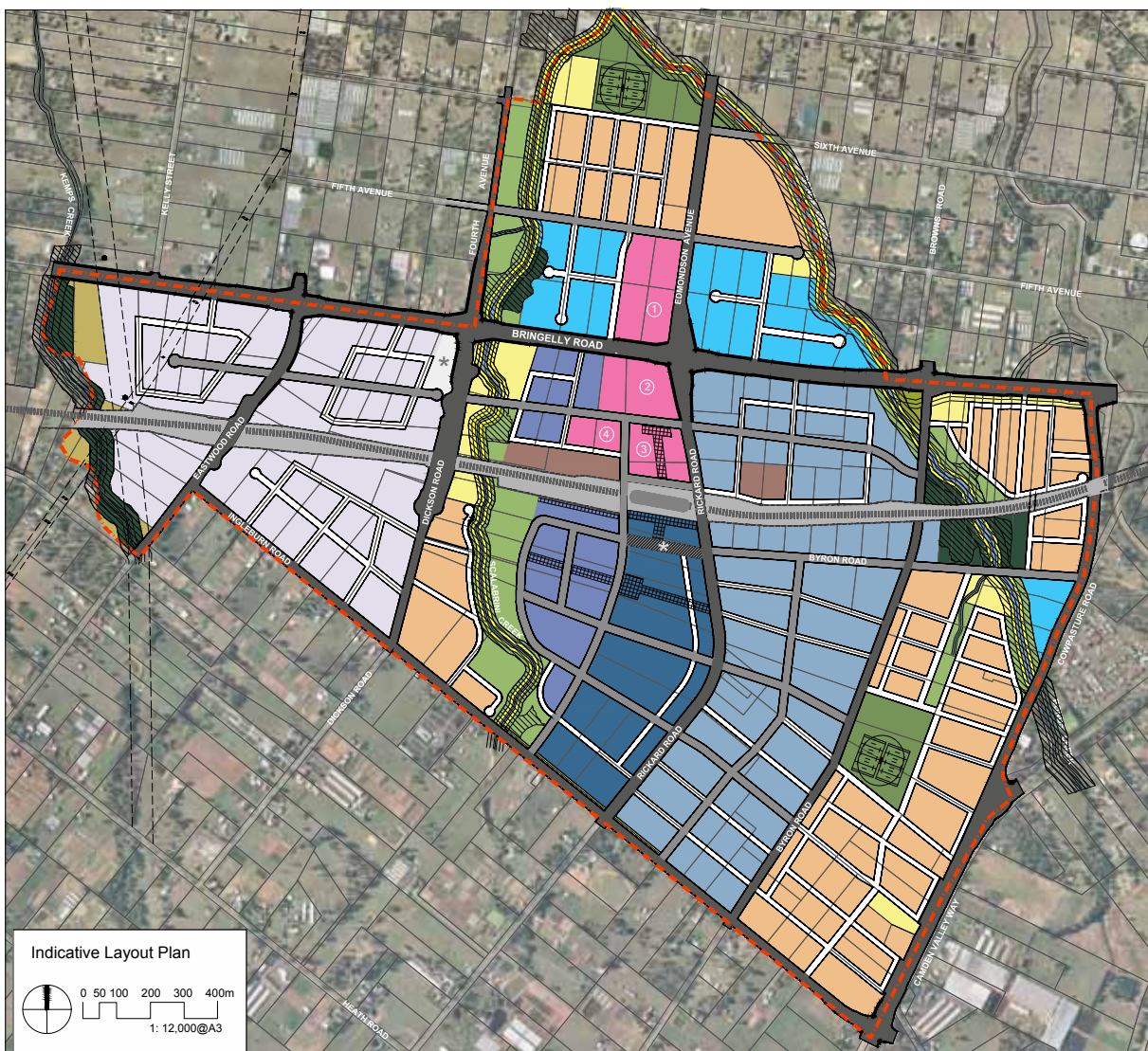
The Civic Centre, north of the rail and bus interchange, will provide a community, education, health and civic focus. In close proximity to the train and bus interchange and the Main Street, it is highly accessible.

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 Centre. 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 Local Park provides a mix of sport facilities and a passive recreation environment serving local residents and the adjoining Business Park.

Refer Appendix A1 for a larger copy of the Indicative Layout Plan.



Indicative Layout Plan (source: CM+)

Creating successful centres

A research project was conducted by AECOM in 2011 to reveal the key characteristics of a successful centre. Case studies were selected as examples of existing successful centres from a survey of professionals and academics in the field.

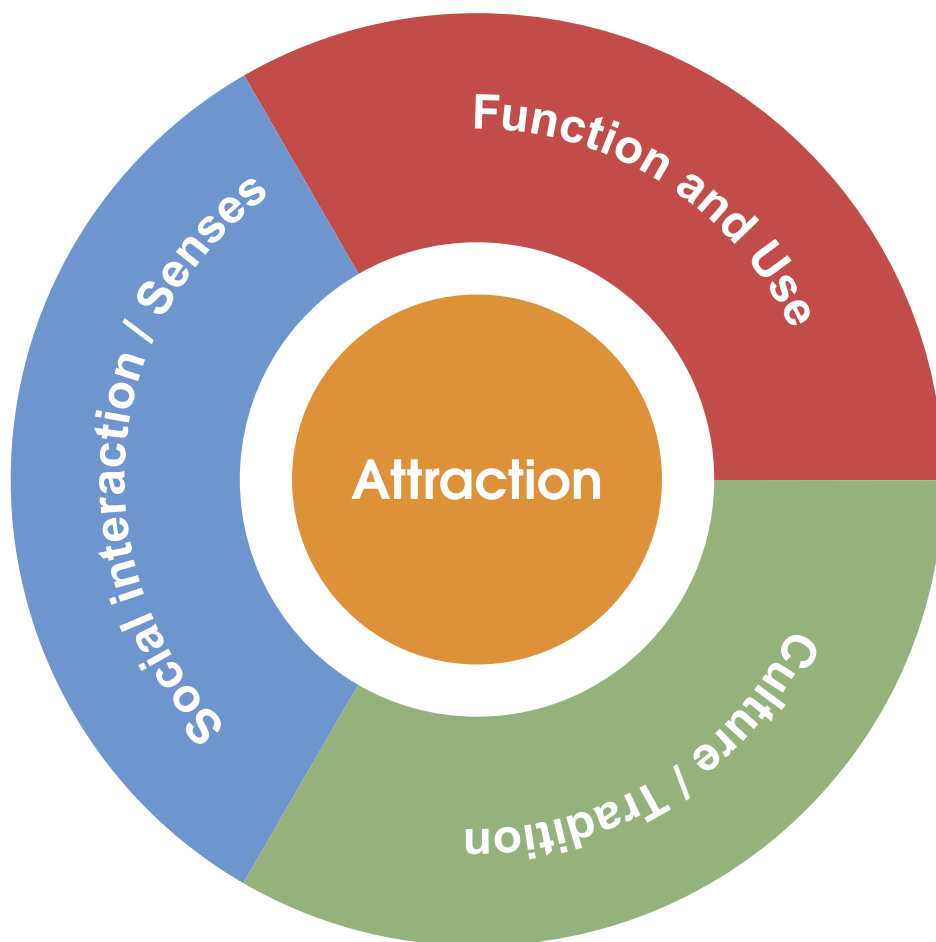
A place making analysis of these centres revealed the following characteristics of successful centres:

- Centres with a strong sense of community or village atmosphere are attractive to people
- A central open space, plaza or park that encourages social interaction is a key feature of a successful town centre
- All centres have a variety of community uses and services that respond to the needs of the community
- Centres often collocated diverse uses, such as community centres, services, schools and parks directly adjacent to the retail centre, increasing activity in the centre as people had multiple reasons to visit
- Variety and mix of retail and services attracts people daily
- All centres have a Main Street with continuous shop fronts and awnings that promote pedestrian movement
- Centres have a key economic anchor such as a supermarket, employment or other strong trade
- All centres are convenient and accessible by walking and public transport (either bus or train or both)

Successful centres must provide everyday needs for people, whether they be retail, service or food based, they must rate highly on convenience, and attract local users by active or public transport. Centres need to be economically anchored by a supermarket or other significant draw point such as the restaurants in Crows Nest that draw a district catchment and differentiate it from other centres.

Under economic change, centres which were successful for other key reasons such as strong community ownership, public domain accommodating active street life were more able to adapt to land use or service changes.

What attracts people to a centre?



Function and Use

- Provide multiple reasons for people to come
- Convenient and easy to access
- Provides for daily needs
- Walkable and bikeable
- Public transport promoted
- Economically sustainable

Culture / Tradition

- Character of the community is displayed
- Opportunities for creative expression
- Daily rituals and traditions reflected and provided for

Social interaction / Senses

- Encourages social interaction
- Welcoming to everyone
- Range of price points
- Comfort and climate responsive
- Diverse and engaging sensory experiences



02

Vision

Leppington Major Centre will be a place that welcomes all - it supports its people and accommodates diversity in its public domain.

Leppington Major Centre will be the central focus for the 300,000 residents of the South West Growth Centre. It will be the key destination providing jobs, retail, bulky goods, parks, industrial land, housing and commercial activities. It will connect the South West to Sydney through its railway station and bus interchange.

The public domain will be designed with people in mind. Streets, plazas and parks will form a network of interconnected places reflecting the identity of Leppington's inherent place character.

As a new centre this identity will grow and be defined over time as the people attribute meaning to the public domain as they use it.

Key to the development of its identity will be the multiple and complementary uses and activities that the design, location and connections of the public domain facilitates. An invitation to all is key to its success.

Vision

The Leppington Major Centre Public Domain Strategy will create a people scaled environment which reflects the role of Leppington as the Major Centre of the South West Growth Centre.

The public domain will act to draw the elements of the centre together acting as a destination for residents, workers, commuters and visitors.

Vision Objectives

The objectives of the public domain strategy are to:

- Create activity, by providing a variety of activities and destinations to draw in a range of people at all times, day and night
- Respond to the cultural, climatic, seasonal and diurnal behaviors to create a place that attracts people
- Provide physical openness and accessibility within and to the centre through passive wayfinding, clear views and vistas and connections to landscape elements
- Allow the interpretation of the identity of the place and people through the function, features and activities encouraged within the public domain
- Create a community and sense of belonging by creating public places that foster social interaction
- Design the public realm to be flexible and adaptable to a range of activities and events (including special celebrations - eg. Australia Day and Christmas) whilst being functional for every day needs
- Capitalise on the attention that water draws in a hot Western Sydney climate (eg. water features)
- Provide a dynamic experience through the provision of fast and slow places, designed for different uses and activities
- Utilise sustainable design and construction



03

Place Making Principles

The public domain is the fabric that ties the centre together, it provides the places for social interaction, determines the comfort and sensory experience, allows users to access destinations and daily needs, whilst reflecting the culture of the community.

The Public Domain Strategy for the Leppington Major Centre will provide controls in the Camden Growth Centre Precincts Development Control Plan (DCP) and the Liverpool Growth Centres Development Control Plan (DCP) to ensure the cohesive development of the public domain as consistent with the objectives and principles defined in this Public Domain Strategy and the Indicative Layout Plan.

Desired Future Place Character Statement

Leppington Major Centre will be a place that welcomes all - it supports its people and accommodates diversity in its public domain.

Approach

In order to satisfy the objective of creating a sense of identity and character that defines the Leppington Major Centre a place making approach has been integrated into the methodology. The following place making inputs will feed into the development of a specific desired future place character that will be identified for the Leppington Major Centre as a whole and for each individual precinct.

Specific place making principles and objectives have been identified for Leppington Major Centre and its precincts and various typologies. The character statement, principles and objectives will be informed by the following:

- Place Character Workshop with Council staff
- Site Visit and understanding of the Development Structure through a place audit
- Precedent review of similar successful public domains
- Incorporation of over arching place making principles
- Review of existing social and population demographic studies
- An understanding of the creation of microclimates in Western Sydney

What is place making?

Place making is a collaborative approach to the creation of places. It takes into account the needs and aspirations of the people that will use the place whilst maintaining the character of place. The approach taken for Leppington Major Centre involved workshopping the vision with stakeholders, learning from the existing place through a site analysis, research into the expected population and a precedent study.

Key Findings - People

Understanding the existing and expected future community is integral to providing the appropriate public domain to serve them.

The Austral and Leppington North Precincts Demographic and Social Infrastructure Assessment (Elton 2011) conducted an analysis of the existing social context. The report identified the following key features of the existing community of Leppington and Austral:

- In 2006, the combined population of Austral and Leppington was only about 4,700 people, reflecting the low density rural residential nature of the area
- The populations of Austral and Leppington are very similar to each other in their demographic characteristics. However, they differ from the broader Liverpool / Camden populations in some key features:
 - They have an older population, with a higher median age and higher proportion of the population in all age cohorts 55+. They have a lower proportion of young children (0-4 years) and young adults (25-35 years) than the surrounding area
 - Both median individual and household incomes are well below the medians for Liverpool LGA, and significantly below the Camden LGA medians, indicating that Austral and Leppington are predominantly low income areas
 - The proportion of the population born overseas and speaking a language other than English at home is slightly below the average for Liverpool, but well above the profile for Camden. In both areas, Italian is by far the biggest non-English language spoken
 - Consistent with their semi-rural character, Austral and Leppington both have a higher proportion of separate houses and lower proportion of attached dwellings than Liverpool LGA, although the profile is consistent with that of Camden LGA. Of note is the proportion of people living in other housing forms, primarily caravans and cabins, at the time of the 2006 census
- Rates of full ownership of homes are very high, despite the low income profile of the population
- The proportion of residents in rental housing is below the Liverpool average, but above that of Camden
- The populations of Austral and Leppington are relatively stable, with a higher than average proportion of residents living at the same address five years previously.
- Family structure, household type and average household size in Austral / Leppington are similar to the surrounding Liverpool / Camden area. This profile differs significantly from that of the broader Sydney SD, in terms of its very high proportion of family with children households, and low proportion of other household types. Reflecting the predominance of families, average household size is larger than the Sydney average

South West Sydney, and Camden and Liverpool LGA's in particular, have experienced very considerable urban development in the last decade or so. In 1996, Camden LGA had a population of around 32,000 people, and Liverpool 120,200. By 2006, this had grown to 49,650 people in Camden LGA, and 165,000 people in Liverpool LGA.

Since the 2006 census, further population growth has occurred in a number of new release areas within both Camden and Liverpool.

Analysis of the populations of nearby new release areas including West Hoxton, Horningsea Park, Prestons, Harrington Park and Mount Annan shows:

- In the 2006 Census, the predominant household type was a couple family with young children
- The median age in the new release areas was 29 years (range 27-32), compared with 35 for Sydney as a whole. Children (0-14 years) made up 29% of the population, compared with 20% in Sydney as a whole. Conversely, the proportion of people aged 65+ years is well below the Sydney average

- 35% of residents were born overseas, (compared with 31% for Sydney as a whole)
- Average household size generally ranged between 3.3 (Mount Annan) and 3.5 (Horningsea Park), but was as high as 3.7 in West Hoxton. By comparison, average household size for Sydney was 2.7 persons
- Household income was above the Sydney average, reflecting high rates of workforce participation to pay off a mortgage, rather than high individual incomes
- An average of 17% of households were renting their dwelling, compared with 29% for Sydney as a whole.

The following characteristics of the future population likely to live in Leppington have been identified (source: Elton)

“Demographic, cultural, and lifestyle patterns are changing rapidly, and will continue to change over the life of the development. The relative uncertainty about the future composition of the population and its precise needs gives rise to a need to plan for flexibility in facilities and open space, to enable them to respond and adapt as the particular requirements and lifestyle preferences of the population are ascertained, whether these be associated with life cycle stage, income, ethnicity or any other characteristic.”

- *Over time, the population will become more diverse. Increasing proportions of young adults and older people will be attracted to the area once Leppington Major Centre is established*
- *The proportion of the population who are young children and young adults will decline as the population ages and the proportion of older children with older parents grows*
- *The proportion of the population aged 55+ years will also increase considerably as the area matures*
- *Owner occupiers are likely to provide a stable group that will age in place through the life cycle stages, while tenant households will experience greater turnover, thereby maintaining a similar age profile as in the initial stages*

Social issues associated with the rapid rate of urban development within the area include the following:

- There is a shortage of local employment opportunities and many residents spend considerable time commuting to work outside the region. Time spent commuting can restrict time available for recreation and family life and for involvement in community life, pointing to a need for facilities and activities that are locally based.
- Newcomers separated from established support networks may experience isolation and dislocation, pointing to a need to foster social support networks and services.
- Create opportunities for different housing types so there is social diversity and opportunities for extended family members to live close to young families to provide support.
- The relatively high cost of new housing creates financial stress for many households, pointing to a need for social and recreational opportunities that are affordable.
- There is a need for strategies to promote the integration of new and existing populations and communities, to foster community cohesion and identity and help ensure that the change process does not strain social harmony.

The Vision workshop also revealed several key findings about the people of Leppington Major Centre:

- The community is ageing
- The family unit is the predominant household type in Liverpool and Camden with many young children and extended families living together
- Not all households are low income
- There are little activities or entertainment opportunities for youth, there are few things for them in the public domain
- The area is culturally diverse with a large Cantonese speaking community
- There are opportunities to create a variety of housing types to encourage social diversity and opportunities for extended family

members to live close to young families to provide support

- The community generally has a lack of free time due to the impact of long commute times, weekend activities are important

Key Findings - Place

Leppington and Austral currently consist of market gardens, many of which were started by migrants and their families. The fertile soil on the edge of Sydney has provided the opportunity for small gardens to provide vegetables and poultry for the city population.

The existing rural landscape character will undergo a transformation as the town centre is developed. Heritage interpretation strategies, public art and the retention of key views and vistas would act to translate the inherent sense of place of Leppington.

The change of use from agriculture to town centre also provides opportunities for the stories of the land to be kept alive through the activities accommodated in the public domain such as farmers markets, community gardens, the incorporation of productive plant species, vendor trading out on the street and the focus on the Main Street, and the landscape strategy for parks (eg. incorporation of productive plant species and community gardens).

Key place characteristics that should be reflected in the public domain:

- Market garden history
- Migrant culture and aspiration - beginnings to present
- Views and vistas to surrounding landscape high points and the riparian corridor
- WV Scott Memorial Park - plaque to be retained and interpretation provided around it
- The development of a community that welcomes all cultures, socioeconomic status and age by providing for everyone

The Vision Workshop identified the following key findings in regards to place:

- There are currently strong local identities in regards to place - particularly between Narellan and Camden
- Need to understand staging and a strategy that is realistically implemented - principles must be consistent and easily staged
- The railway station will be a key attractor and destination which will support a variety of additional uses and services
- The centre needs to be walkable and people focused in design - it should cater to the pedestrian experience
- Need a variety of activities and uses in order to achieve place activation

Place Making Principles

The following place making principles have been developed for Leppington Major Centre. They have led to the development of the desired future place character for Leppington Major Centre and its hierarchy of places held within its public domain.

These principles and desired future character have informed the public domain strategy plan for the Leppington Major Centre as the focal point of the South West Growth Centre.

Over-arching place making principles for the public realm at Leppington Major Centre:

- Creating a public domain that is comfortable and attractive to locals and visitors alike is key to creating a vibrant place with an authentic community that is culturally sensitive and economically sustainable
- Pedestrian comfort should be provided for by creating adequate shading, low heat retaining and low reflecting materials and a variety of seating that is flexible for a wide audience
- An invitation to all and a sense of welcome should be created in the public domain by providing comfortable, free seating (available at all times) and areas for picnics, free activities, room for people to gather informally along main pedestrian paths with the appropriate signage, wayfinding and interpretation
- Provide a variety of activities in the public domain that accommodate a diversity of cultures, ages and incomes
- Provide a connection with water that is coveted in an hot climate, respond to prevailing winds by creating cooler microclimates along pedestrian and cycle pathways
- The public realm should accommodate activities and programs that respond to the people's culture, traditions and aspirations, and the history of agricultural land use whilst welcoming visitors
- The public domain should be open to input and free expression by the community including events, free activities, invitations to stay, moveable seating, public art by local artists, with local input into ideas for future events and activities.

Vision

The Leppington Major Centre Public Domain Strategy will create a people scaled environment which reflects the role of Leppington as the Major Centre of the South West Growth Centre.

The public domain will act to draw the elements of the centre together acting as a destination for residents, workers, commuters and visitors.

Place Character Statement

Leppington Major Centre will be a place that welcomes all - it supports its people and accommodates diversity in its public domain.

Place Making Principles

Pedestrian
comfort and
preference

Welcomes
all

Variety of
activities and
events

Climate
responsive

Easy access and
functionality

Local culture
displayed



Streets

Introduction

Forming a spine to the Major Centre, Rickard Road is the major north-south connecting road from the arterial Bringelly Road. Rickard Road will function as a transit boulevard, providing a mix of transit options including walking, cycling, public transport and cars. It connects the Retail Core and Business Park to the broader catchment.

The layout of the Retail Core includes provision for walkable, pedestrian and cycle friendly streets including several through site links that provide greater pedestrian connectivity.

A Main Street has been established as the major north-south street connecting the rail station, bus interchange, civic centre and retail core. This street will complement Rickard Road and will provide a focus for local retail street trade and community activity.

Objectives

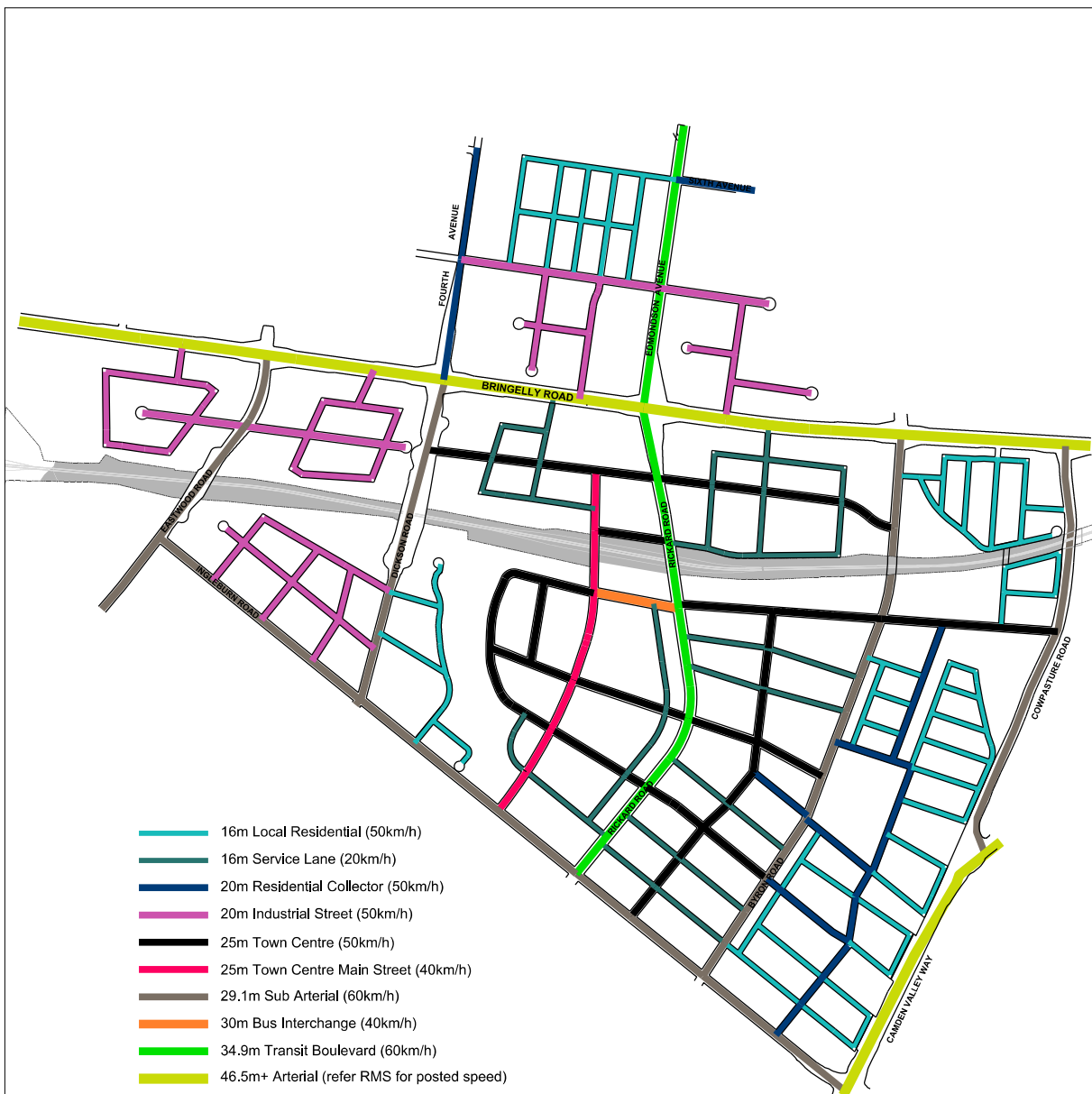
The design of Streets need to consider the multiple objectives that these serve including:

- focus for main street retail activity;
- civic address and identity;
- pleasant and safe pedestrian environment
- access to public transport;
- vehicular access, circulation and parking;
- cycle access, circulation and parking;
- location and amount of seating;
- quality of social spaces;
- safety and perceptions of safety;
- provision for people with sight and mobility impairments;
- cater for special public events, markets etc;
- visual amenity;
- drainage function and opportunities for WSUD;
- cultural significance - places for social interaction and public art; and
- maintenance requirements.

Street Types

- Rickard Road is a transit-boulevard, connecting the suburb to the centre via the main arterial Bringelly Road, and to Austral to the north and Leppington to the south.
- The Main Street connects the main attractors within the Major Centre - the retail core, mixed use areas, civic centre, commuter car parks, the bus interchange and rail station. It is a 'collector' road with public transport.

- Vehicle entrances in the retail core are provided from service lanes.
- Residential lots fronting sub arterials (Byron Road) have vehicular access from rear lanes.
- Bulky Goods and Industrial fronting arterials and sub-arterials have vehicular access from the internal local street network.



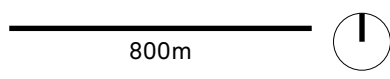
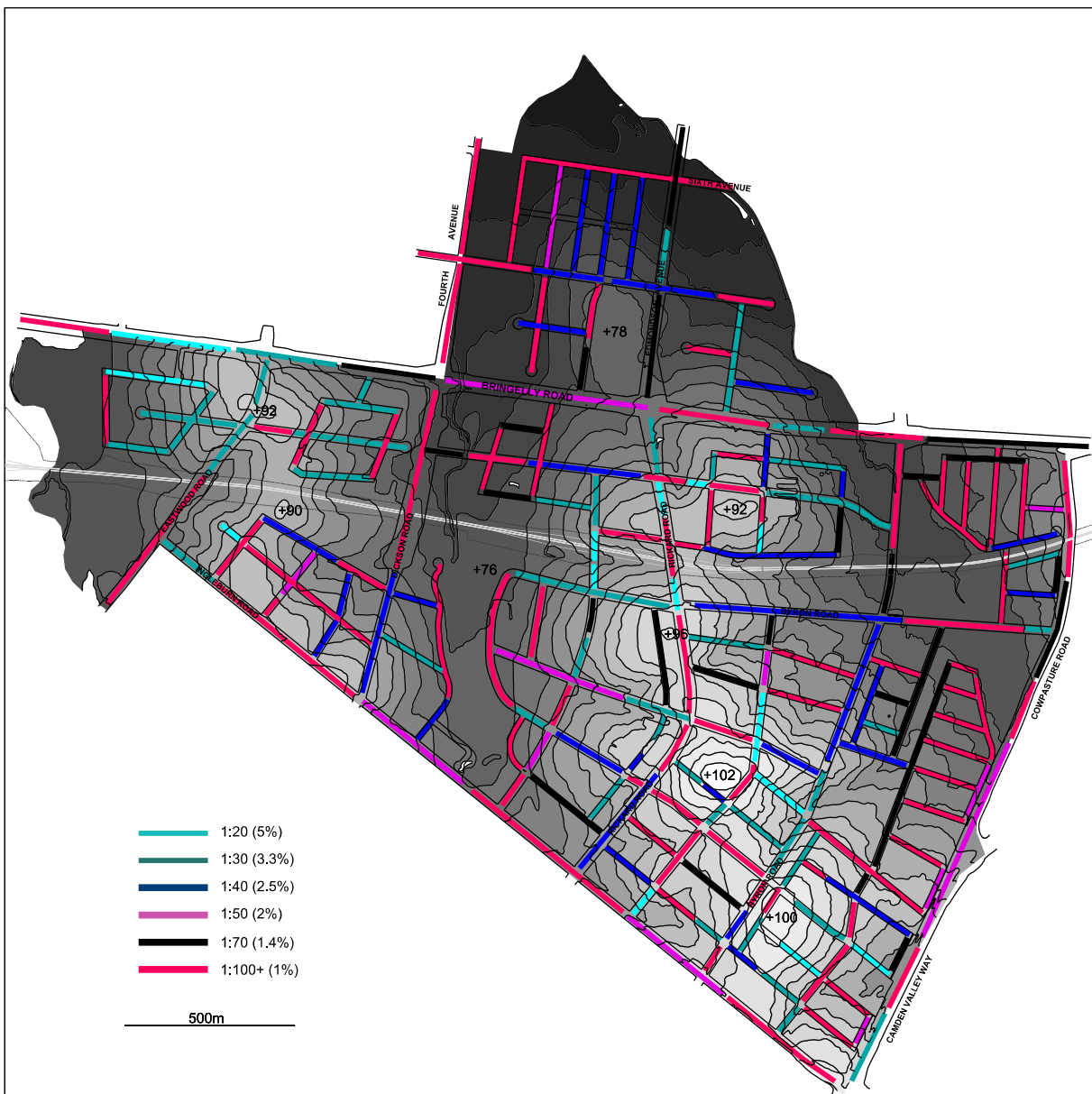
800m



Street Slopes

Characteristics (based on the existing topography):

- Most streets are flatter than 1:30, making it ideal for pedestrian accessibility
- A large proportion of streets are flatter than 1:100
- WSUD swales will work on streets within the range of 4%-1% longitudinal slopes (without the need for stepping). Most streets (including the majority of east-west oriented streets that drain towards the main creeks) are within this range.



Street Aspect

Characteristics:

- N-S and NE-SW streets benefit from solar protection in summer to eastern side of the street.
- E-W and NW-SE streets benefit from solar access in winter solstice to southern side of the street.

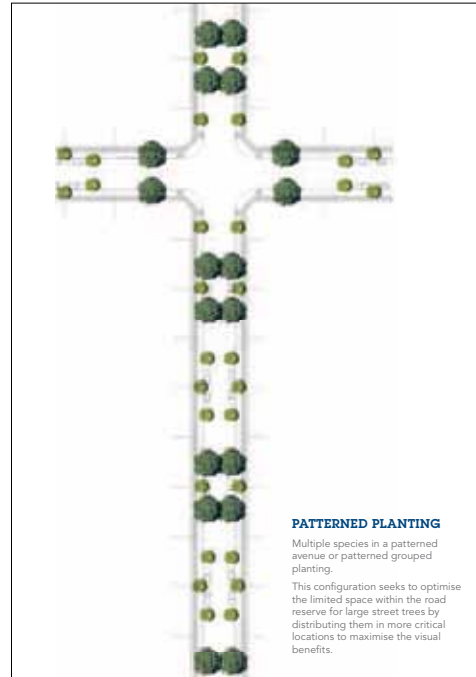


Street Trees

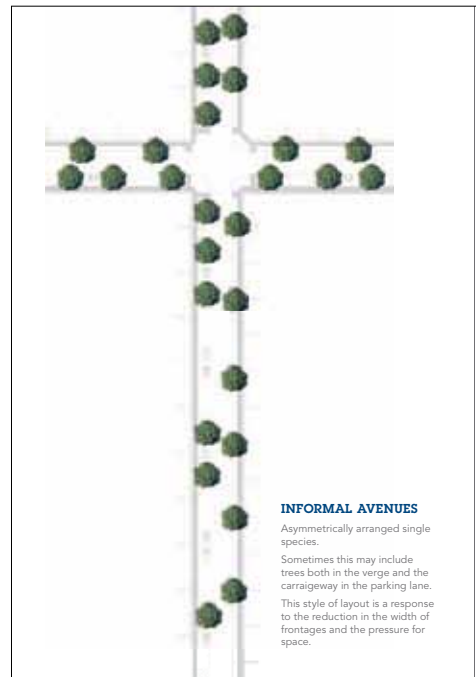
- Street trees provide essential shade in hot summer months. They cool urban environments and slow down run-off from rainfall.
- Use deciduous trees only where greater solar access in winter is required (eg. adjacent northern aspect of buildings and in urban plazas).
- Do not use deciduous trees for roadside planting (especially sub-arterial and arterial roads).
- Use evergreen trees where visual-buffers are required (eg. adjacent rail and sub-arterial / arterial roads).
- Street trees have a shorter lifespan than park trees, and their ongoing maintenance and replacement should be planned to ensure continued canopy cover.
- Street tree planting need not be symmetrical. Different species can be planted on opposite sides of the street to perform different microclimatic functions.
- Layout of street tree planting on town centre streets should be formal with regular spacing and coordinate with regular light-pole locations, street parking, awnings and outdoor seating.
- Layout of street tree planting on residential and bulky goods / industrial local streets should be informal to maximise opportunity for planting amongst multiple driveway entrances.
- Layout needs to coordinate required clearzones from street corners and setbacks from street kerbs.

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.
- Larger tree canopies will require wider spacing to match canopy width.



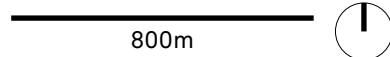
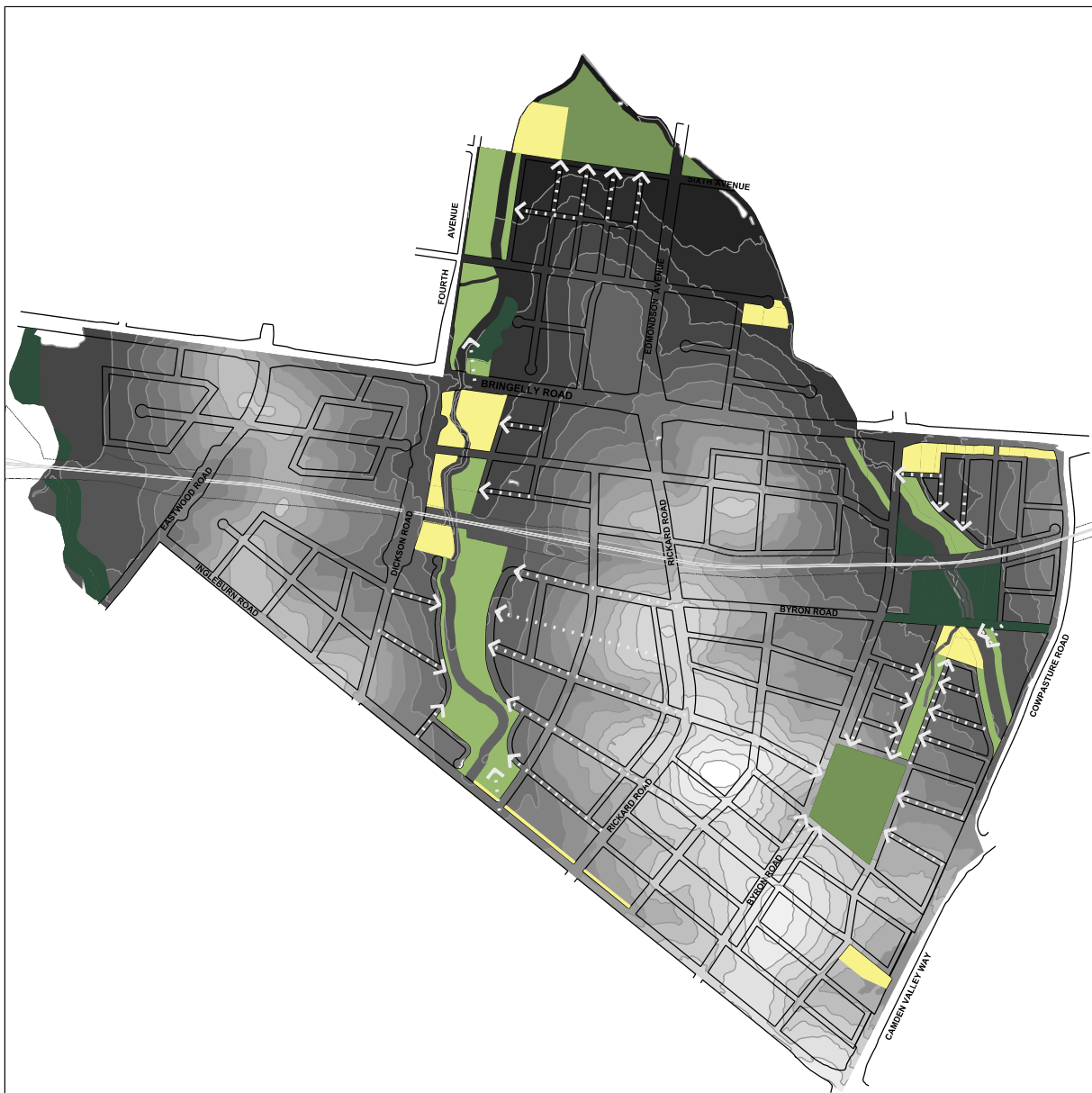
Town Centre streets



**Local Streets
(diagram source: Landcom)**

Views and Open Space

- Streets with views to open space areas are Town Centre east-west streets, and residential areas close to open space areas.
- Where possible maintain the views into the open space areas and avoid dense planting on these view corridors.



Pedestrian and Cycle Links

- All streets have footpaths on both sides.
- Through site links are provided for large blocks on key desire lines and to create finer grained pedestrian networks in core areas of the town centre.
- Off-road cycle lanes in the Town Centre are provided.
- Green links provide off-road cycle access along the southern side of the rail corridor linking the Scalabrini Creek Corridor to the Rail Station.
- Open Space areas provide important cross links (connecting east and west) and much longer north-south links that provide district-level connections.
- Continuation of the Scalabrini Creek shared path beneath the rail line is desired.
- For local residential streets with on road cycle lane between parking and traffic lane, 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 the DCP) will be funded by Council.



800m



Town Centre

Active Retail Frontage

- Focus active retail frontage on Main Street, Rickard Road, bus interchange and streets that front public open space. Active frontage for other town centre streets preferred, but these streets may also provide vehicle access to internal parking and loading areas.

Mid Block Crossing

- Provide mid-block crossing centred on Bus Interchange Plaza and the Town Plaza.
- The design of the crossings should accommodate either raised or flush treatments, and signals as required

Through site link

- Provide through-site link access to retail areas at mid-block crossing location. These are publicly accessible 24/7. Provide additional building setbacks at entrances.
- Pedestrian through-site links pavement to withstand vehicular loading for emergency vehicle access.

Water Sensitive Urban Design

- Opportunity for major east-west WSUD ‘green spine’ connecting Byron Road Park to Scalabrini Creek Corridor.

Lighting

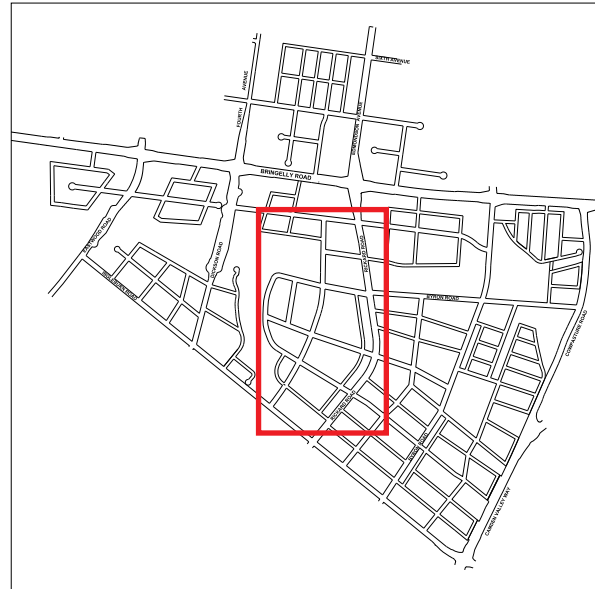
- In addition to street lighting, provide pedestrian lighting to plazas, mid-block crossings, marked and signalised pedestrian crossings, cycle lanes and through site links.
- Provide pedestrian lighting to all shared paths within open space areas.
- Provide feature lighting (eg. catenary) in the Town Plaza and Interchange Plaza.

Plaza Pavement

- All plazas pavement to withstand vehicle loading to cater for events.

Bicycle parking

- Provide capacity for bicycle hoop parking at all plaza locations and at 24m intervals on all town centre streets (eg. adjacent every 2nd street tree). Consider mounting hoops on light poles to reduce clutter.



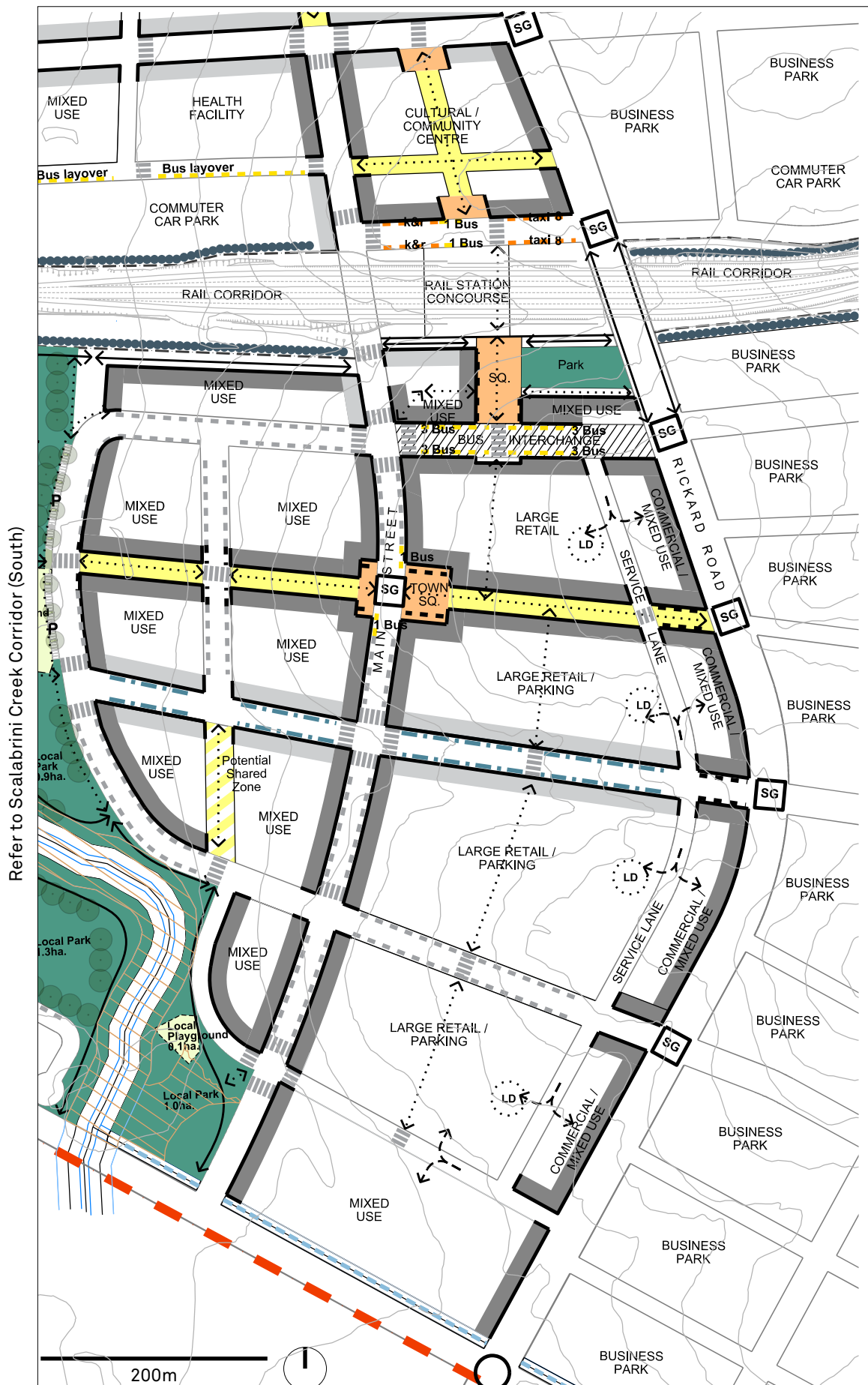
Key Plan

Public Art

- Provide opportunities for public art at plaza and through site link locations. Extend the public art concepts prepared for the SWRL for the Train Station area to key pedestrian routes to the Retail and Civic Centres via the Rail & Bus Interchange Plaza.

LEGEND

	SHARED PATH (3.0m)		REQUIRED SPECIALTY RETAIL / ACTIVE FRONTAGE
	PEDESTRIAN LINK		PREFERRED SPECIALTY RETAIL / ACTIVE FRONTAGE
	STREET PARKING		PLAZA
	OUTDOOR DINING		PEDESTRIAN THROUGH SITE LINK
	PEDESTRIAN CROSSING		PARK
	WSUD POTENTIAL LOCATION		SPORTS FIELD
	SIGNALISED INTERSECTION 4-WAY PEDESTRIAN CROSSING		PLAYGROUND
	VEHICULAR ACCESS		DRAINAGE
	LOADING DOCK		ENVIRONMENTAL CONSERVATION
	OFF-STREET PARKING		PRIVATE OPEN SPACE
	BUS PARKING BAYS (NO.)		RIPARIAN CORRIDOR (including existing native vegetation)
	KISS & RIDE		SCREEN PLANTING
	TAXI PARKING BAYS (NO.)		PARK SHADE TREE
	Bus Layover parking (facilities in adjacent commuter car park)		AMENITIES BUILDING
			EXISTING CONTOURS



Town Centre indicative Plan

Town Centre - wayfinding strategy

Pedestrian Wayfinding

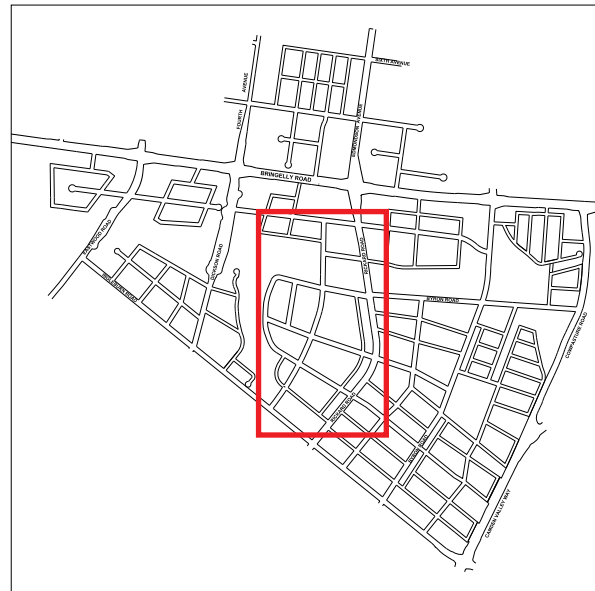
- Provide pedestrian wayfinding directional signage and maps at key entry locations within the Town Centre and Civic Precinct, to and from the Train Station and Bus Interchange, and commuter car parks.
- Provide directional signage in Parklands along shared path locations at key decision points for change in direction.
- Locations need to be carefully coordinated with pedestrian desire lines, trees, light poles, furniture etc.

Vehicular Wayfinding

- Vehicular wayfinding is to consider key entry locations to the Town Centre and provide directions to off-street parking facilities and other key public facilities such as the Civic Centre and District Parkland Facilities.

Public Art

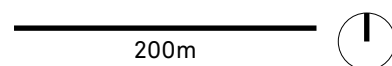
- Extend the public art concepts prepared for the SWRL for the Train Station area to key pedestrian routes to the Retail and Civic Centres via the Rail & Bus Interchange Plaza.
- New public art opportunities focused on key pedestrian routes, linking the Train Station and Bus Interchange, Civic and Retail Centres, Plazas and Streets through to the Scalabrini Creek Corridor and other public open space areas.

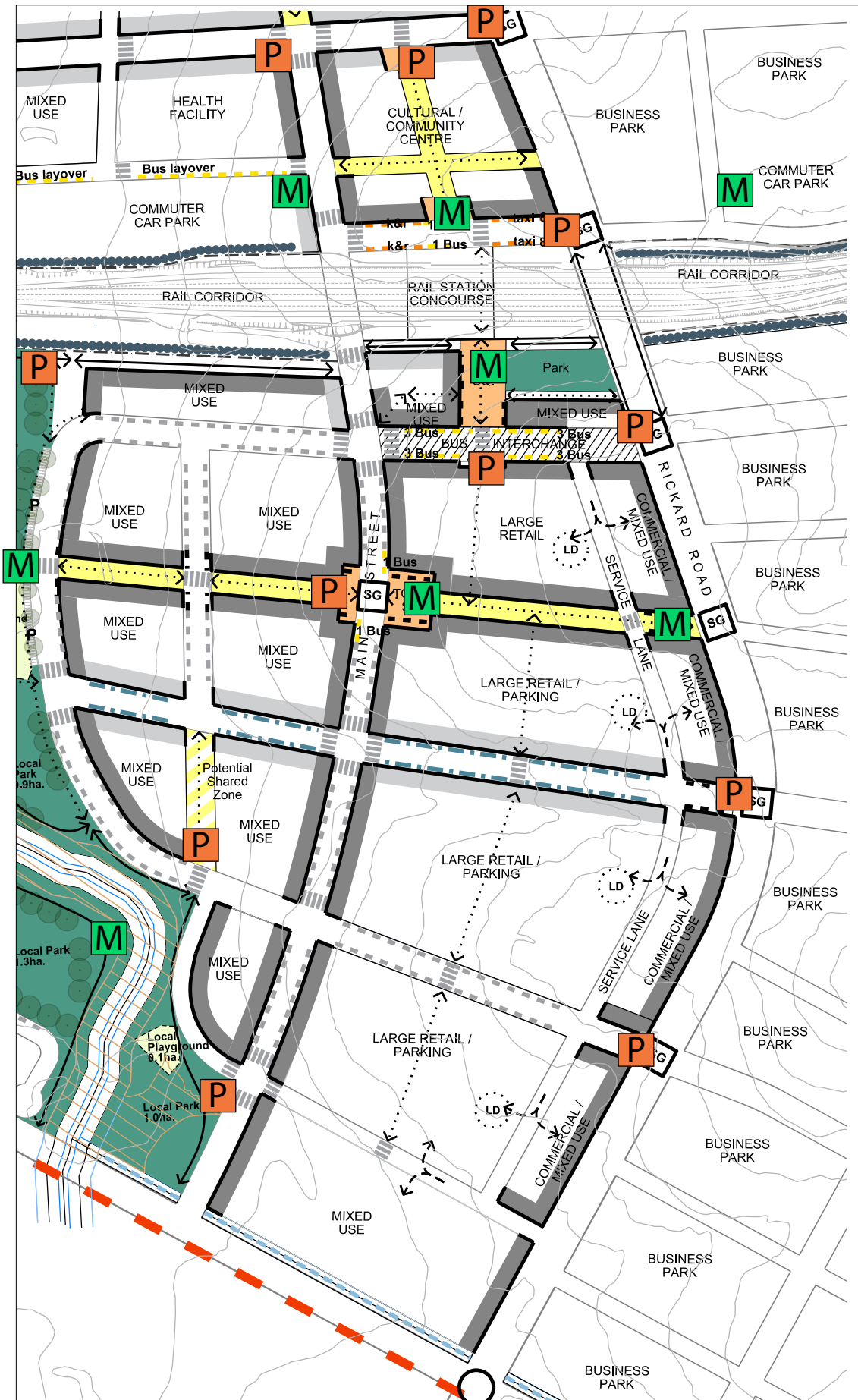


Key Plan

Legend

- | | |
|--|---|
| <p>P Pedestrian Wayfinding Directional Sign</p> | <p>M Pedestrian Wayfinding Directional Sign with Map</p> |
|--|---|





Town Centre indicative Plan - wayfind strategy

Town Centre - SWRL interim design

Main Street Rail Crossing

- The Interim design does not provide a road crossing over the rail line on the Main Street.

Mid Block Crossing

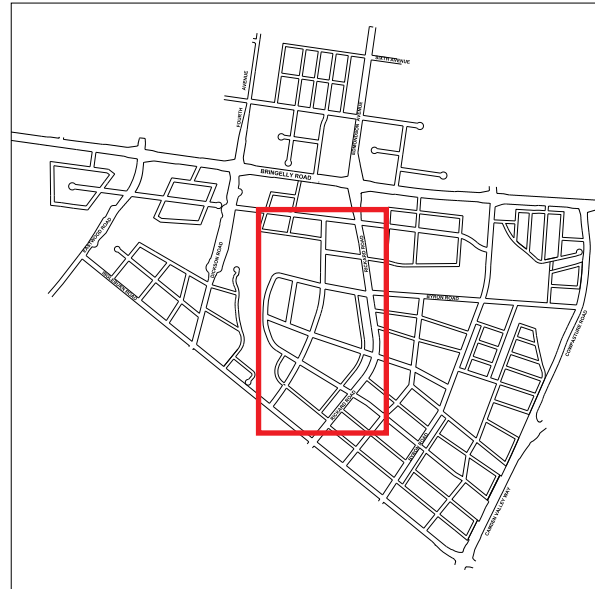
- Interim design for the mid block crossings provide pedestrian connections to the Retail and Civic areas.

Future Bus Interchange

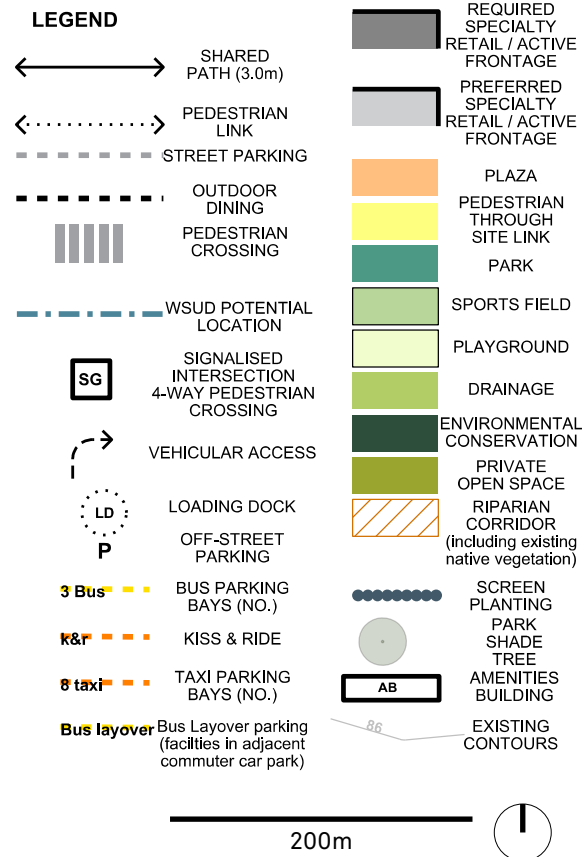
- The commuter car park and transport interchange currently under construction can remain as the first stages of retail and commercial development occur on adjoining land.
- The future bus interchange roadway can be constructed prior to decommissioning of the interim bus interchange and commuter car park.

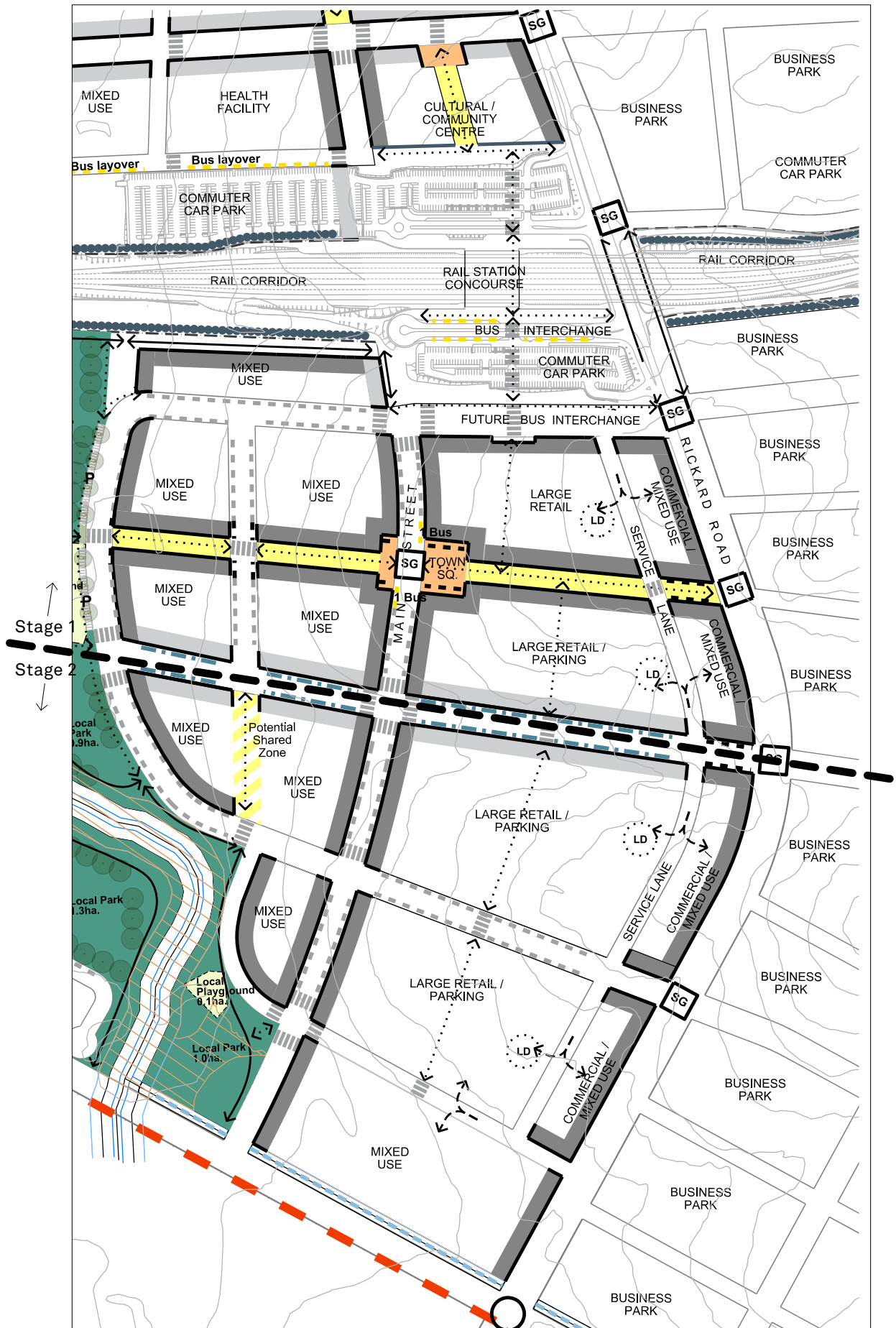
Cultural and Community Centre

- The Cultural and Community Centre design needs to be staged to allow for the interim commuter car park to occupy part of the site.



Key Plan





Town Centre indicative Plan - SWRL interim design

Main Street Principles and Function

Main Street Location

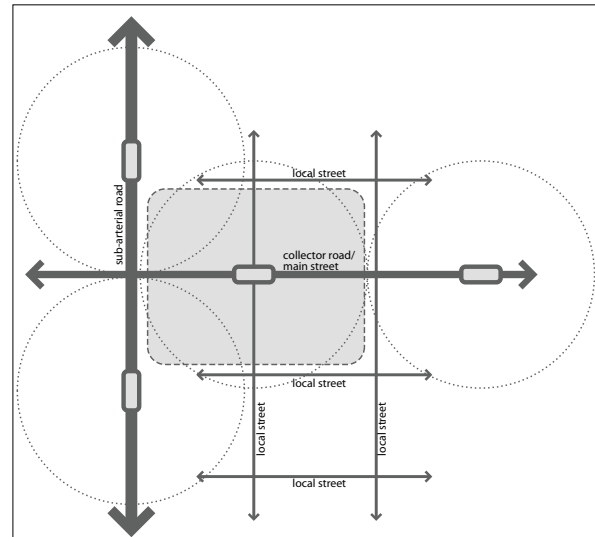
- Locate the Main Street as the primary structure for the retail centre
- One street off a sub-arterial, provides sufficient passing traffic to ensure viability
- On Collector Road with public transport (Buses)

Main Street Function and Use

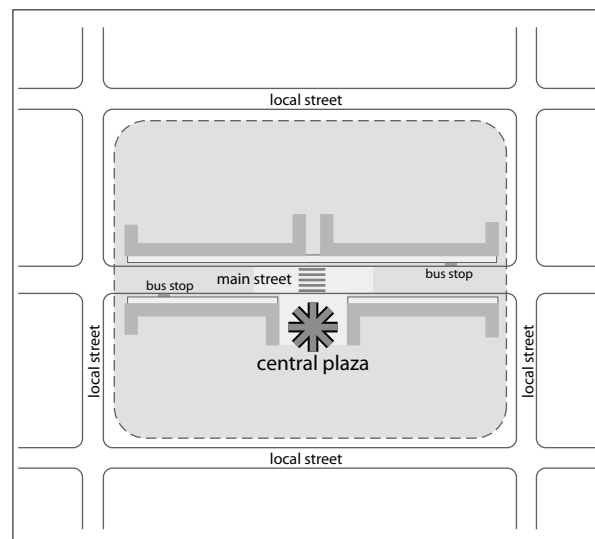
- Active retail frontage
- Good mid-block pedestrian crossings and at intersections. Pedestrian crossings will give pedestrian priority through marked or signalised crossings
- Bus stops located on Main Street
- Pleasant walking environment
- On-street parking
- Cycle lane to be designed to be safe, avoid conflict with pedestrians, buses and parking cars
- Locate Town Plaza on mid block location of Main Street to create destination / activity focus for the mid-block pedestrian connection

Main Street Characteristics

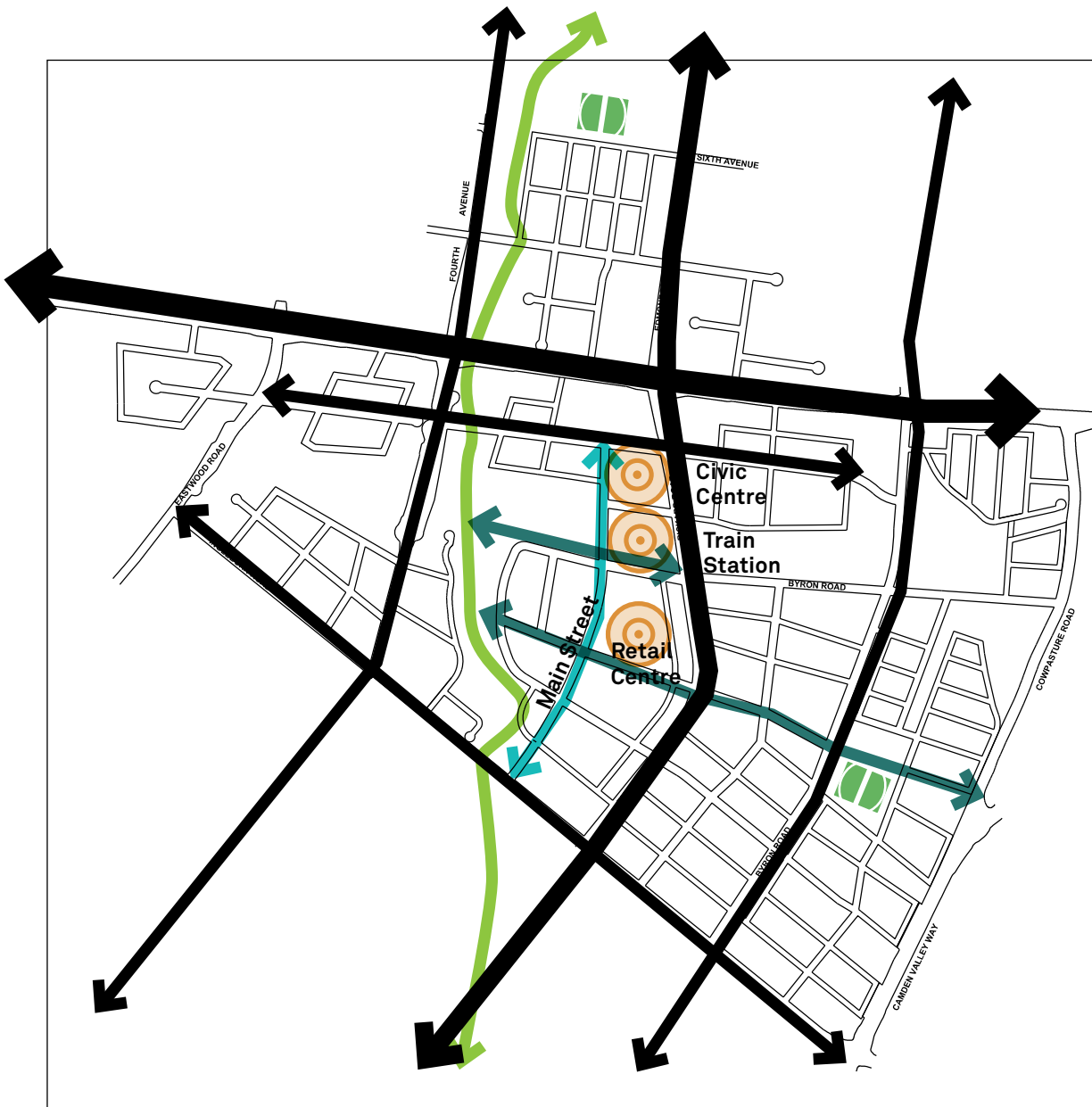
- Link social infrastructure facilities, transport, retail and recreation
- Sense of identity and place
- Focus for retail
- Good mix of car, cycle, public transport and pedestrian use
- Comfort and climate responsive
- Diverse experiences along the length of the main street
- The Main Street is a key defining element of the character of the Leppington Major Centre
- Buildings define the street edge (zero setbacks)



Main Street Location



Main Street Function



Main Street location in relation to the road network and connecting the civic centre, social infrastructure, train and bus interchange and the retail centre.

Main Street (25m)

Active Retail Frontage

- Focus active retail frontage on Main Street. Active frontage for other town centre streets preferred, but these streets may also provide vehicle access to internal parking and loading areas.

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.

Outdoor Dining

- 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 wayfinding by people who are sight impaired.

Light poles and Banners

- Coordinate light pole locations with street trees, bus shelters and awnings.
- Ensure light pole design can accommodate a proprietary banner mounting system.

Mid Block Crossing

- 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.

Through site link

- Provide through-site link access to retail areas at the mid-block crossing location. Provide additional building setbacks at entrances.

Corner blisters

- Provide corner blisters at pedestrian crossings and the mid-block crossing.
- Provide low-level planting to the mid-block crossing.
- Use bollards if crossing is raised.

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

- Opportunity to feed tree pits with rain water from the road carriageway and downpipes from awnings and rooftops.

Driveway access & On-Street Parking

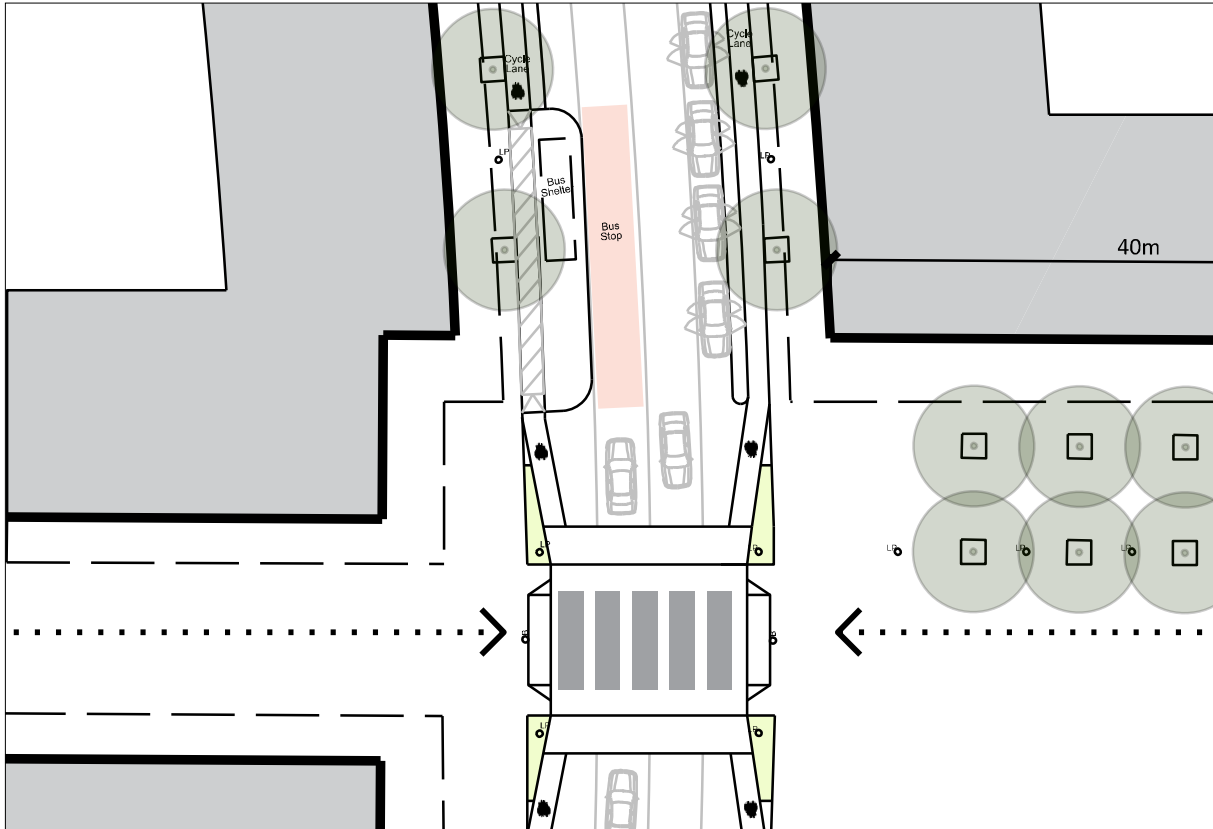
- No driveway access permitted on the main street.
- All off street parking and loading is to be accessed from other streets and service lanes.
- The on-street parking lane provides for a range of functions (eg. loading bays, bus stops and turning lanes at intersections if required)

Public Seating

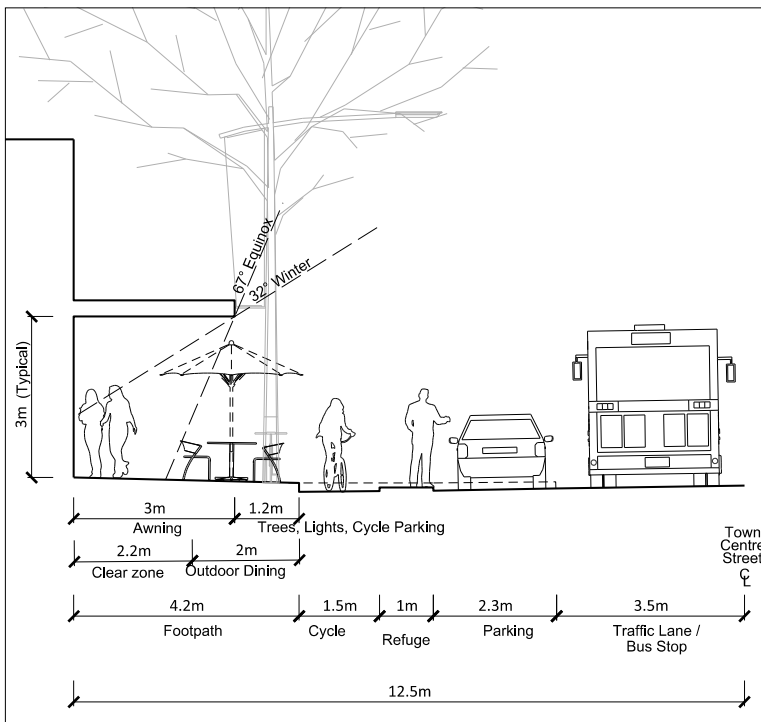
- Public (unpaid) seating provided near mid-block crossings, and typically 50m spacing therefrom.

Vehicle access to Plaza

- Provide event and emergency vehicle access to the Town Plaza via the mid block crossing using removable bollards.



Main Street Typical Plan

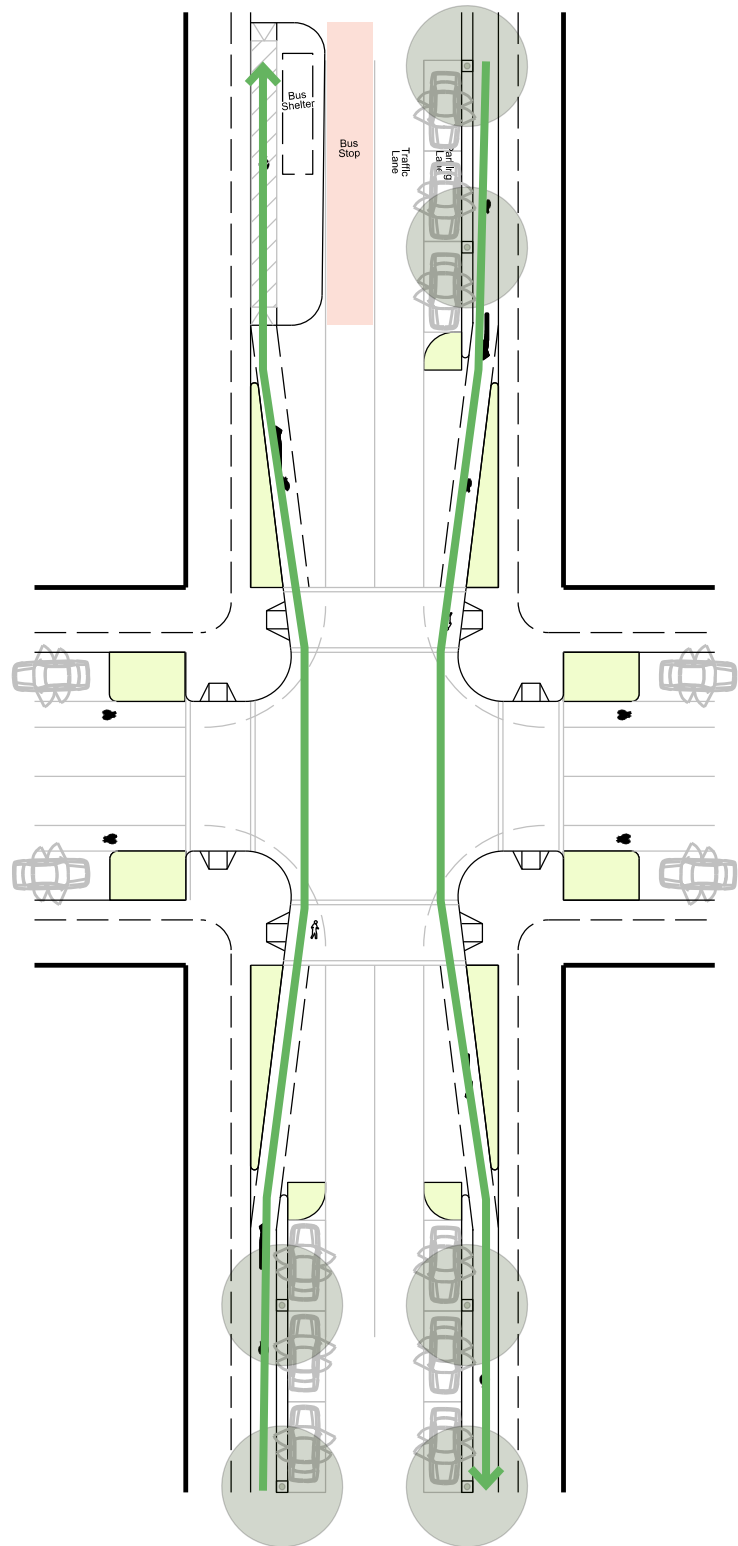


Main Street Typical Section

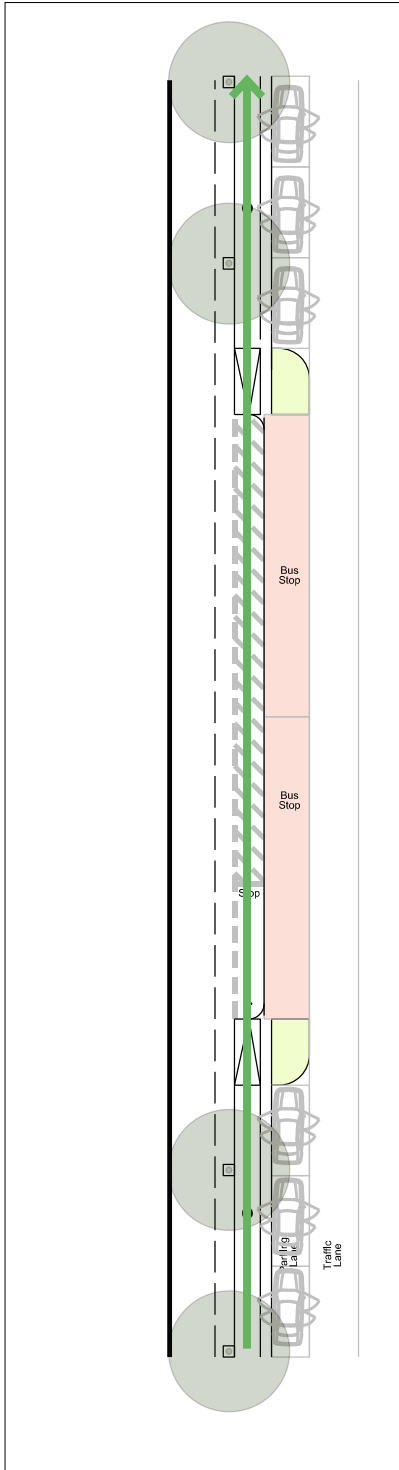


Example dedicated cycle lane (source: RMS)

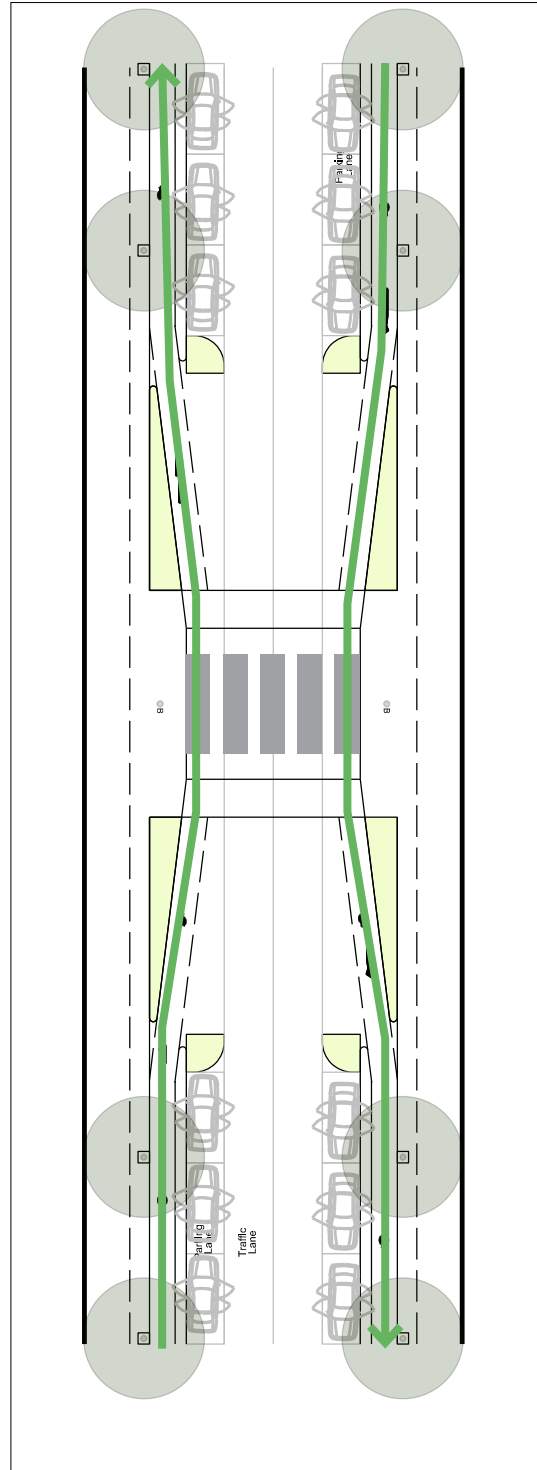
Town Centre Streets - Cycleways



Signalised / Non signalised intersection



Bus Stop



Pedestrian Crossing

Town Centre Streets (25m)

Active Retail Frontage

- Focus active retail frontage on Main Street. Active frontage for other town centre streets preferred, but these streets may also provide vehicle access to internal parking and loading areas.

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 and on-street car park locations.
- Provide minimum separation distance of 0.75m from edge of concrete structures to street tree.
- Provide Root guards.

Outdoor Dining

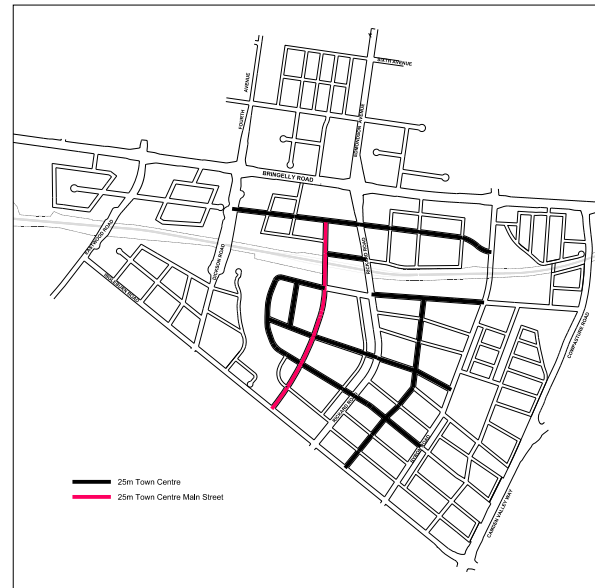
- Outdoor dining and other activities that activate the street are encouraged.
- Opportunity to provide outdoor dining in kerb blisters. Minimum clear pedestrian path required. Design to consider barrier treatments to provide separation from traffic lanes and a pleasant environment.
- Outdoor dining to be located clear of building frontage to allow wayfinding by people who are sight impaired.

Light poles and bus stop coordination

- Coordinate light pole locations with street trees and awnings.

Corner blisters

- Provide corner blisters at pedestrian crossings and mid-block crossings.
- Provide low-level planting to the mid-block crossing.
- Use bollards if crossing is raised.



Key Plan

Awnings and weather protection

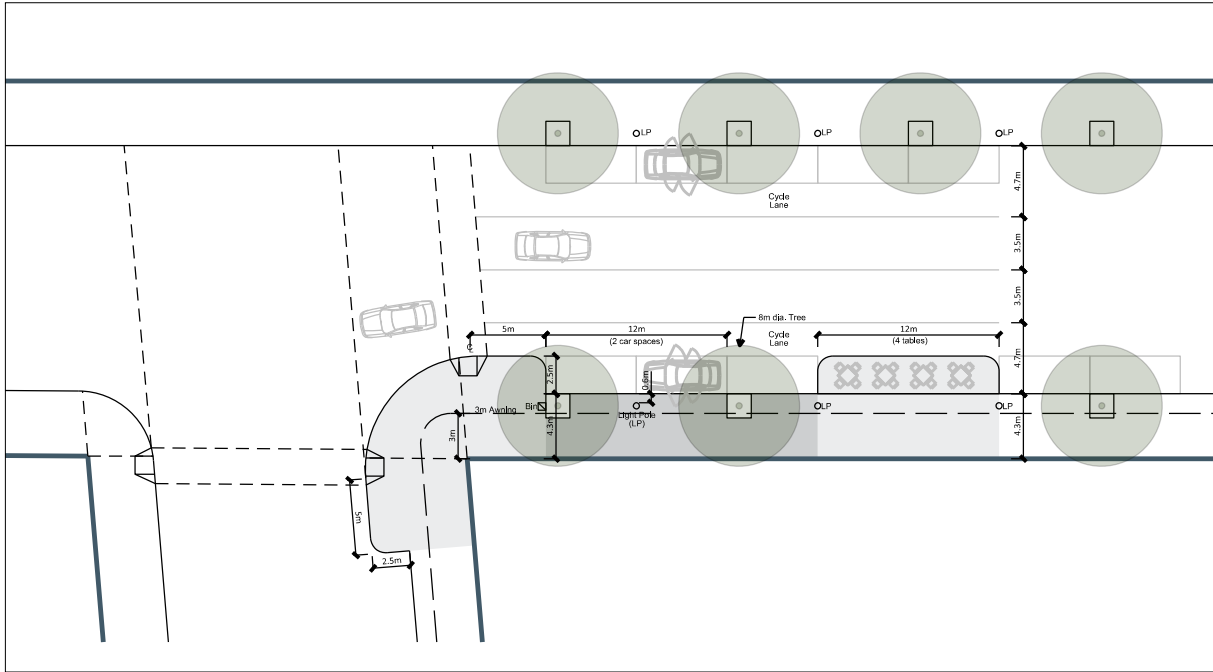
- Supplement weather protection for outdoor dining areas with umbrellas and retractable awnings.
- Continuous awnings preferred along the length of street, subject to whether active street frontage uses locate on these streets.

Water Sensitive Urban Design

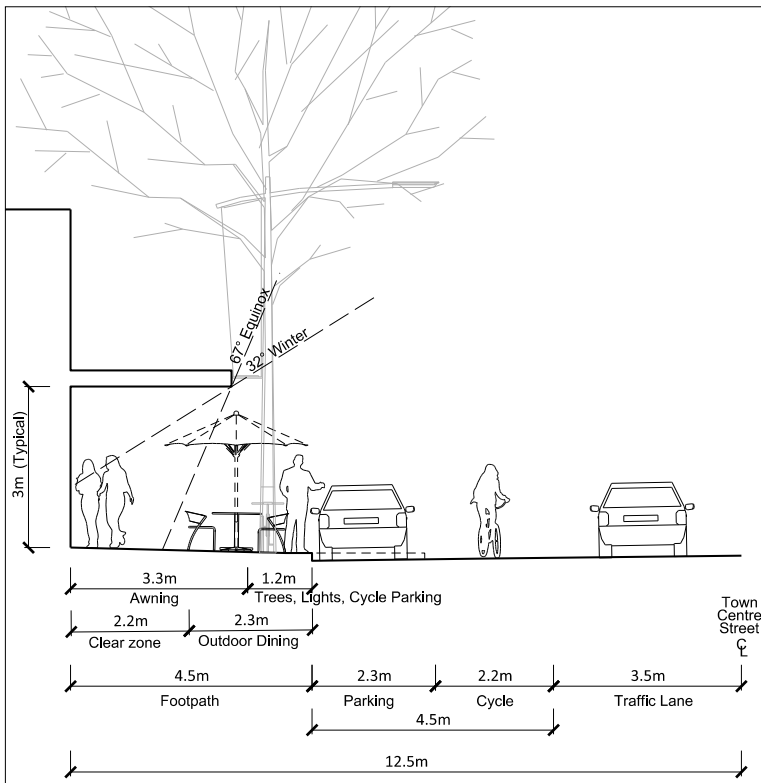
- Opportunity for WSUD in corner blisters and as a replacement for on street parking bays. Opportunity to feed tree pits with rain water from the road carriageway and downpipes from awnings and rooftops.



Example of outdoor dining



Town Centre Street Typical Plan



Town Centre Street typical section

Rickard Road - Transit Boulevard (34.9m)

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 objectives being met.
- Provide frangible street trees in median, regular spaced and offset from footpath trees.
- Plant around base of street trees.

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 wayfinding by people who are sight impaired.

Light poles and bus stop coordination

- Coordinate light pole location with street trees, bus shelters and awnings.

Mid Block Crossing

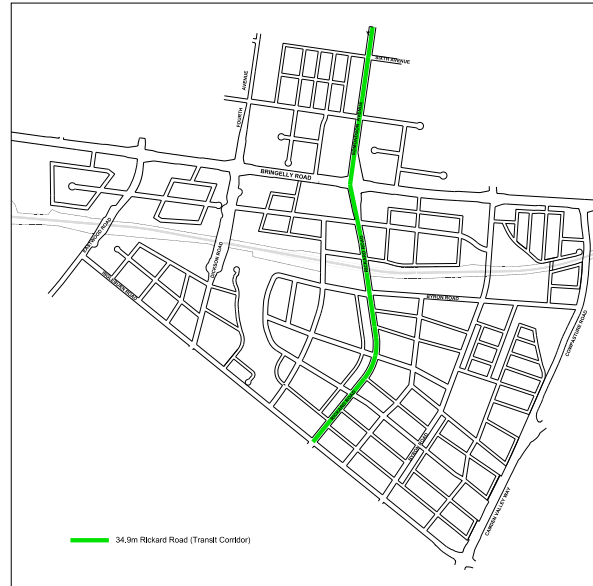
- Not permitted.

Through site link

- Provide through-site link access to retail areas
- Provide additional building setbacks at entrances.

Median Planting

- For medians less than 4m width, no planting is permitted and hard surfaces should be provided.
- No planting at intersections where turn lanes are required.



Key Plan

- Provision is to be made for maintenance vehicles to enter the median.

Awnings and weather protection

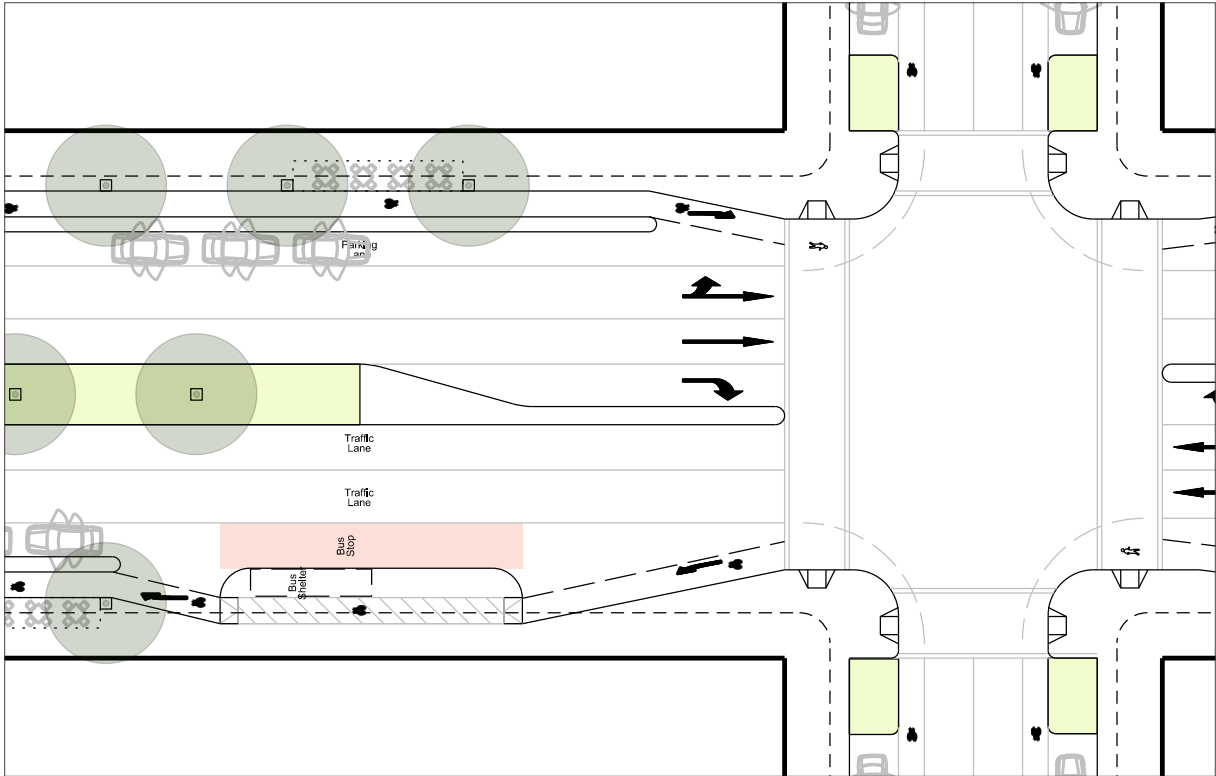
- Continuous awnings to be provided for all development.
- Supplement weather protection for outdoor dining areas with umbrellas and retractable awnings.

Water Sensitive Urban Design

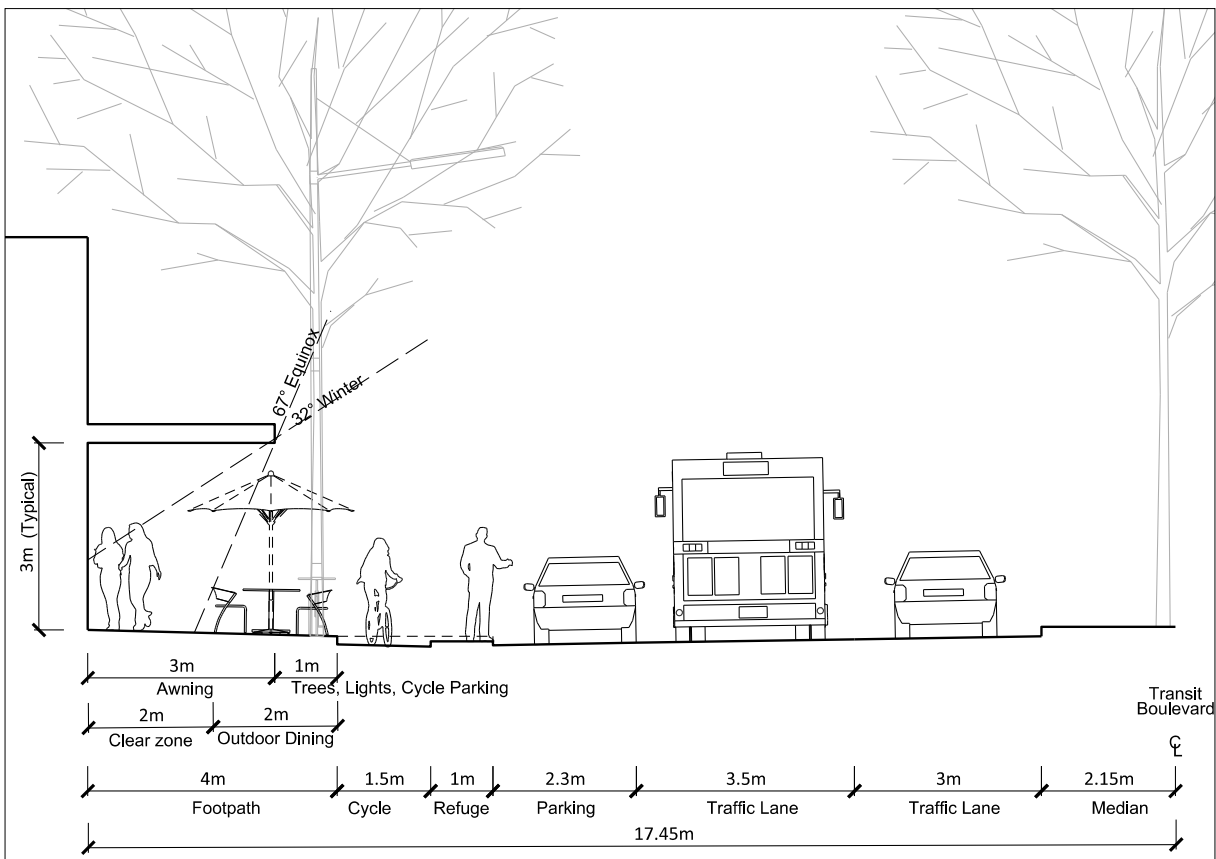
- Opportunity to feed tree pits with rain water from the road carriageway and downpipes from awnings and rooftops.



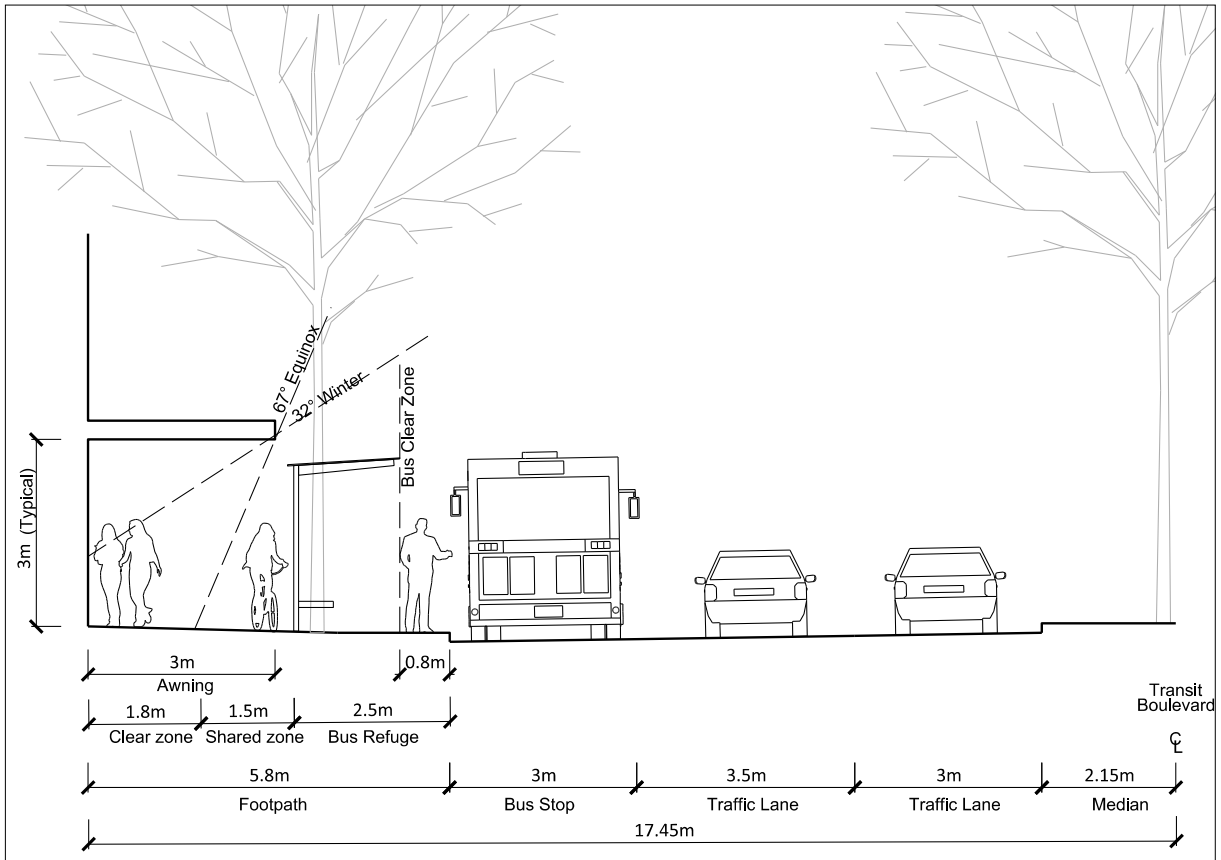
View of the future Rickard Road (source: CM+)



Rickard Road typical plan



Rickard Road typical section



Rickard Road typical section at Bus Stops

Bus Interchange (30m)

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.

Outdoor Dining

- No outdoor dining / on-street trading adjacent bus stops.
- For outdoor dining facing the street, 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.

Light poles and bus stop coordination

- Coordinate light pole location with street trees, bus shelters and awnings.

Mid Block Crossing

- 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

Through site link

- Provide through-site link access to retail areas at mid-block crossing location. Provide additional building setbacks at entrance.

Corner blisters

- Provide corner blisters at pedestrian crossings and mid-block crossing.
- Provide low-level planting and bollards to mid-block crossing.

Awnings and weather protection

- Provide continuous awnings / colonnades over footpath.
- Provide separate bus shelters for weather protection



Key Plan

- 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.

Bus Stop Bays and Bus Only Lanes

- 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.

Bus layover area

- Located adjacent commuter car park. Facilities in car park building.

Residential Collector (20m)

Quality of Materials

- Footpath pavement to be insitu concrete.
- Driveways to be consistent treatment within public domain.

Street Trees

- Irregular spacing dependant on driveway locations. Maximise opportunity for street tree planting.

Driveways

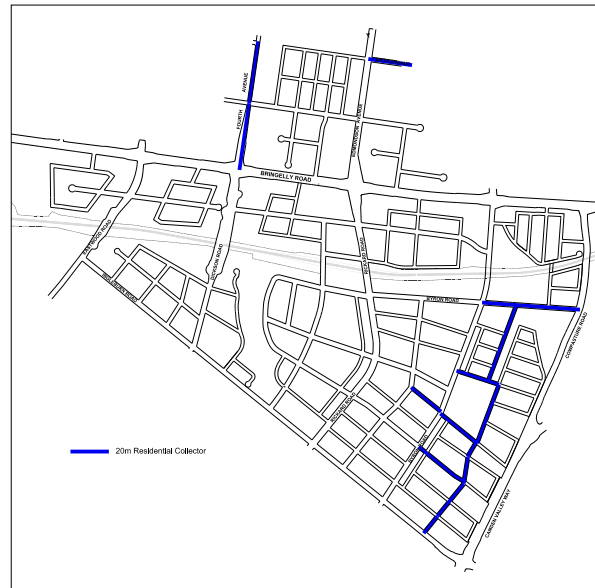
- Offset driveway locations on opposite sides of the street.

Light poles and bus stop coordination

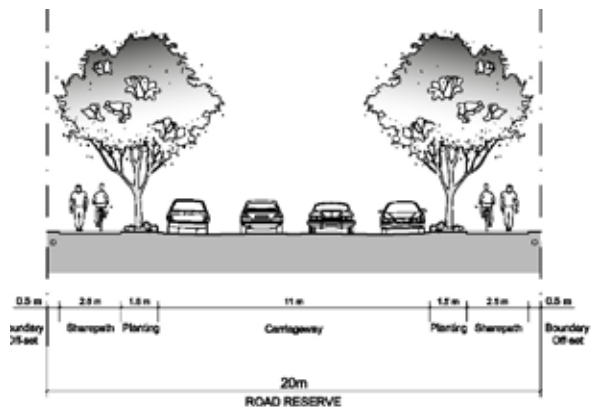
- Coordinate light pole and street tree locations.

Corner blisters

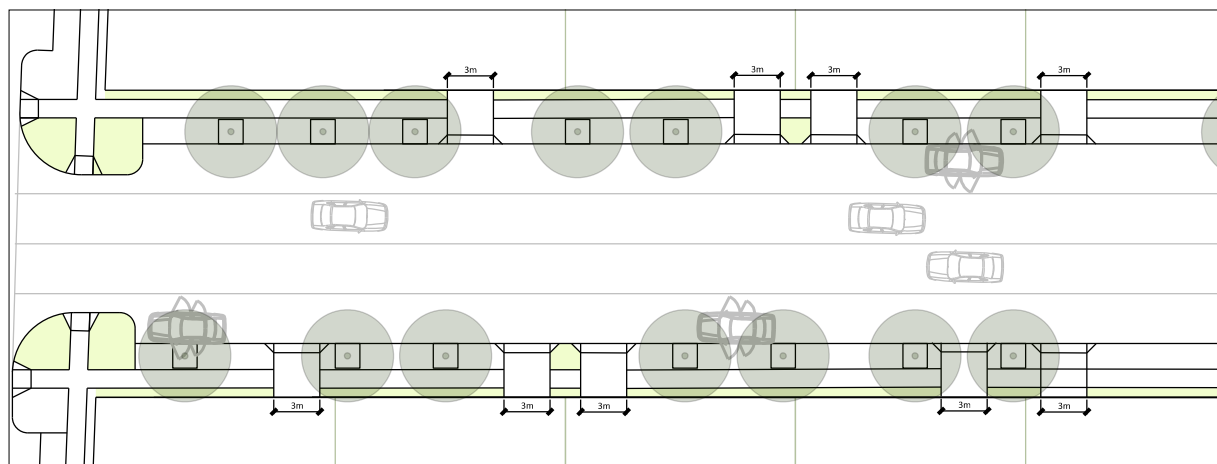
- Provide corner blisters at pedestrian crossings. Use additional planting at these locations.



Key Plan



Typical Section (source: cox)



Typical Plan

Bringelly Road (46.5m+)

Building setbacks

- Buildings setback 4m from road reserve.
- Primary entries and active frontages facing Bringelly road is encouraged.
- Integration of landscaping and WSUD in the front setback area, and space for large tree planting is encouraged.

Street Trees

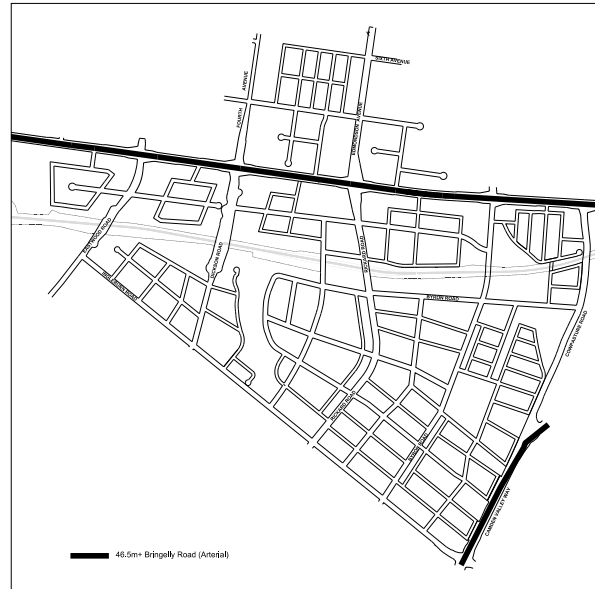
- Street tree spacing typically 12-15m, use irregular spacing to maximise opportunities for tree planting
- Use large endemic tree species that grow rapidly

Median Planting

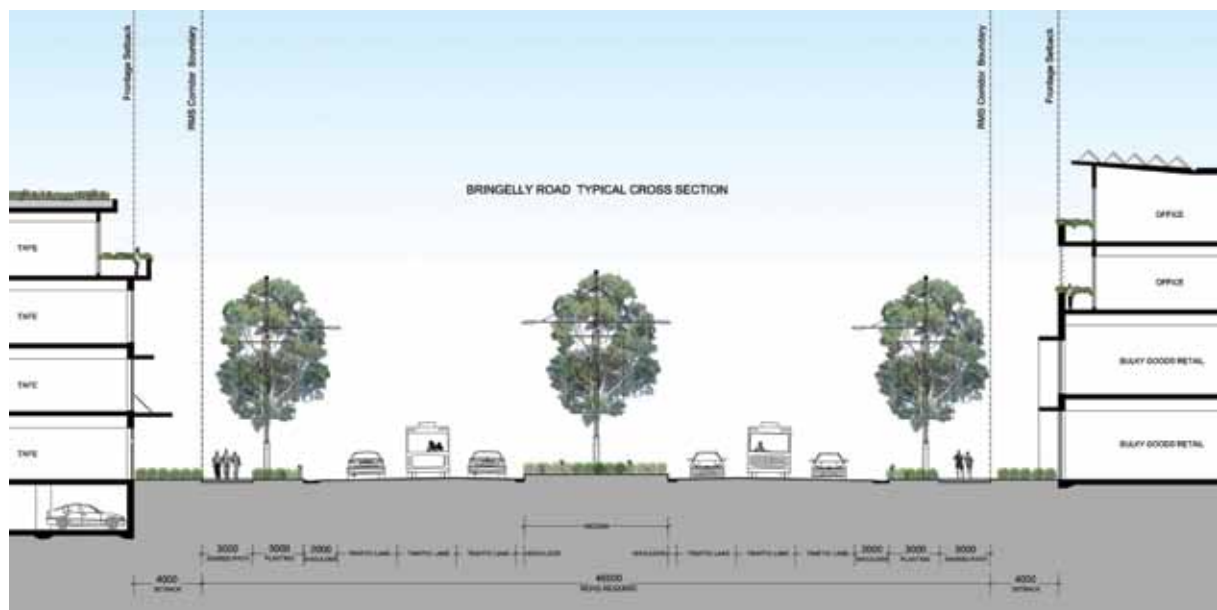
- For medians less than 4m width no planting is permitted and hard surfaces should be provided, or as required by the consent authority.
- No planting within 100m of intersections.

Light poles

- Space light poles equally spaced and coordinated with street tree planting.

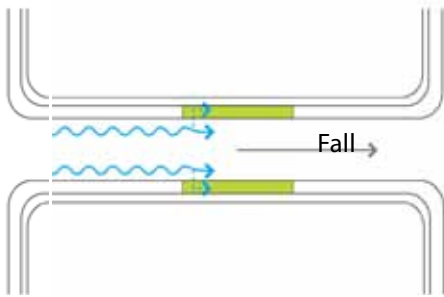


Key Plan

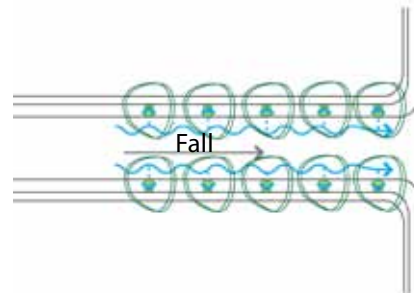


(source: CM+)

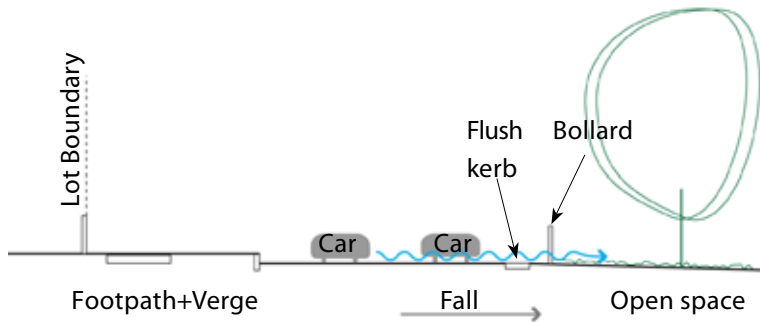
WSUD Street Integration Principles



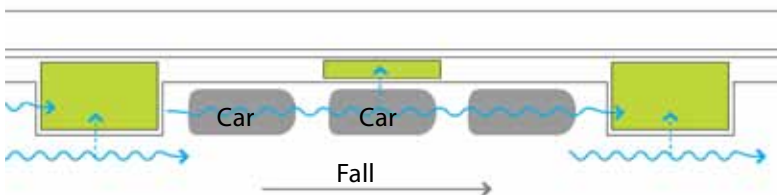
4 Planting beds at centre of streets to capture street runoff



5 Tree pits may be used to capture street runoff on steep grades



6 Castellated or flush kerbs installed at edge roads to open spaces to allows street runoff through to planting



7 Urban context - indented Parking Bays to allow street runoff to planting beds

Notes:

Planting beds adjacent car parking spaces should be a minimum of 1m from the kerb to enable pedestrian to access the passenger side of vehicles.

Provide appropriate kerb corner radius to ensure sufficient manoeuvre space for parking vehicles.



05

Parks

Introduction

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 Centre. 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 Local 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.

At the intersection of the Bonds Creek and the Scalabrini Creek Corridors, active recreation facilities are provided.

The Section 94 Contributions Plan takes precedence over this Public Domain Strategy.

Objectives

The design of Parks need to consider the multiple objectives that these serve including:

- 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.

Scalabrini Creek Corridor (South)

Pedestrian Links

- Provide 3.0m shared path on eastern side of Scalabrini Creek and connect to the Austral / Leppington Precincts to form edge to riparian corridor.
- Shared path acts as a maintenance edge to the creek rehabilitation area.
- Provide a pedestrian crossing and through site link to the 'Town Square'.

Car parking and vehicle access

- 90 degree parking adjoining street reserve near to Domain Park. Approximately 70 spaces are provided.
- Provide on-street parking within road reserve. Avoid conflicts with pedestrian crossings and WSUD.
- Preference is to use planting to prevent unauthorised vehicles from entering the open space areas, rather than bollards.

WSUD integration into the streetscape

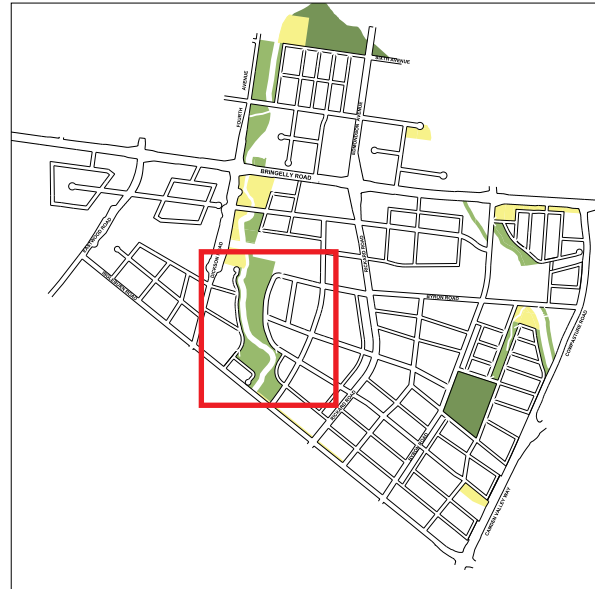
- Provide WSUD bays to replace on-street parking at key locations (eg. near intersections with east-west streets).

Tree Planting and Vegetation

- Provide shade tree planting generally to the north and west of pedestrian paths.
- Provide retention and rehabilitation of existing native vegetation adjoining riparian corridor.
- Provide greater setback for street trees into the open space corridor to enable larger root growing areas.

Facilities

- Provide District Playground.
- Provide Amenities Building with public toilets located close to the playground.
- Provide informal performance space in 'Domain' park.
- Provide event vehicle access and suitable turf reinforcement to enable performance stage setup.
- Provide 3-phase power outlets and water supply at performance stage location and possible market stall locations.
- Provide picnic facilities near to playgrounds.

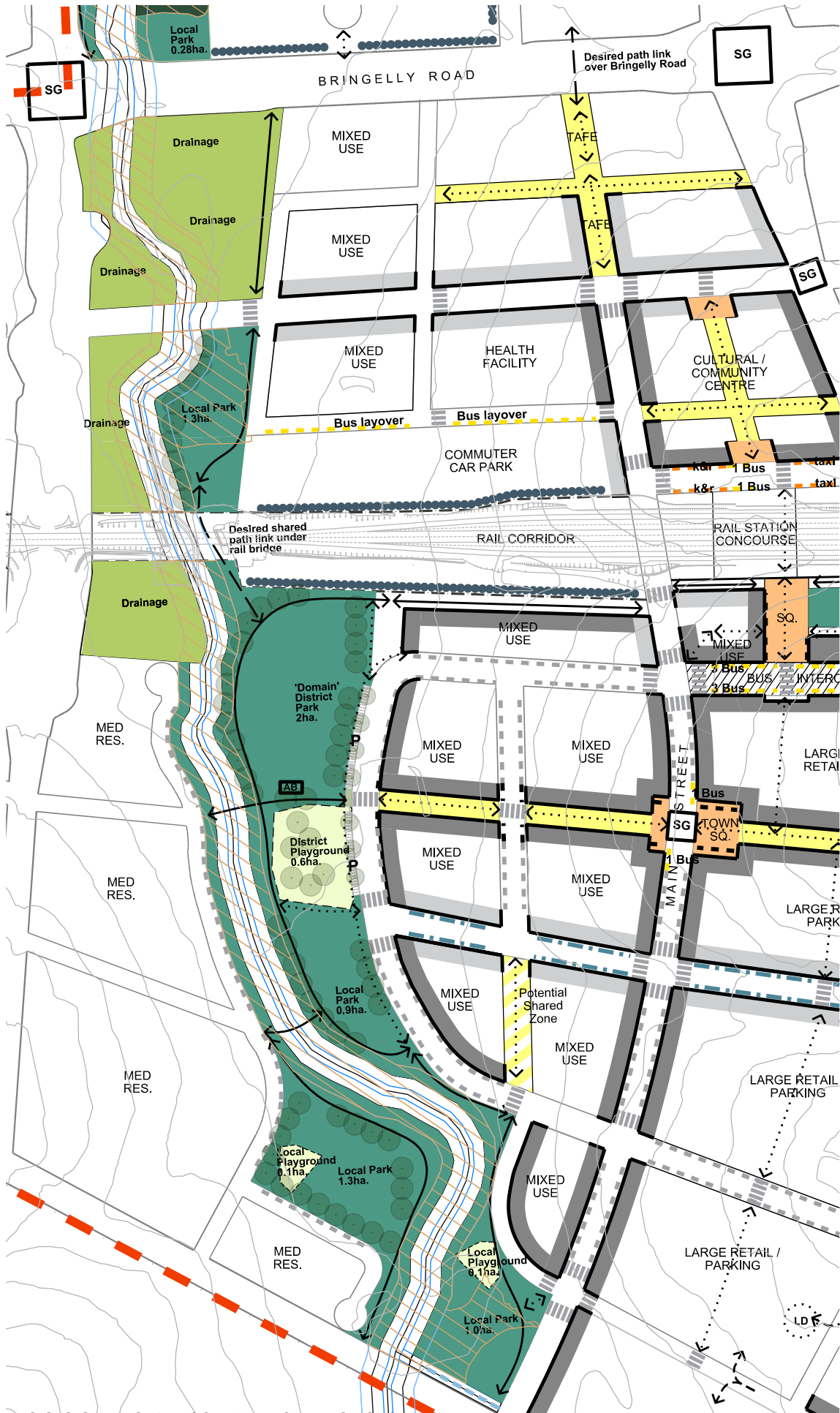


Key Plan

LEGEND

	SHARED PATH (3.0m)		REQUIRED SPECIALTY RETAIL / ACTIVE FRONTAGE
	PEDESTRIAN LINK		PREFERRED SPECIALTY RETAIL / ACTIVE FRONTAGE
	STREET PARKING		PLAZA
	OUTDOOR DINING		PEDESTRIAN THROUGH SITE LINK
	PEDESTRIAN CROSSING		PARK
	WSUD POTENTIAL LOCATION		SPORTS FIELD
	SIGNALISED INTERSECTION 4-WAY PEDESTRIAN CROSSING		PLAYGROUND
	VEHICULAR ACCESS		DRAINAGE
	LOADING DOCK		ENVIRONMENTAL CONSERVATION
	OFF-STREET PARKING		PRIVATE OPEN SPACE
	BUS PARKING BAYS (NO.)		RIPARIAN CORRIDOR (including existing native vegetation)
	KISS & RIDE		SCREEN PLANTING
	TAXI PARKING BAYS (NO.)		PARK SHADE TREE
	Bus Layover parking (facilities in adjacent commuter car park)		AMENITIES BUILDING
			EXISTING CONTOURS

200m



Scalabrini Creek Corridor (South) Typical Plan

Case Study: Sydney Park Playground

Characteristics and Facilities

- Regional Playground adjoining other facilities and parking.
- Playground integrated into the landscape (planting and landform).
- Amenities building and cafe.
- Outdoor performance space.
- Large open grassed area with sculptural mounds for informal play and social spaces.
- Circular path around grass field used for walkers and recreational cyclists of all ages, and is good social meeting spot.
- Perimeter tree planting provides green backdrop.
- Mixture of open and well shaded areas, with mixture avenue planting and isolated feature tree planting.



Scalabrini South Park Size overlay (adapted from google earth)



Photos: Sophie Spinks

Scalabrini Creek Corridor (North)

Sports field provision

- 2 x rugby.
- 1 x cricket.

Sports field orientation

- North aspect, accommodate footprint, including amenities block, circuit path and shade tree planting. Integrate with design of drainage basin to the west.

Sports field earthworks

- Provide uniform, symmetrical embankments.

Sports field shared path

- Provide a 3m wide circuit path around the sports fields.

Pedestrian Links

- Provide 3.0m shared path on western side of Scalabrini Creek and connect to the Leppington Major Centre via signalised intersection at Bringelly Road, and continuing north to Bonds Creek and the Austral Precinct.
- Provide 1.5m wide footpaths on eastern side of Scalabrini Creek.
- Provide 3.0m shared path linking Edmondson Ave. / Sixth Ave. intersection to sports field and connect to the Austral / Leppington Precinct.

Off street car parking

- 90 degree parking adjoining street reserve near to sports field. Approximately 70 spaces are provided.

On street car parking

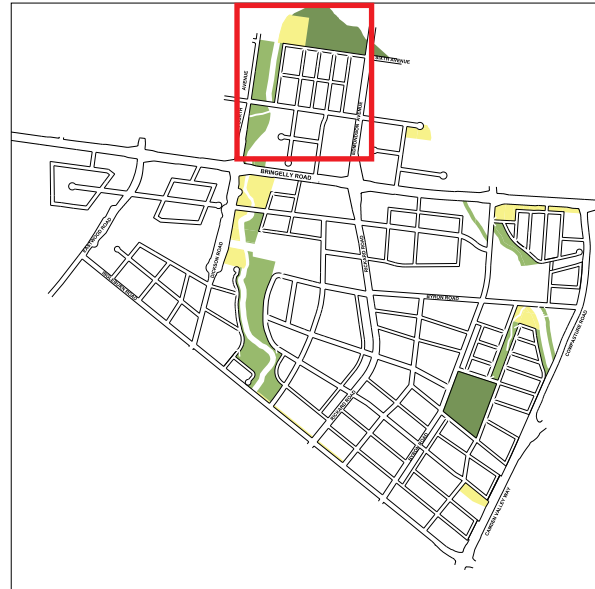
- Provide on-street parking within road reserve. Avoid conflicts with pedestrian crossings and WSUD.

WSUD integration into the streetscape

- Provide WSUD bays to replace on-street parking at key locations.

Shade Tree Planting

- Provide shade tree planting generally to the north and west of pedestrian paths.
- Provide greater setback for street trees into the open space corridor to enable larger root growing areas.

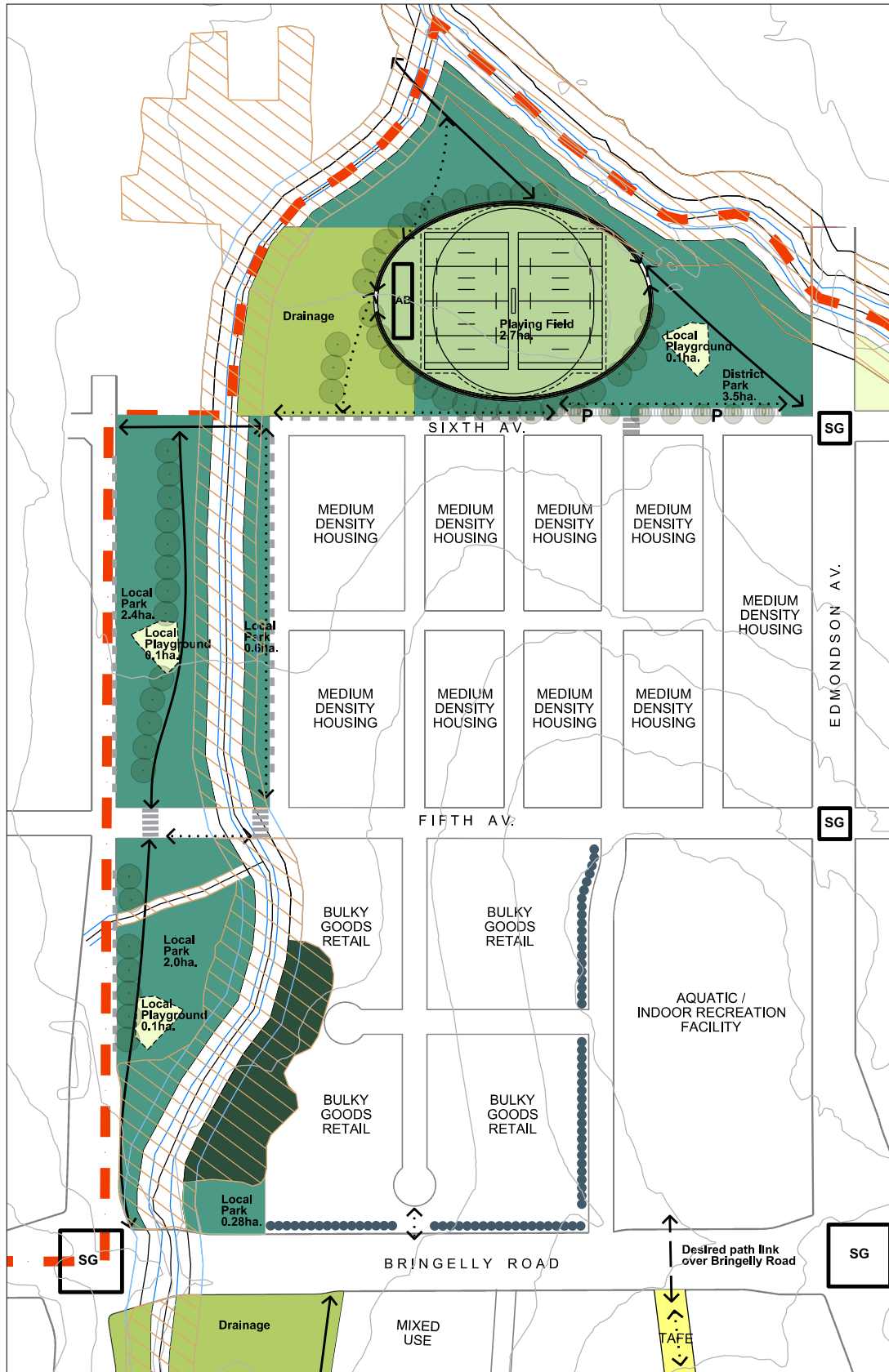


Key Plan

LEGEND

	SHARED PATH (3.0m)		REQUIRED SPECIALTY RETAIL / ACTIVE FRONTAGE
	PEDESTRIAN LINK		PREFERRED SPECIALTY RETAIL / ACTIVE FRONTAGE
	STREET PARKING		PLAZA
	OUTDOOR DINING		PEDESTRIAN THROUGH SITE LINK
	PEDESTRIAN CROSSING		PARK
	WSUD POTENTIAL LOCATION		SPORTS FIELD
	SIGNALISED INTERSECTION 4-WAY PEDESTRIAN CROSSING		PLAYGROUND
	VEHICULAR ACCESS		DRAINAGE
	LOADING DOCK		ENVIRONMENTAL CONSERVATION
	OFF-STREET PARKING		PRIVATE OPEN SPACE
	BUS PARKING BAYS (NO.)		RIPARIAN CORRIDOR (including existing native vegetation)
	KISS & RIDE		SCREEN PLANTING
	TAXI PARKING BAYS (NO.)		PARK SHADE TREE
	Bus Layover parking (facilities in adjacent commuter car park)		AMENITIES BUILDING
			EXISTING CONTOURS

200m



Scalabrini Creek Corridor (North) Typical Plan

Bonds Creek Corridor

Pedestrian Links

- Provide 3.0m shared path on both sides of Bond Creek Corridor. Pathway to act as maintenance edge within land zoned public recreation.

Off street car parking

- None provided.

On street car parking

- Provide on-street parking within road reserve. Avoid conflicts with pedestrian crossings and WSUD.

WSUD integration into the streetscape

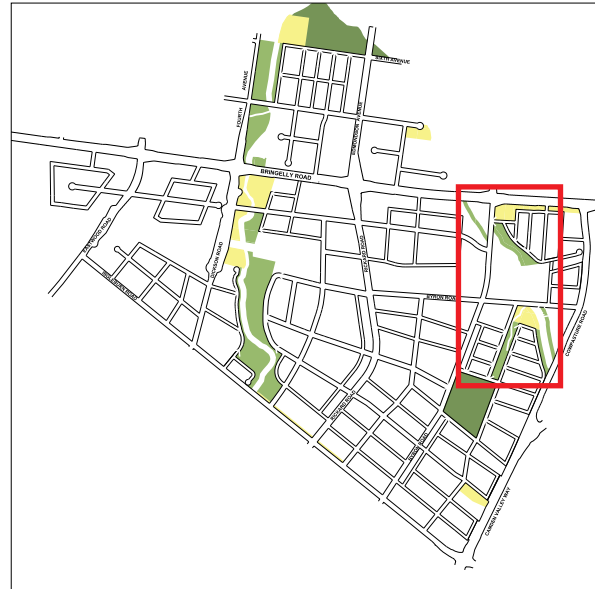
- Provide WSUD bays to replace on-street parking at key locations.

Shade Tree Planting

- Provide shade tree planting generally to the north and west of pedestrian paths.
- Provide greater setback for street trees into the open space corridor to enable larger root growing areas.

Facilities

- Local Parks
- Furniture
- Local playgrounds

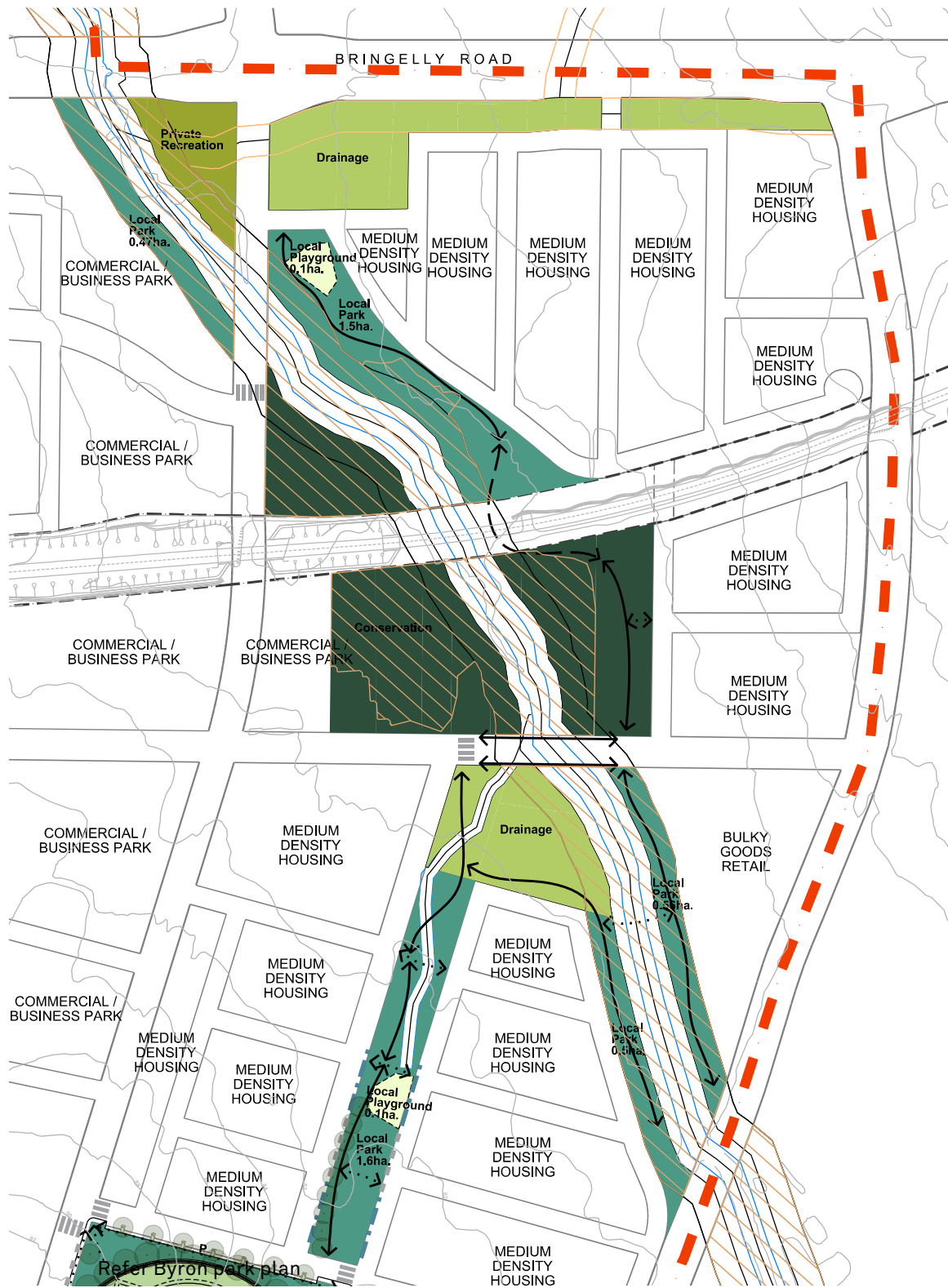


Key Plan

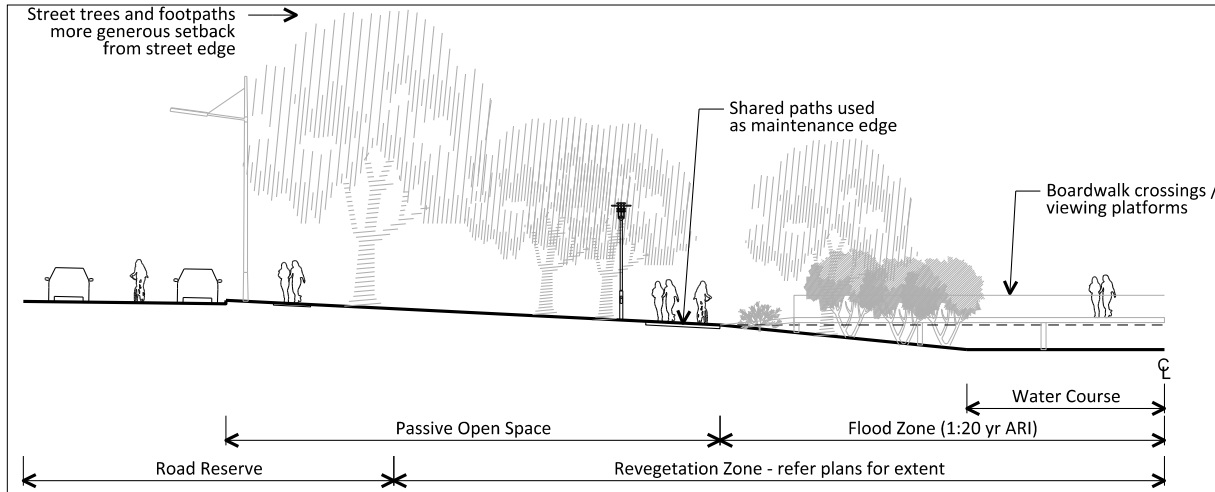
LEGEND

	SHARED PATH (3.0m)		REQUIRED SPECIALTY RETAIL / ACTIVE FRONTAGE
	PEDESTRIAN LINK		PREFERRED SPECIALTY RETAIL / ACTIVE FRONTAGE
	STREET PARKING		PLAZA
	OUTDOOR DINING		PEDESTRIAN THROUGH SITE LINK
	PEDESTRIAN CROSSING		PARK
	WSUD POTENTIAL LOCATION		SPORTS FIELD
	SIGNALISED INTERSECTION 4-WAY PEDESTRIAN CROSSING		PLAYGROUND
	VEHICULAR ACCESS		DRAINAGE
	LOADING DOCK		ENVIRONMENTAL CONSERVATION
	OFF-STREET PARKING		PRIVATE OPEN SPACE
	BUS PARKING BAYS (NO.)		RIPARIAN CORRIDOR (including existing native vegetation)
	KISS & RIDE		SCREEN PLANTING
	TAXI PARKING BAYS (NO.)		PARK SHADE TREE
	Bus Layover parking (facilities in adjacent commuter car park)		AMENITIES BUILDING
			EXISTING CONTOURS

200m



Bonds Creek Corridor (North) Typical Plan



Riparian Corridor treatment - Typical Section

Byron Road Park

Sports field orientation

- 30 degrees N-W to accommodate footprint, including amenities block, circuit path and shade tree planting.

Sports field earthworks

- Provide uniform, symmetrical embankments.

Sports field shared path

- Provide a 3m wide circuit path around the sports fields.

Pedestrian Links

- Provide 1.5m wide footpaths in street verge.
- Provide cross-link connecting E-W to pedestrian crossings.

Off street car parking

- 90 degree parking adjoining street reserve near to sports field. Approximately 135 spaces can be provided.

On street car parking

- Provide on-street parking within road reserve. Avoid conflicts with pedestrian crossings and WSUD.

WSUD integration into the streetscape

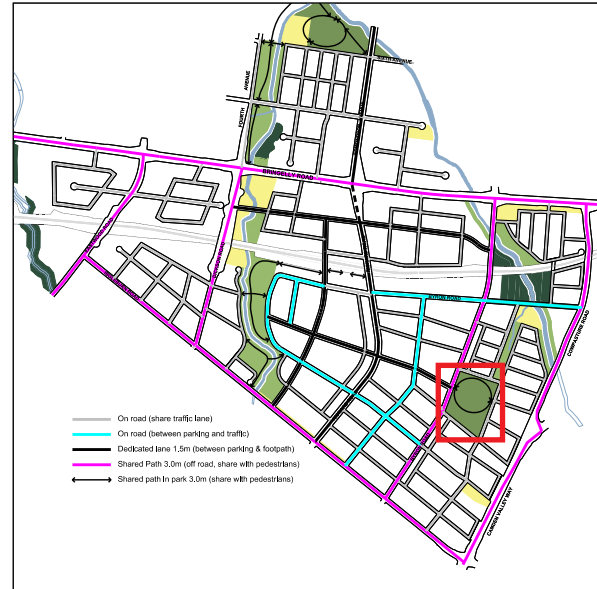
- Provide WSUD bays to replace on-street parking at key locations.

Shade Tree Planting

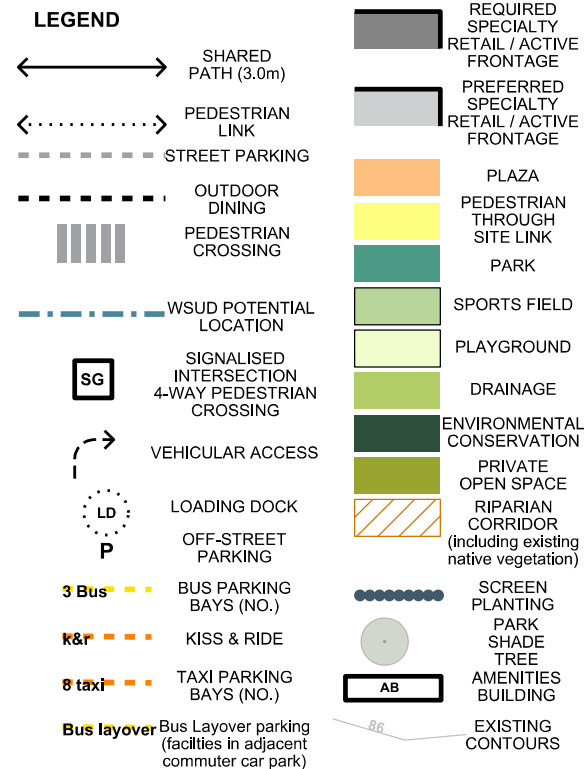
- Provide shade tree planting generally to the north and west of pedestrian paths and around perimeter of park, parking areas and playground.
- Provide greater setback for street trees into the open space area to enable larger root growing areas.

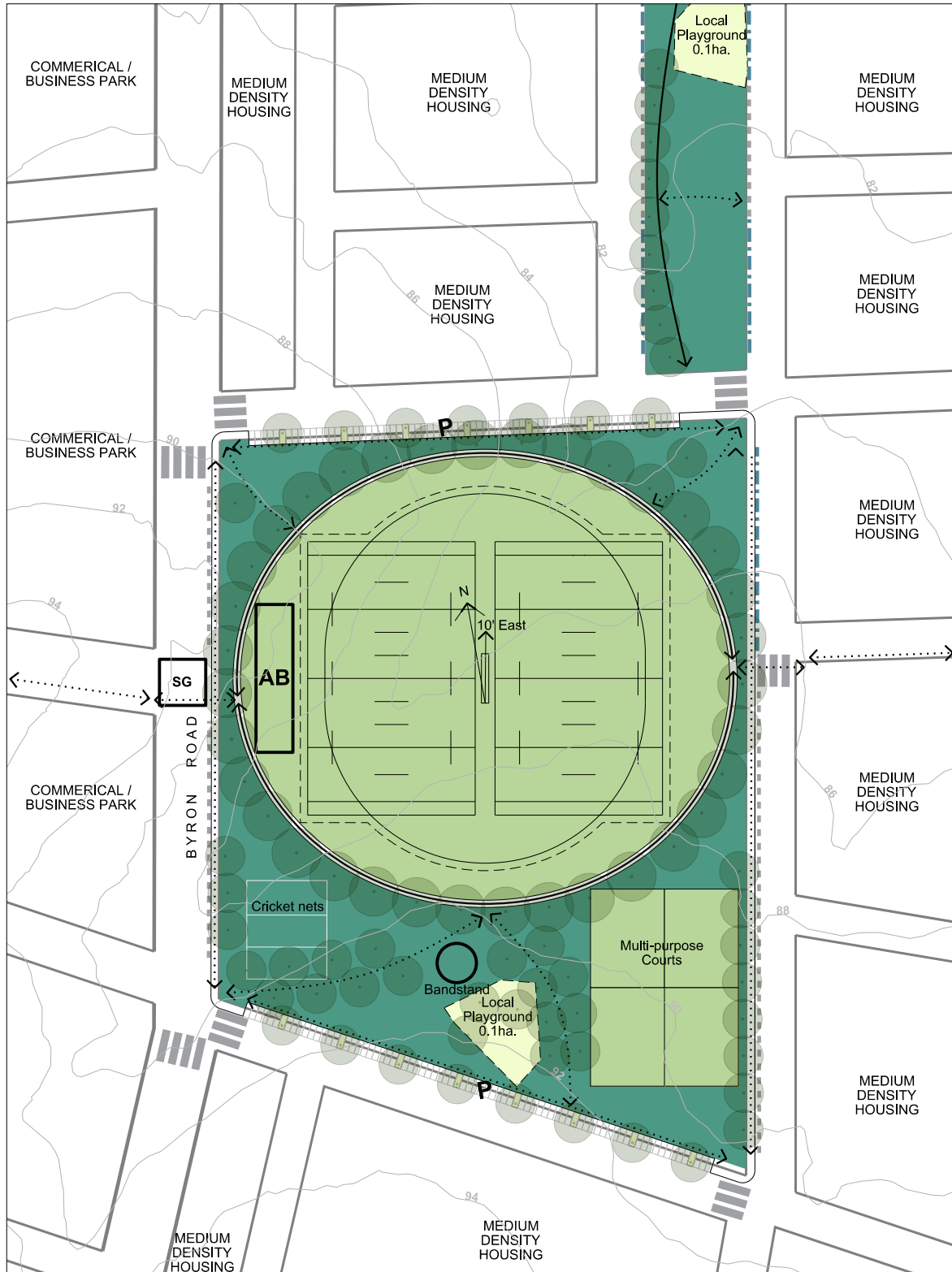
Facilities

- Multi-purpose playing field including 2 x rugby fields and 1 x cricket
- Park furniture
- Playground
- Sports furniture
- Picnic facility
- Sports exercise equipment
- Cricket practice nets
- Informal courts
- Formal courts
- Playing field lighting.

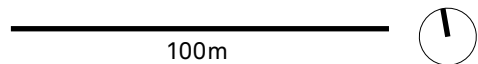


Key Plan





Byron Road Park Indicative Plan



Case Study: Petersham Park

Characteristics and Facilities

- 1 x cricket (used for baseball in winter), informal touch-footy and soccer training.
- Amenities building / grandstand.
- Bandstand, used for informal community events (birthday parties, weddings).
- Local playground with adjoining bbq area, northerly aspect to playing field on elevated ground provides view.
- Circular path around playing field used for walkers, and is good social meeting spot.
- Grading incorporates seating around perimeter of playing field.
- Perimeter tree planting provides green backdrop.
- Mixture of open and well shaded areas, with mixture avenue planting and isolated feature tree planting.



Byron Road Park Size overlay (adapted from google earth)



Photos: Greg Burgon



06

Plazas

Introduction

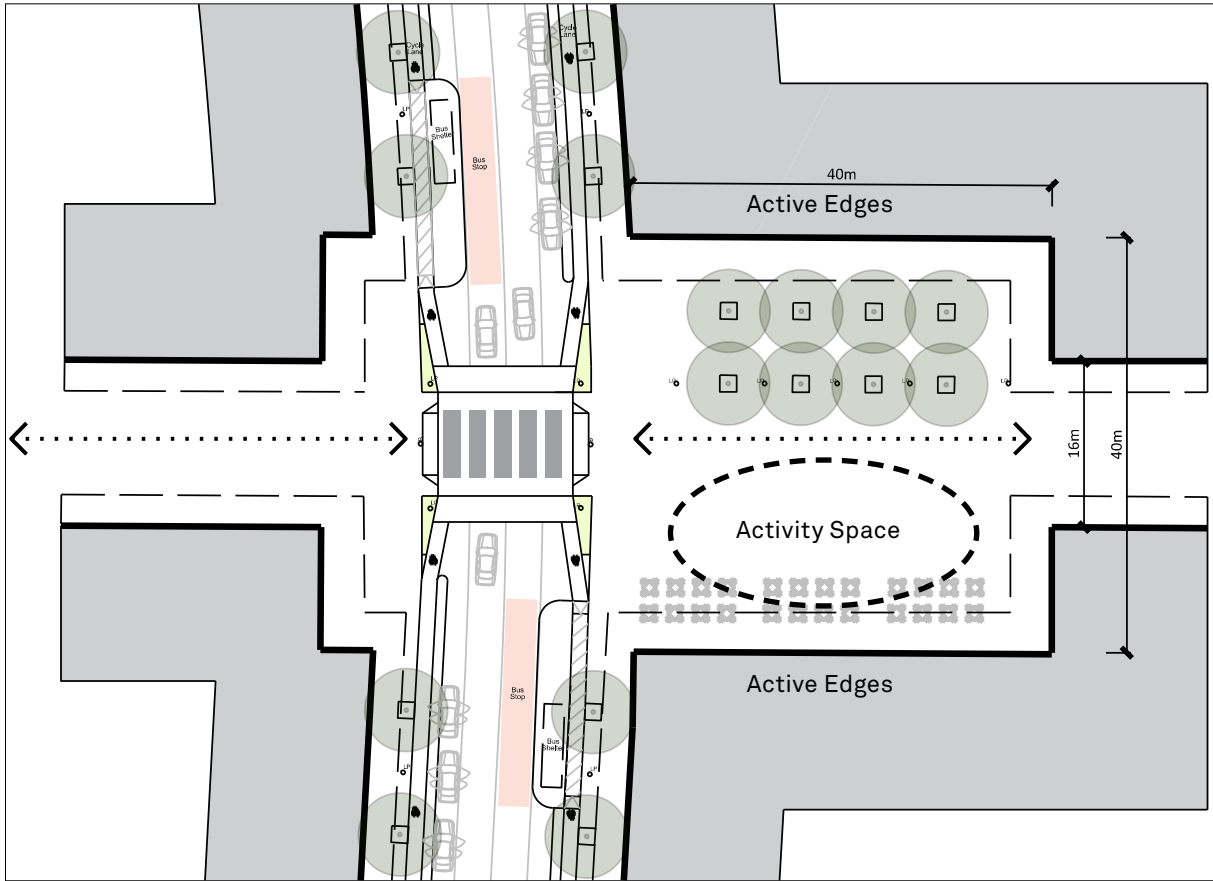
The Major Centre has several major public plazas proposed to complement the network of streets. They provide urban settings for community activities, and are strategically located at highly active nodes within the layout of the Major Centre.

Three main plazas are proposed - The Town Plaza, Civic Plaza and Rail & Bus Interchange Plaza. Other smaller urban plazas are located at the intersection of through-site links, providing smaller 'break out' areas and flexible spaces to complement active retail trade on these corners.

Objectives

The design of Plazas need to consider the multiple objectives that these serve including:

- 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;
- passive recreation function;
- cultural significance - places for social interaction and public art; and
- maintenance requirements.



Indicative plan of Town Plaza



Case Study: Rouse Hill Town Plaza

Characteristics and Facilities

- Good northerly aspect.
- Adjoins community facilities (eg. library).
- Building setbacks increased at intersection.
- Generous outdoor dining areas.
- Free public seating.
- Pedestrian friendly environment - multiple pedestrian crossings.
- Mixture of on-street parking and wider footpath areas.
- Mixed-use development surrounding is orientated towards the plaza, including upper levels.



Town Plaza Size overlay (adapted from google earth)



Photos: Greg Burgon

Rail & Bus Interchange Plaza

Quality of Materials

- Pedestrian pavement to be high-quality unit paver.
- Paving material and design to integrate with station entry / concourse to assist wayfinding.

Street Trees

- No street trees adjacent bus stops. Provide shade trees in Bus Interchange Plaza connecting to Rail Station Concourse.

Outdoor Dining

- 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.

Mid Block Crossing

- Provide raised mid-block crossing centred on Bus Interchange 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.

Corner blisters

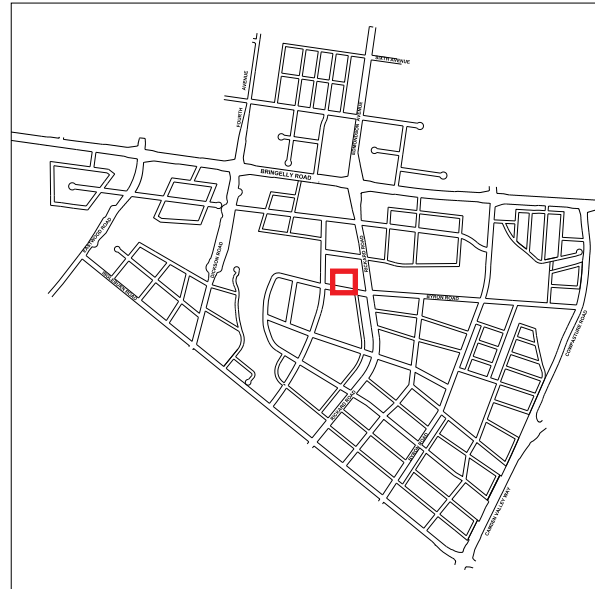
- Provide corner blisters at pedestrian crossings and the mid-block crossing.
- Provide low-level planting to the mid-block crossing.
- Use bollards if crossing is raised.

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.

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.



Key Plan

- Provide feature lighting (eg. catenary) in the Town Plaza and Interchange Plaza.

Public Seating

- 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.

Vehicle access to Plaza

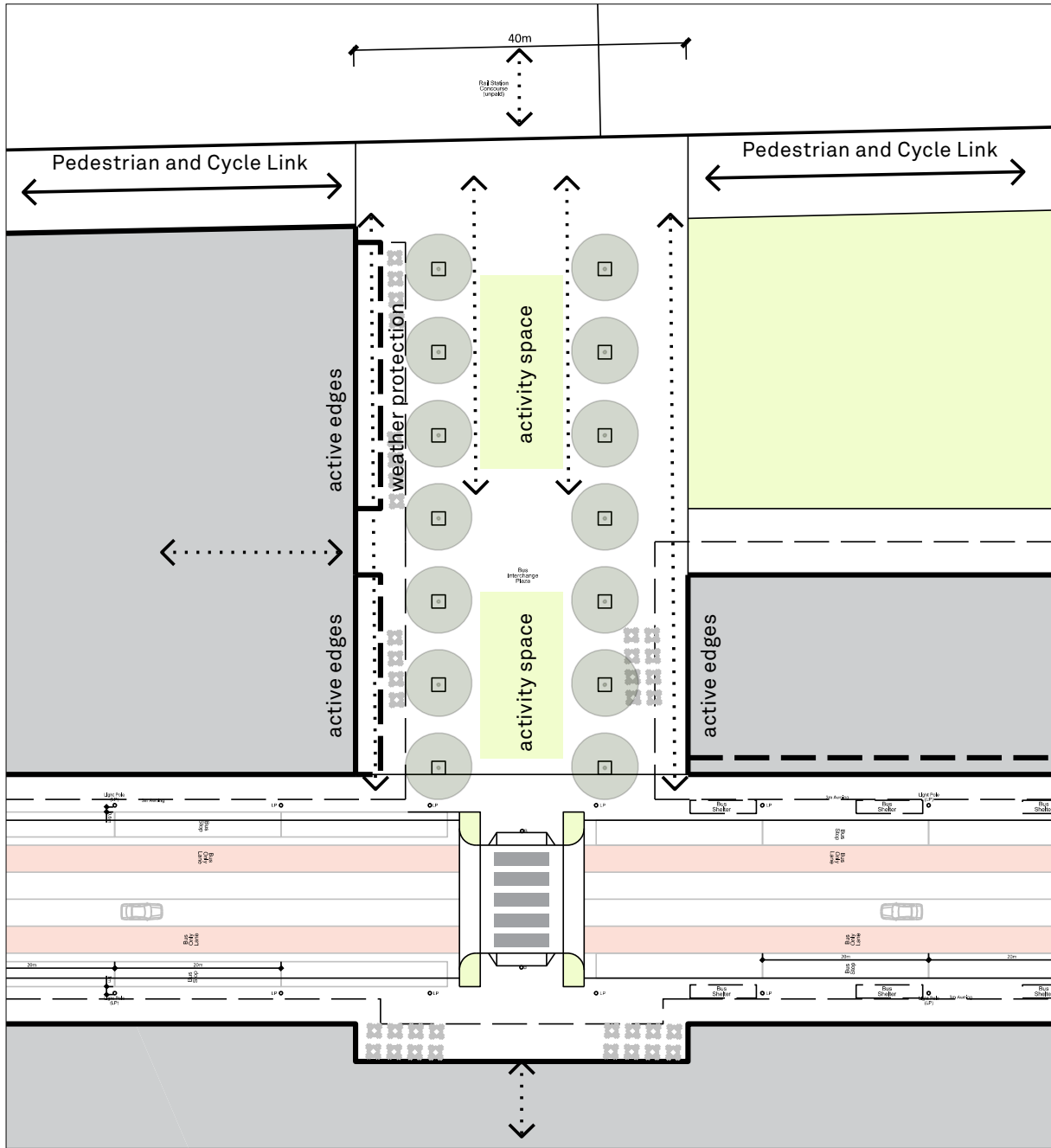
- Provide event and emergency vehicle access to the Town Plaza via the mid block crossing using removable bollards.

Activity Space

- Provide flexible public activity space with water and public art elements and free seating.

Public Art

- Extend the public art concepts prepared for the SWRL for the Train Station area to key pedestrian routes to the Retail and Civic Centres via the Rail & Bus Interchange Plaza.



Indicative plan of Rail & Bus Interchange Plaza



Case Study: St Leonards Plaza

Characteristics and Facilities

- Plaza links buses to train station
- Flanked by retail ground-level and residential above
- Urban plaza provides focus for lunchtime workers and residents from adjacent buildings
- Good solar aspect (northerly aspect)
- Good weather protection from colonnades
- Lack of visibility from street could be improved

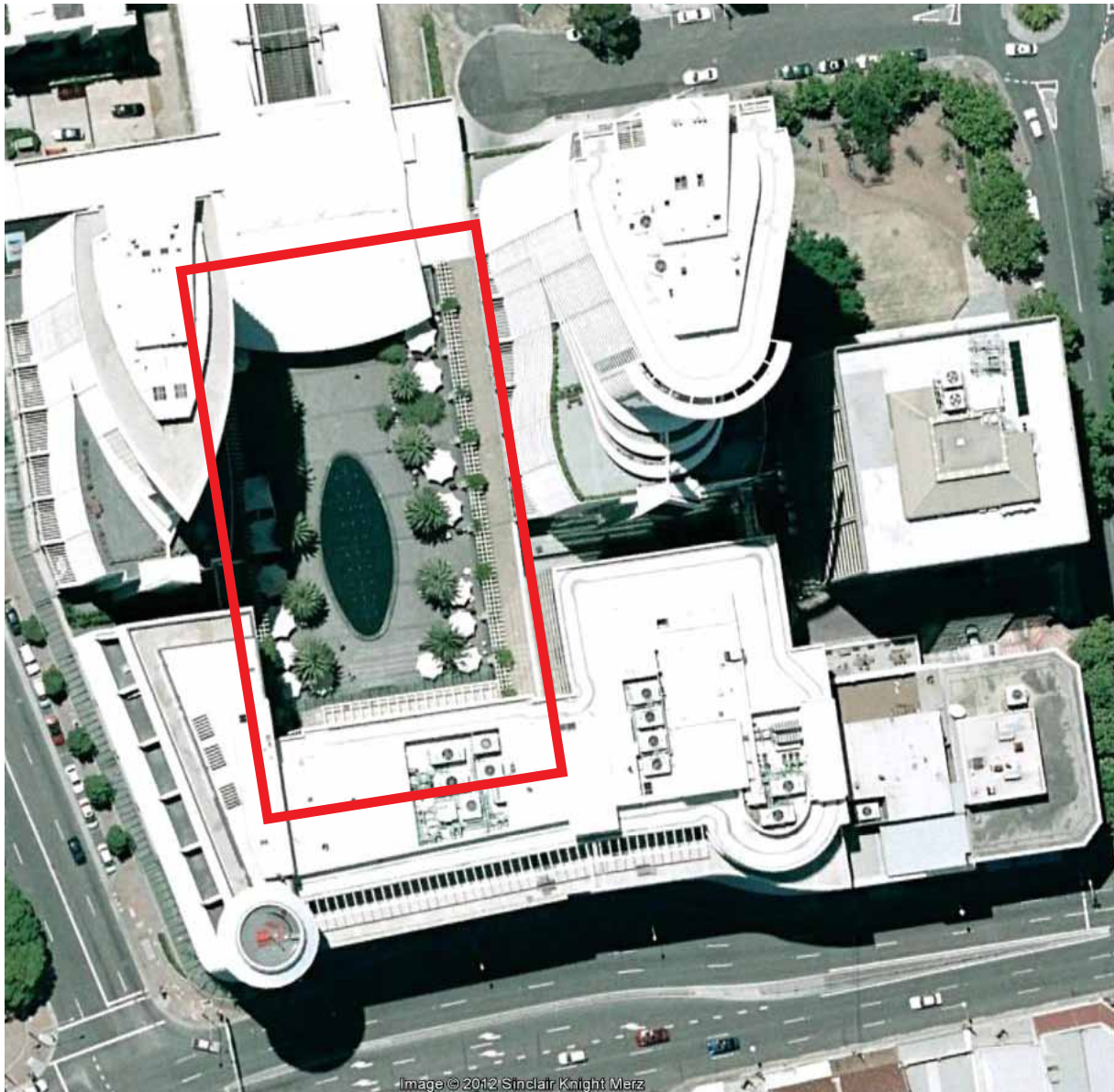


Image © 2012 Sinclair Knight Merz

Rail & Bus Interchange Plaza size comparison (adapted from google earth)



Photos: Greg Burgon

Civic Plaza

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 wayfinding to the station.

Shade Trees

- Provide shade trees in eastern corner to provide shade from the west in summer.

Outdoor Dining

- Locate on west side to provide good solar access in winter and shade from the western sun in summer.

Mid Block Crossing

- Provide mid-block crossing centred on the Civic Plaza providing easy pedestrian access to the TAFE site to the north.

Through site link

- Provide pedestrian through-site link access to Civic areas at mid-block crossing location. Provide additional building setbacks at entrances.

Corner blisters

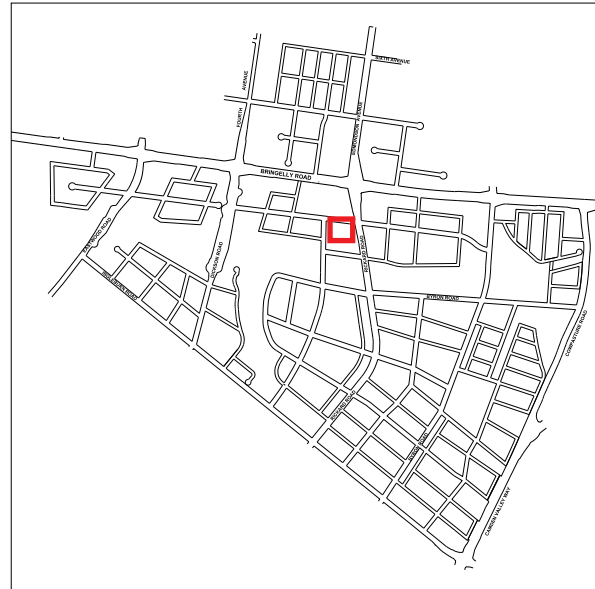
- Provide corner blisters at pedestrian crossings and mid-block crossing.
- Provide low-level planting and bollards to mid-block crossing.

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)

Public Seating

- 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.



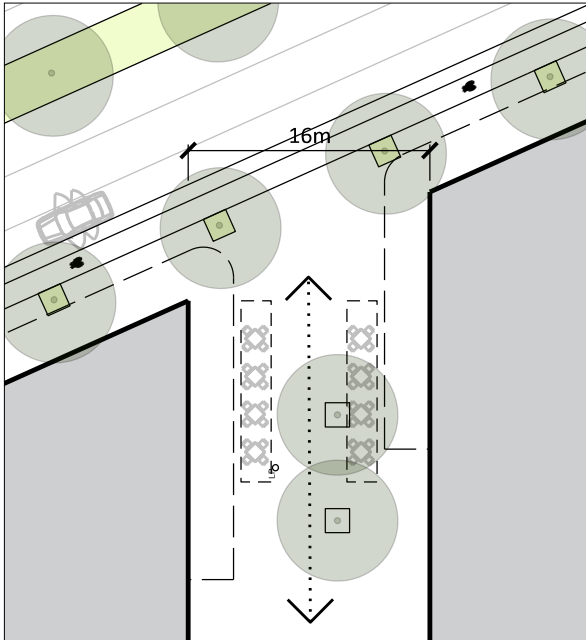
Key Plan

Vehicle access to Plaza

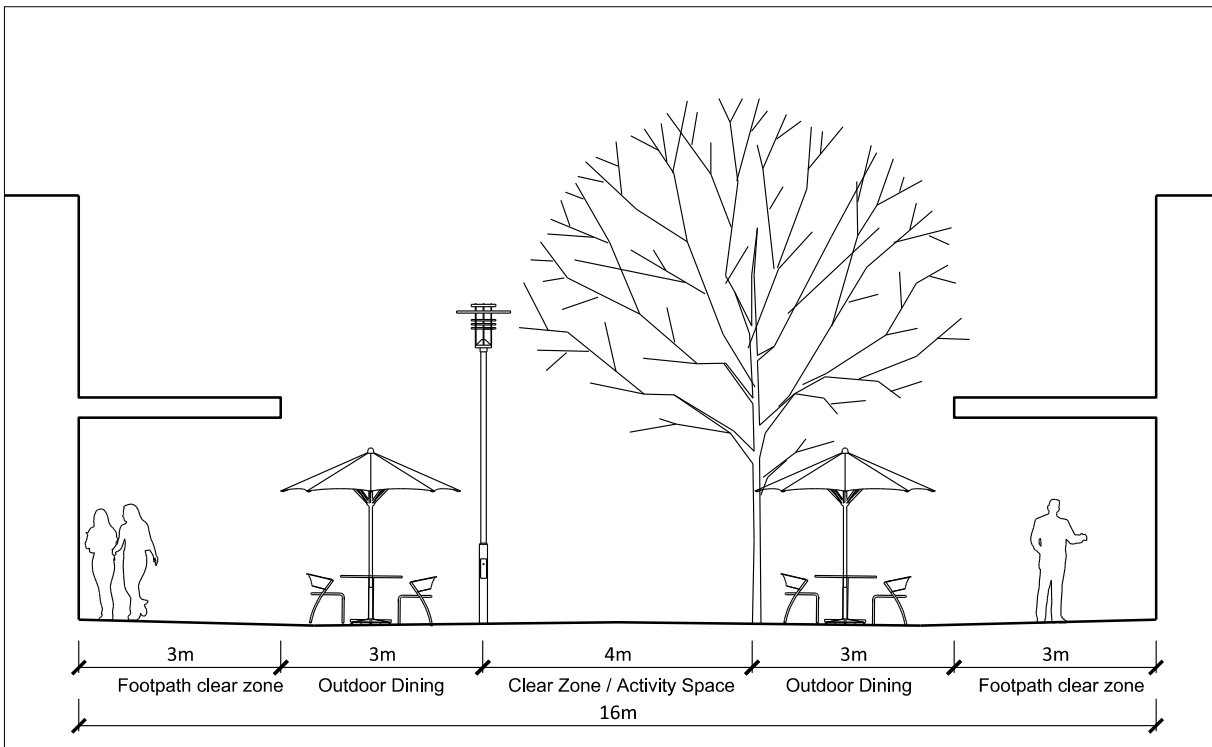
- Provide event and emergency vehicle access to the Civic Plaza via the mid block crossing using removable bollards.

Activity Space

- 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.



Typical Plan



Typical Section