PROPOSED RESIDENTIAL DEVELOPMENT

484 – 488 BRINGELLY ROAD, AUSTRAL

Traffic Impact Assessment

July 2017
(Rev B)

Reference 17134

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1. INTRODUCTION

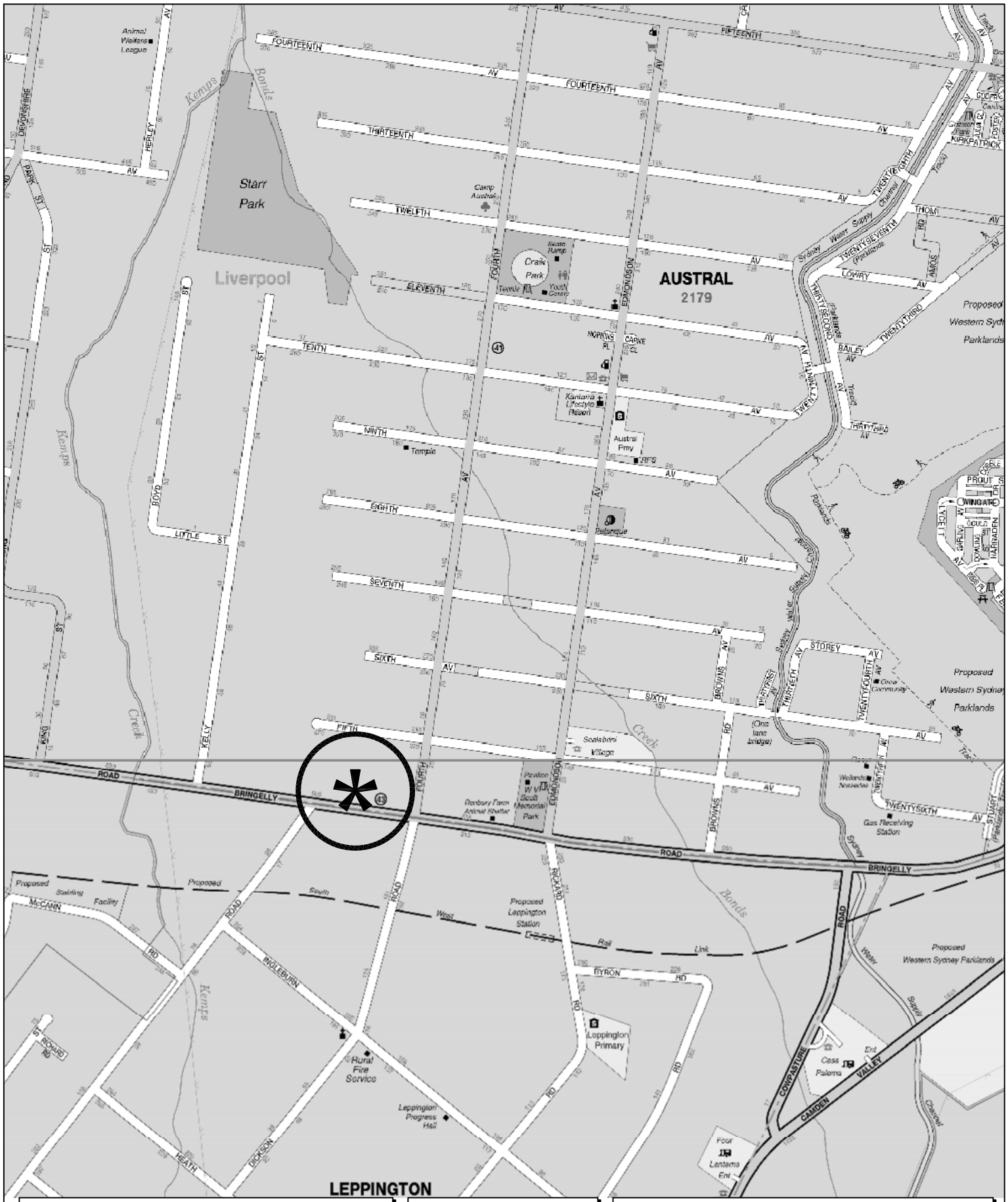
This report has been prepared to accompany a Development Application to Liverpool City Council for a proposed residential development on a site located at 484-488 Bringelly Road, Austral (Figure 1).

The Austral and Leppington North area is a large new urban precinct which will benefit from good transport services (focused on the new Leppington Railway Station) as well as large open space areas, retail and educational facilities. The precinct will also have ready access to the arterial road system and the major regional facilities available nearby in Liverpool CBD.

The development site is located in the southern part of the precinct having frontage to the northern side of Bringelly Road with Leppington Railway Station located just to the south-eastern corner. The development application proposes a total of 253 units in 4 complexes incorporated within the Council's ILP access road system.

The purpose of this report is to:

* describe the site, the planning undertaken for the area and the proposed development
* describe the existing road network and the prevailing traffic conditions
* describe the future road network and traffic management circumstances
* assess the potential traffic implications of development
* assess the suitability of the access road system and traffic control arrangements
* assess the appropriateness of provisions for carparking, internal circulation and servicing arrangement



LEGEND

LOCATION

FIG 1

2. PROPOSED DEVELOPMENT SCHEME

2.1 SITE, CONTEXT AND EXISTING USE

The site (Figure 2) is Lot 6 and 7 of DP1203674 which occupies a rectangular shaped area of 17,421m^2 with a frontage to the northern side of Bringelly Road. The site, which is located in the southern part of the Austral Precinct just to the west of Fourth Avenue, currently comprises 3 rural residential dwellings with some out buildings.

Austral and Leppington North is a developing new precinct situated to the east of the expansive Western Sydney Parklands with Kemps Creek running just to the west. Rural residential properties adjoin the site and the large Scalabrini Retirement Village is located on the eastern side of Edmondson Avenue while the Scott Memorial Park extends to the south of Fifth Avenue.

2.2 PRECINCT PLANNING

Austral and Leppington North has been master planned to:

- create a primarily residential neighbourhood providing for some 17,500 homes
- reduce environmental impact and facilitate greater social interaction
- provide a mix of housing types and active streets
- provide open space amenity with 135.4ha of parkland
- focus on Leppington major centre, Austral local centre and 3 neighbourhood centres
- provide 2 high schools and 5 primary schools
- ensure to full advantage is made of the proposed rail and bus services as well as cyclist and pedestrian networks

LEGEND

SITE

FIG 2

The Indicative Layout Plan for Austral and Leppington North is reproduced from the DCP overleaf which illustrates the broad development outcome along with, the development footprint, land uses, density, open space, transport linkages and location of community facilities and schools. Whilst there is flexibility permitted in much of the future access road system there are a number of "fixed" roads.

2.3 PROPOSED DEVELOPMENT

The proposed development scheme involves 4 residential complexes across the site with surrounding communal courtyard areas. There will be a total of 253 apartments being developed across 2 stages as follows:

Stage 1

Construction of 2 four-storey residential buildings on Lot 1 to accommodate 144 units in the following composition:

- 24 x one-bedroom
- 118 x two-bedroom
- 2 x three-bedroom

Construction of the following access roads:

- Half road (8m wide)
- Full local road (16m wide)
- Full service road (13.1m wide)

Stage 1 residential carpark will be provided in an integrated basement comprising 145 residential car spaces (including 16 accessible spaces) plus 29 visitor spaces.

Stage 2

Construction of 2 four-storey residential buildings on Lot 2 to accommodate 109 units in the following composition:

- 23 x one-bedroom
- 78 x two-bedroom
- 8 x three-bedroom

The basement carpark will comprise 139 car spaces within 117 allocated for residents (including 11 accessible spaces) and 22 allocated for visitors.

Vehicle access to the proposed residential buildings will involve 2 driveways fronting to the southern service road and eastern side of the central service road.

Details of the proposed scheme are provided on the plans prepared by Dreamscapes Architects which accompany the Development Application and are reproduced in part in Appendix A.

NSW GOVERNMENT Planning & Infrastructure

Kemps Creek

Western Sydney Parklands

Western Sydney Parklands

Western Sydney Parklands

North Rossmore

Gurner Avenue

Fifteenth Avenue

Fourth Avenue

Edmondson Avenue

Twelfth Avenue

Tenth Avenue

Boyd Street

Kelly Street

Little Street

Eighth Avenue

Sixth Avenue

Browns Road

Bringelly Road

Dickson Road

Eastwood Road

Inglebum Road

Rickard Road

Byron Road

Cowpastures Road

Camden Valley Way

Rossmore

Catherine Fields North

Leppington

East Leppington

AUSTRAL & LEPPINGTON NORTH PRECINCTS

INDICATIVE LAYOUT PLAN

- Land to which this Plan applies
- Precinct Boundary
- Indicative School Location
- Retail/Commercial Area
- Light Industrial
- Bulky Goods
- Medium Density Residential
- Low Density Residential
- Environmental Living
- Rural Transition
- Business Park
- Mixed Use
- Retail Core
- Civic Precinct
- Community Centre
- Major Road
- Local Road
- Private Open Space
- Passive Open Space
- Active Open Space
- Drainage
- Environmental Conservation
- Environmental Protection Overlay
- Canal
- SWRL Corridor
- Existing Easements
- Substation
- Commuter Carparking
- Bus Interchange
- Pedestrian Link/Plaza

0 200m 500m 1km

3. EXISTING ROAD NETWORK AND TRAFFIC CONDITIONS

3.1 ROAD NETWORK

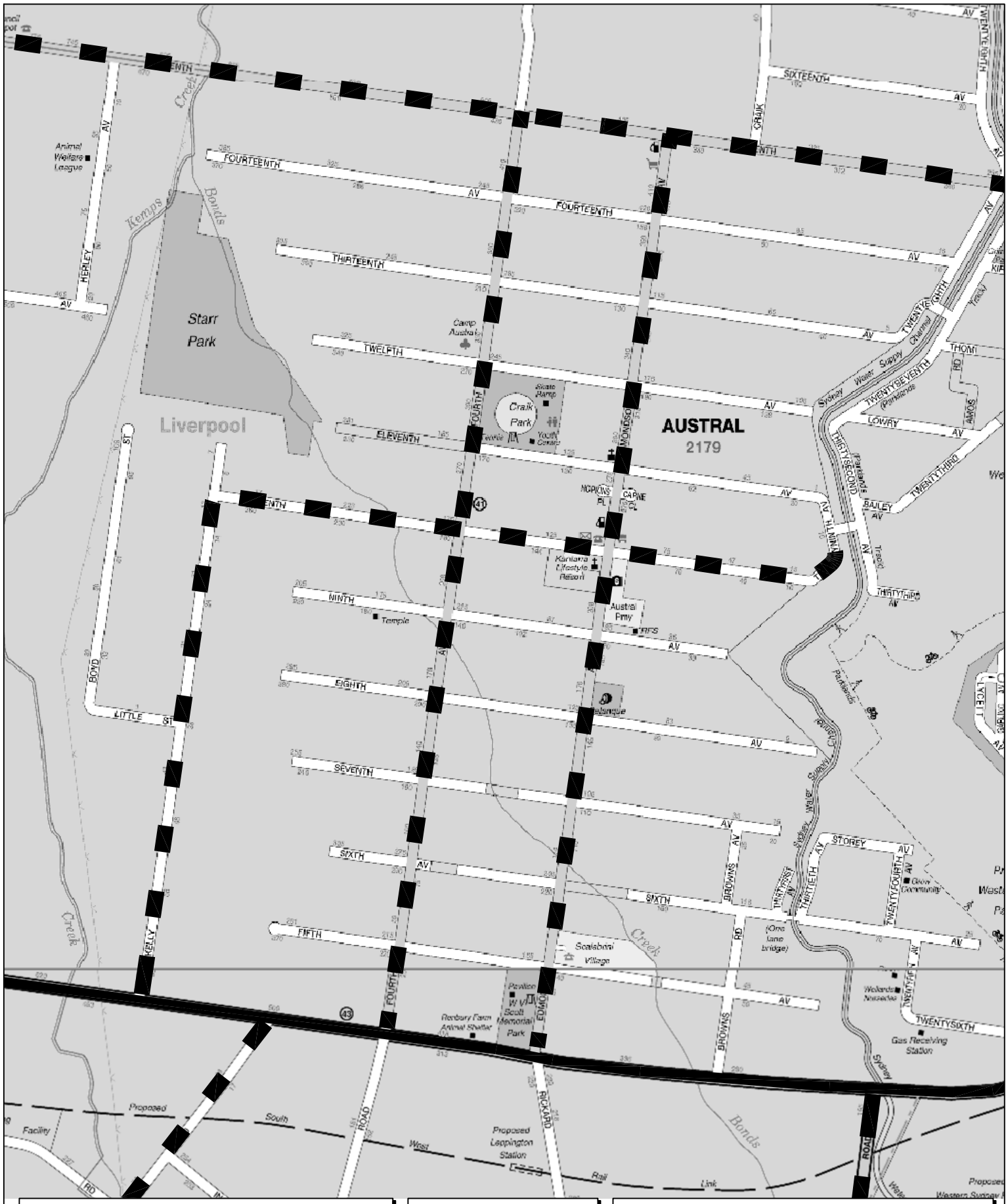
The existing road network serving the site (Figure 3) comprises:

- *Camden Valley Way* – a State Road and arterial route which connects between the Hume Highway at Casula and Camden
- *Cowpasture Road* – a State Road and arterial route which connects between the Horsley Drive at Bossley Park and Camden Valley Way at Horningsea Park
- *Bringelly Road* – a State Road and sub-arterial route which connects between Cowpasture Road/Camden Valley Way at Horningsea Park and The Northern Road at Bringelly
- *Cowpasture Road (South)* – a State Road and Collector route which connects between Camden Valley Way and Bringelly Road
- *Fourth Avenue and Edmondson Avenue* – Collector Roads connecting to Bringelly Road

3.2 TRAFFIC CONTROLS

The limited existing traffic controls on the road network (Figure 4) comprise:

- the 50 kmph speed restriction on the local and collector road system
- the traffic signals at the Bringelly Road, Cowpasture Road and Camden Valley Way intersection
- the various GIVEWAY and STOP sign controls at intersections in the area



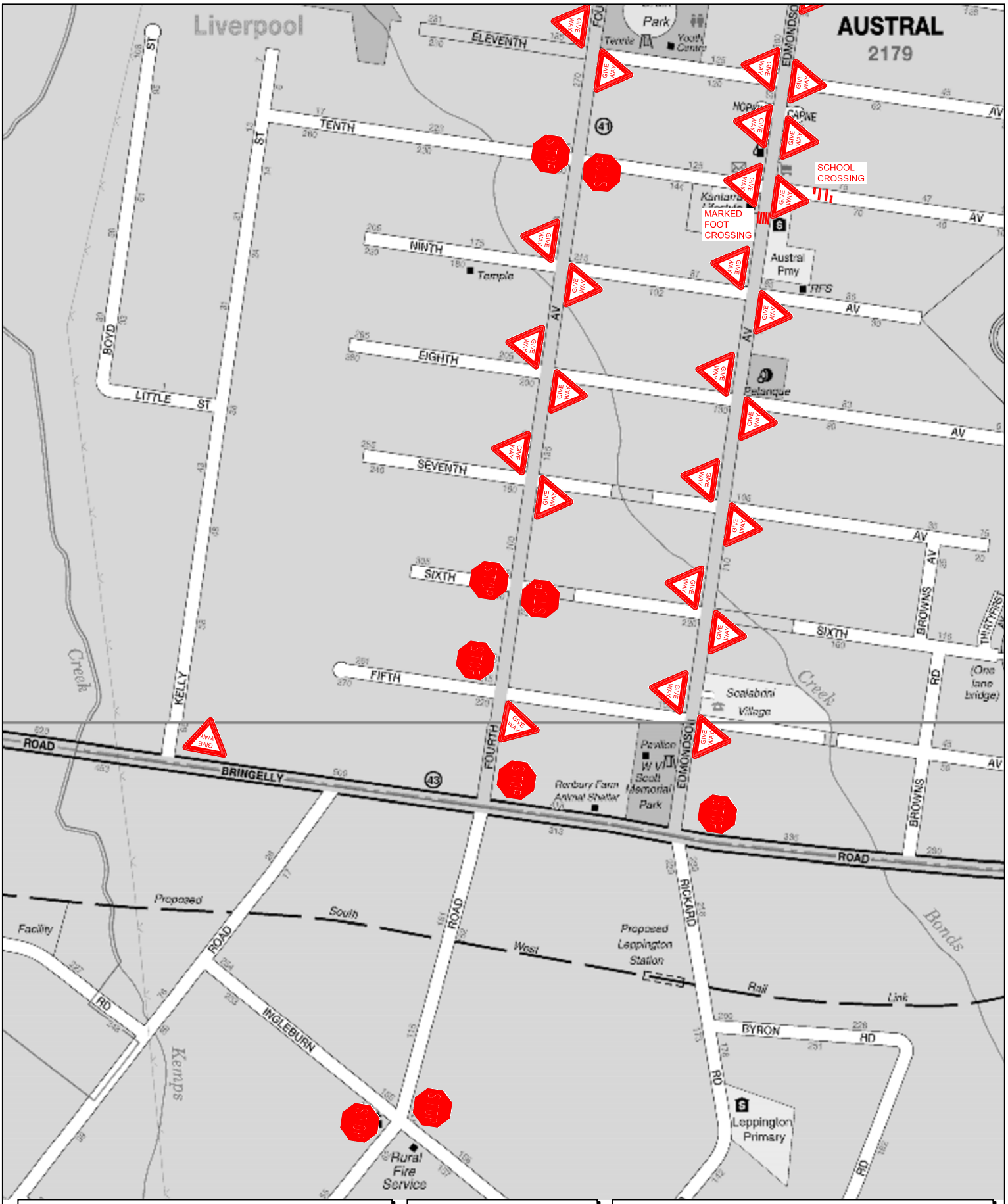
LEGEND

- ARTERIAL
- SUB-ARTERIAL
- COLLECTOR

N

ROAD NETWORK

FIG 3



LEGEND

- TRAFFIC SIGNAL CONTROL
- ROUNDABOUT
- RESTRICTED TURNING MOVEMENT
- STOP SIGN
- GIVE WAY SIGNS

N

TRAFFIC CONTROLS

FIG 4

3.3 TRAFFIC CONDITIONS

The existing traffic volumes on Bringelly Road to the west of Camden Valley Way are as follows:

AADT	AM Peak	PM Peak
9,090	700	800

The existing traffic flows along Fourth Avenue are quite minor at the present time while the flows along Edmondson Avenue are as follows:

	AM	PM
Northbound	140	110
Southbound	100	130

The operational performance of intersections in the vicinity of the site during the morning and afternoon peak periods is quite satisfactory at the present time without any undue queuing or congestion.

3.4 TRANSPORT SERVICES

There is currently only limited bus service provision along Bringelly Road at present however the new South-West Rail Link with a station at Leppington is now operating providing connections to Glenfield and Liverpool, which are serviced by the South, Airport/East Hills and Cumberland Lines.

There are two Interline Bus Services routes currently operating along sections of Bringelly Road. Route 856 operates from Liverpool to Bringelly, via Bringelly Road, Ingleburn Road and Camden Valley Way with hourly during peak periods and infrequently during non-peak times. This bus service is timed to arrive at Liverpool Station to connect with onward rail services to the City.

Route 855 operates between Austral to Liverpool, via Fifteenth Avenue, Cowpasture Road and the Hume Highway with weekday services operating hourly between 06:00-10:00, however, only three services are provided in the afternoon.

4. FUTURE ROAD NETWORK, TRAFFIC AND TRANSPORT CIRCUMSTANCES

4.1 ROAD NETWORK

RMS have commenced the upgrading of Bringelly Road over the 10km length between Camden Valley Way and The Northern Road and this work will complement the completed and current (planning and construction) for Camden Valley Way and The Northern Road.

The upgrade works on Bringelly Road will be staged with construction potentially being undertaken up to 2036. The staging proposals indicate that Bringelly Road will be 2 lanes each way initially with supplementary turning lanes at intersections and 3 lanes each way after 2031.

The proposed road hierarchy for the precinct is indicated on the plan reproduced from the DCP overleaf showing a Transit Boulevard along Edmondson Avenue and collector status on Fourth Avenue and Eighth Avenue.

4.2 TRAFFIC CONTROLS

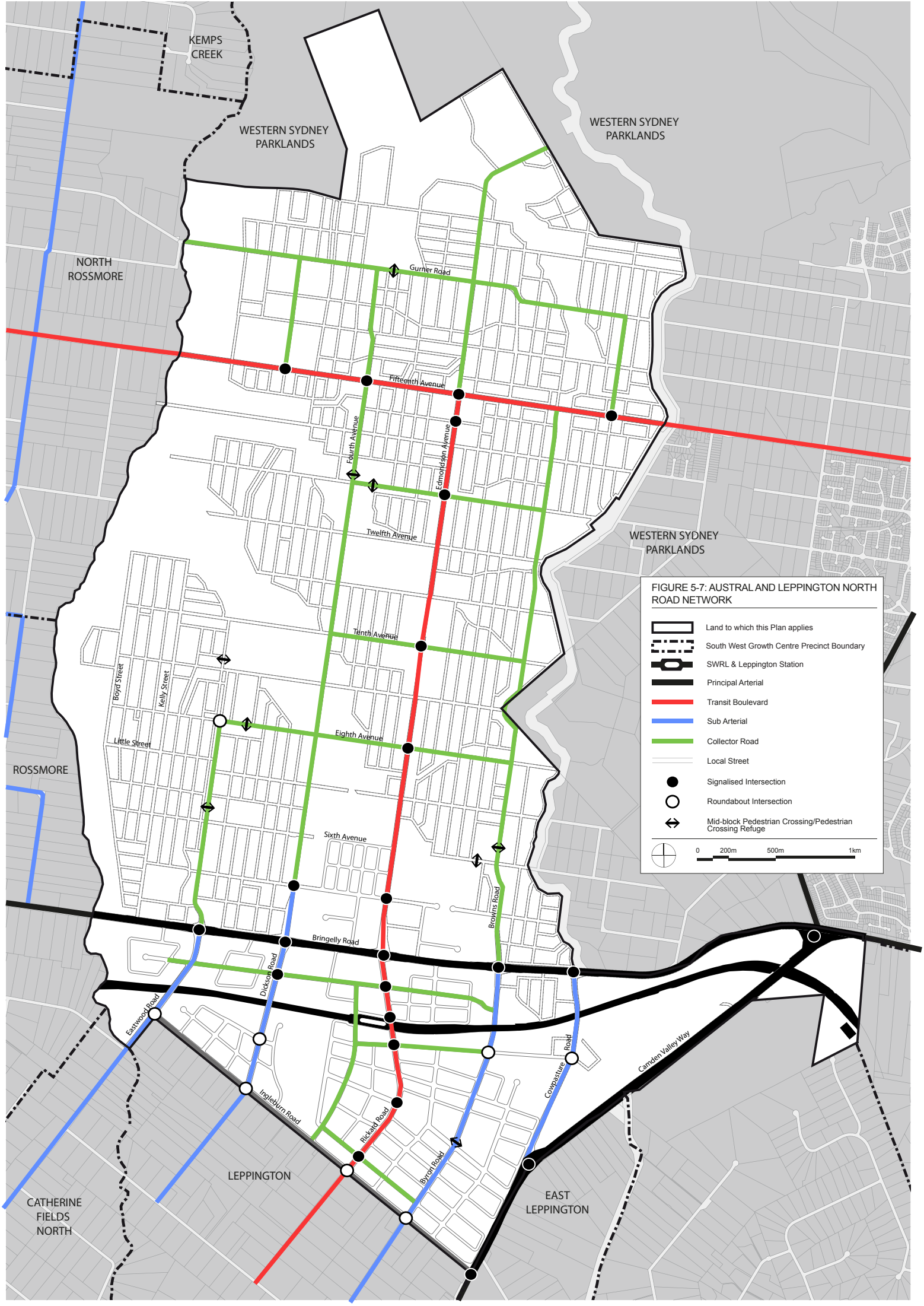
The Bringelly Road upgrade project includes the provision of traffic signals at a number of access intersections. The plans also indicate the provision of Bus Priority measures with bus stops located at regular points. There is also provision for pedestrians and cyclists with a shared pathway along the northern side of Bringelly Road and controlled crossings at the intersection signals. The proposed principal intersection controls in the area are shown in the plan overleaf which include the Edmondson Avenue/Eighth Avenue, Fourth Avenue and Fifth Avenue and Bringelly Road intersections.

Table 1: Intersection upgrade staging

Intersection	2011	2016	2021	2026	2031	2036
The Northern Road	Existing layout	Extend turning bay lengths	Upgrade intersection - **two lanes** on Bringelly Road approaches	-	-	Ultimate layout
Kelvin Park Drive	Existing layout	-	Upgrade intersection - **signalisation** and **two lanes** on Bringelly Road approaches	-	-	Ultimate layout
Jersey Road	Existing layout	-	Upgrade intersection * - **signalisation** and **two lanes** on Bringelly Road approaches	-	-	Ultimate layout
Masterfield Street	Existing layout	-	Upgrade intersection - **two lanes** on Bringelly Road approaches (priority intersection)	-	Upgrade intersection - **signalisation** and **two lanes** on Bringelly Road approaches	Ultimate layout
North Avenue	Existing layout	-	Upgrade intersection *- **signalisation** and **two lanes** on Bringelly Road approaches	-	-	Ultimate layout
King Street	Existing layout	-	Upgrade intersection - **signalisation** and **two lanes** on Bringelly Road approaches	-	-	Ultimate layout
Eastwood Road	Existing layout	-	Upgrade intersection *- **signalisation** and **three lanes** on Bringelly Road approaches	-	-	Ultimate layout
Fourth Avenue	Existing layout	-	Upgrade intersection - **signalisation** and **three lanes** on Bringelly Road approaches	-	-	Ultimate layout
Edmondson Avenue	Existing layout	Upgrade intersection - **signalisation** and **three lanes** on Bringelly Road approaches	-	Ban northbound and southbound right turn movements	Ban eastbound right turn movement	Ultimate layout
Browns Road	Existing layout	-	Upgrade to T intersection - **signalisation** and **three lanes** on Bringelly Road approaches	-	-	Ultimate layout
Cowpasture Road	Existing layout	Upgrade intersection - **signalisation** and **two lanes** on Bringelly Road approaches	-	-	Upgrade intersection - **three lanes** on Bringelly Road approaches	Ultimate layout

Source: AECOM, 2011

*- including an interim U-turn facilities to assist with local access with the upgrade of Bringelly Road to a divided carriageway


KEMPS CREEK
WESTERN SYDNEY PARKLANDS
WESTERN SYDNEY PARKLANDS
NORTH ROSSMORE
Gurner Road
Fifteenth Avenue
Fourth Avenue
Edmondson Avenue
Twelfth Avenue
WESTERN SYDNEY PARKLANDS
Tenth Avenue
Boyd Street
Kelly Street
Little Street
Eighth Avenue
ROSSMORE
Sixth Avenue
Browns Road
Bringelly Road
Dickson Road
Eastwood Road
Camden Valley Way
Cowpasture Road
Ingleburn Road
Rickard Road
Byron Road
LEPPINGTON
EAST LEPPINGTON
CATHERINE FIELDS NORTH
FIGURE 5-7: AUSTRAL AND LEPPINGTON NORTH ROAD NETWORK
Land to which this Plan applies
South West Growth Centre Precinct Boundary
SWRL & Leppington Station
Principal Arterial
Transit Boulevard
Sub Arterial
Collector Road
Local Street
Signalised Intersection
Roundabout Intersection
Mid-block Pedestrian Crossing/Pedestrian Crossing Refuge
0
200m
500m
1km

4.3 TRAFFIC CONDITIONS

The projected traffic volumes at the intersections along Bringelly Road are identified in the AECOM Study for 2016, 2021, 2026 and 2031 weekday morning and afternoon peak periods.

The operational performance of access intersections as undertaken by AECOM having regard for the staging of the upgrade works and increasing traffic demands reveals that satisfactory operational performances will be achieved.

4.4 TRANSPORT SERVICES

Precinct planning for release areas along Bringelly Road are aimed to ensure the provision of appropriate direct links for buses, pedestrians and cyclists enabling non-car trips both directly to adjacent suburbs and to connect with regional public transport services. The design for Bringelly Road addresses the need for supporting infrastructure including a shared pathway and bus priority measures that will enable the establishment of good bus service connections to employment and/or rail interchange nodes including Leppington, Liverpool, Campbelltown and Camden and connection to the open space network.

RAIL SERVICES

The new South West Rail Link (SWRL) from Glenfield to Leppington has stations at Edmondson Park and Leppington with bus interchanges, pedestrian and cyclist facilities as well as “kiss and ride” zones and commuter car parking.

The SWRL offers a heavy rail transport option for the future residents of SWGC by providing frequent train services to Glenfield and the rest of the CityRail network.

The current service provides four services per hour throughout the day with up to 12 trains per hour in peak periods. The frequency of service is likely to be increased over time as demand increases and service provision is influenced by patronage demand as well operating requirements of the network.

It is expected that Bringelly Road and Rickard Road will be the main access arterial road to Leppington Station and its interchange where a total of 800 commuter car parking spaces and bus stops are provided.

BUS SERVICES

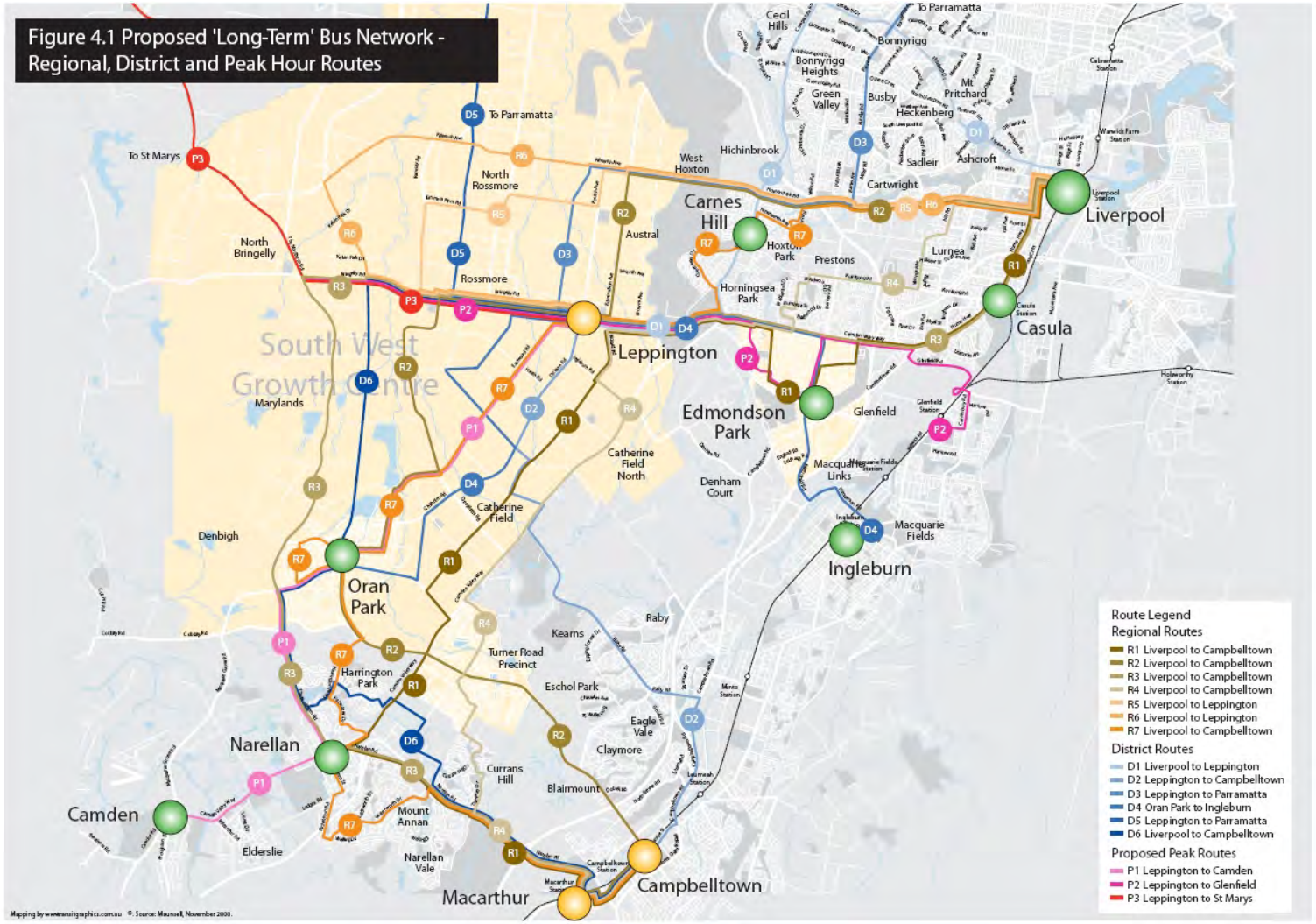
The South West Sector Bus Servicing Plan provides a long-term bus servicing strategy to cater for the future urban growth in the SWGC.

The aim of the strategy is to ensure that new residents and workers in the area have a travel choice that includes public transport and that the staging of precinct releases is consistent from a public transport efficiency perspective. The strategy focuses on the SWGC but also gives consideration to suburbs and centres which are located adjacent and beyond in order to ensure integration of the bus networks within the wider South Western Sydney area.

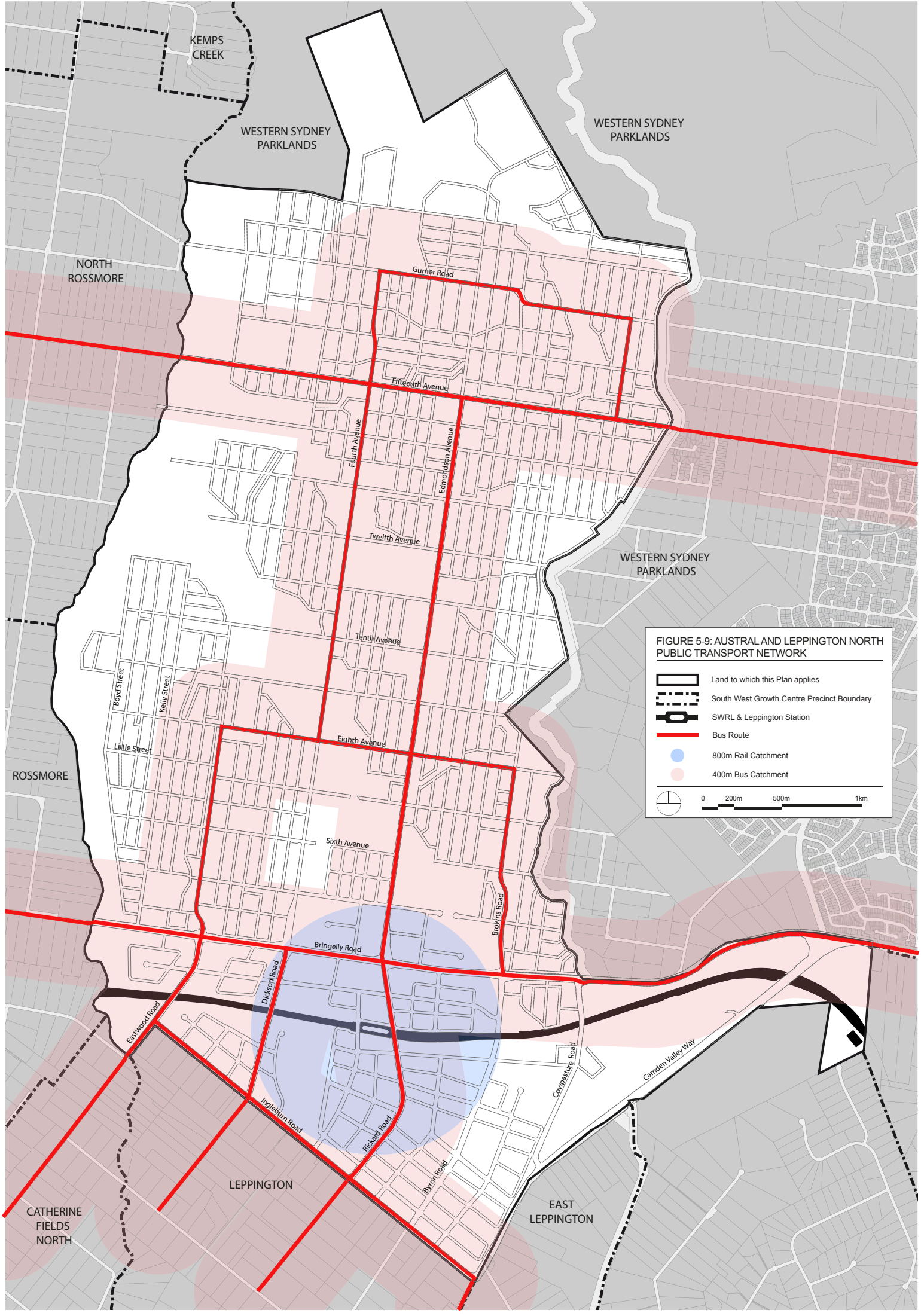
The 'long-term' bus network proposal consists of seven regional, six district and three peak hour only bus routes to provide a network that links the proposed major centres (Liverpool, Campbelltown, Parramatta, Oran Park and Leppington) and supports accessibility to each of the SWGC precincts. The 'long-term' bus network plan is shown on the diagrams reproduced overleaf.

The South West Sector Bus Servicing Plan provides a guide to the potential bus networks that would be operating along Bringelly Road. Bringelly Road is seen as the most significant east-west bus corridor as the majority of proposed bus routes will be travelling on sections of Bringelly Road connecting Campbelltown, Oran Park, Leppington and Liverpool. Given its significance as a bus corridor, bus priority measures are planned for the corridor to cater for the increasing number of buses and shorter travel times for buses, with a particular focus into Leppington Town Centre and Station.

Figure 20 Long-term' South west sector bus servicing plan



Source: AECOM, 2009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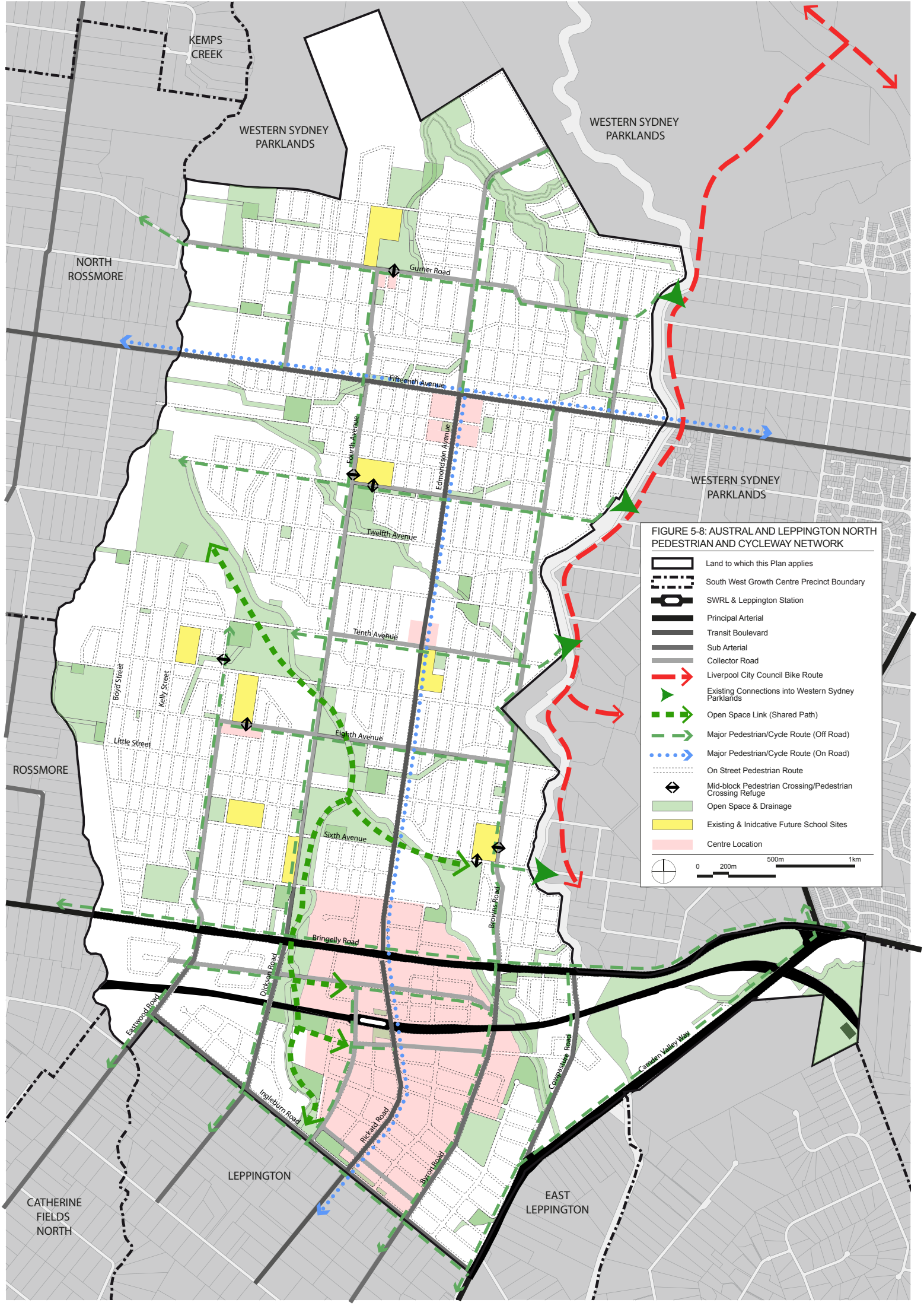
Sixth Avenue
Browns Road
Bringelly Road
Dickson Road
Eastwood Road
Cowpasture Road
Camden Valley Way
Ingleburn Road
Rickard Road
Byron Road
LEPPINGTON
EAST LEPPINGTON
CATHERINE FIELDS NORTH
FIGURE 5-9: AUSTRAL AND LEPPINGTON NORTH PUBLIC TRANSPORT NETWORK
Land to which this Plan applies
South West Growth Centre Precinct Boundary
SWRL & Leppington Station
Bus Route
800m Rail Catchment
400m Bus Catchment
0
200m
500m
1km

The likely peak hour headway will be 30 minutes for District Bus Routes and 15 minutes for Regional and Peak Bus Routes. There will be 26 planned bus routes serving Leppington Station in the long-term, with a peak hour bus flow of approximately 80 to 90 buses to Leppington Station via Bringelly Road.

BICYCLE AND PEDESTRIAN NETWORK

Details of the planned bicycle and pedestrian network are provided on the diagram overleaf. There will be shared pathways along Bringelly Road and Fourth Avenue as well as the collector roads together with major open space linkages. On-street bicycle lanes will be provided along Edmondson Avenue as part of the regional network and all local and collector roads will have paved footways while the traffic signals at the Fourth Avenue intersections will facilitate pedestrian crossing to/from the bus routes.


KEMPS CREEK
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Gurner Road
Fifteenth Avenue
Fourth Avenue
Edmondson Avenue
Twelfth Avenue
Tenth Avenue
Eighth Avenue
Sixth Avenue
Boyd Street
Kelly Street
Little Street
Bringelly Road
Dickson Road
Eastwood Road
Inglebirn Road
Rickard Road
Byron Road
Browns Road
Cowpasture Road
Camden Valley Way
FIGURE 5-8: AUSTRAL AND LEPPINGTON NORTH PEDESTRIAN AND CYCLEWAY NETWORK
Land to which this Plan applies
South West Growth Centre Precinct Boundary
SWRL & Leppington Station
Principal Arterial
Transit Boulevard
Sub Arterial
Collector Road
Liverpool City Council Bike Route
Existing Connections into Western Sydney Parklands
Open Space Link (Shared Path)
Major Pedestrian/Cycle Route (Off Road)
Major Pedestrian/Cycle Route (On Road)
On Street Pedestrian Route
Mid-block Pedestrian Crossing/Pedestrian Crossing Refuge
Open Space & Drainage
Existing & Inidcative Future School Sites
Centre Location
0
200m
500m
1km

5. TRAFFIC

RMS have recently revised their guideline peak traffic generation rate for High Density Residential Apartments with access to transport services from 0.29vtph per apartment to 0.19 and 0.15vtph (AM and PM respectively). It is apparent that the traffic generation of the proposed development will reflect this new criteria as the railway station and Bringelly Road transport infrastructures will be completed by the time the development is occupied.

The planning undertaken for the precinct was based on the former RTA traffic generation rate for apartments and assessment of the traffic implications of the envisaged development indicates that the traffic generation outcome will be significantly lower as follows:

253 apartments @ 0.29vtph

AM			PM		
IN	**OUT**	**Total**	**IN**	**OUT**	**Total**
14	59	73	59	14	73

253 apartments @ 0.19 and 0.15vtph

AM			PM		
IN	**OUT**	**Total**	**IN**	**OUT**	**Total**
10	38	48	30	8	38

The proposed development scheme being comprised of 253 apartments will be compliant with the “yield” permitted under the planning provisions. It follows that the total traffic generation outcome will only be some 52% to 65% of that assessed in the studies undertaken for the precinct.

It is apparent therefore that the traffic generated by the proposed development will not have any adverse traffic implications for the existing and developing road network.

6. PARKING

The BCC Growth Centres Precincts DCP specifies carparking provision for residential apartments of:

One bedroom	1 space
Two bedrooms	1 space
Three bedrooms	1.5 spaces
Visitors	1 space per 5 dwellings

Application of this criteria to the proposed development would indicate the following minimum requirements:

	Apts	**Spaces**
One Bed	47	47
Two Bed	196	196
Three Bed	10	15
Visitors	(253)	51
Total:		**309**

A total of 313 parking spaces will be provided in compliance with the DCP requirements for residents and visitors. The DCP also specifies a requirement for bicycle provision of 1 space per 3 apartments for residents and visitors (i.e. 84 spaces) and accordingly it is proposed to provide a total of 84 bicycle spaces in the development.

Whilst it is proposed to provide more parking spaces than the DCP criteria, this criteria as a “minimum” and the provision of these additional spaces will reduce the on-street parking overflow without necessarily increasing the traffic generation of the development in any perceptible way.

7. ACCESS, INTERNAL CIRCULATION AND SERVICING

ACCESS

Access will be provided by two 6.1m wide combined ingress/egress driveways connecting the basement to the new North-South and East-West access roads respectively.

The proposed driveways will be located sufficiently away from intersections in accordance with the AS2890.1 & 2 design criteria and there will be adequate sight distances.

The external access roadways will involve a half road width construction (8m) and two full width constructions (16m and 13.1m) in accordance with the ILP.

INTERNAL CIRCULATION

The proposed access ramps will provide for two-way traffic and will accord with the AS2890.1 & 2 design criteria. The carparking areas have been designed to accord with AS2890.1 and 6 including aisles, ramp width/grade, bays and height clearances and adequate manoeuvring provisions would be available as a result of this design compliance.

SERVICING

Refuse will be removed by Council's refuse collection vehicles standing within the loading areas and details of the turning path assessment for the refuse trucks accessing the loading areas are provided in Appendix D.

Service personnel and small delivery vehicles will be able to utilise the visitor bays while larger vehicles will be able to stand in the loading area in similar manner or on the new access roads as is normal for residential apartment developments of this nature.

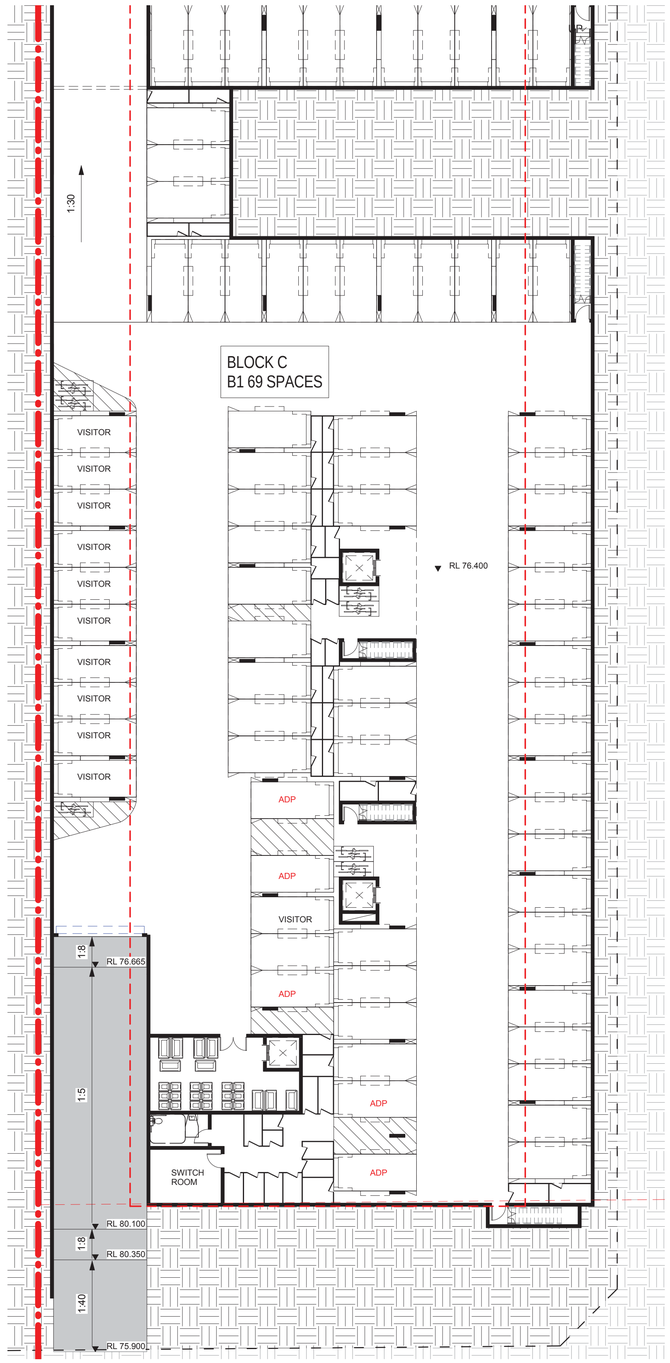
8. CONCLUSION

The proposed residential apartment development on Bringelly Road at Austral has been assessed in relation to the potential vehicle access, parking, traffic and transport implications. This assessment has concluded that:

* the proposed access road system will be suitable and appropriate
* there will be no adverse or unsatisfactory traffic implications
* the proposed parking provision will be adequate and appropriate
* the proposed vehicle access, internal circulation and servicing provisions will be quite satisfactory
* the convenience and accessibility of public transport services will ensure a sustainable development outcome

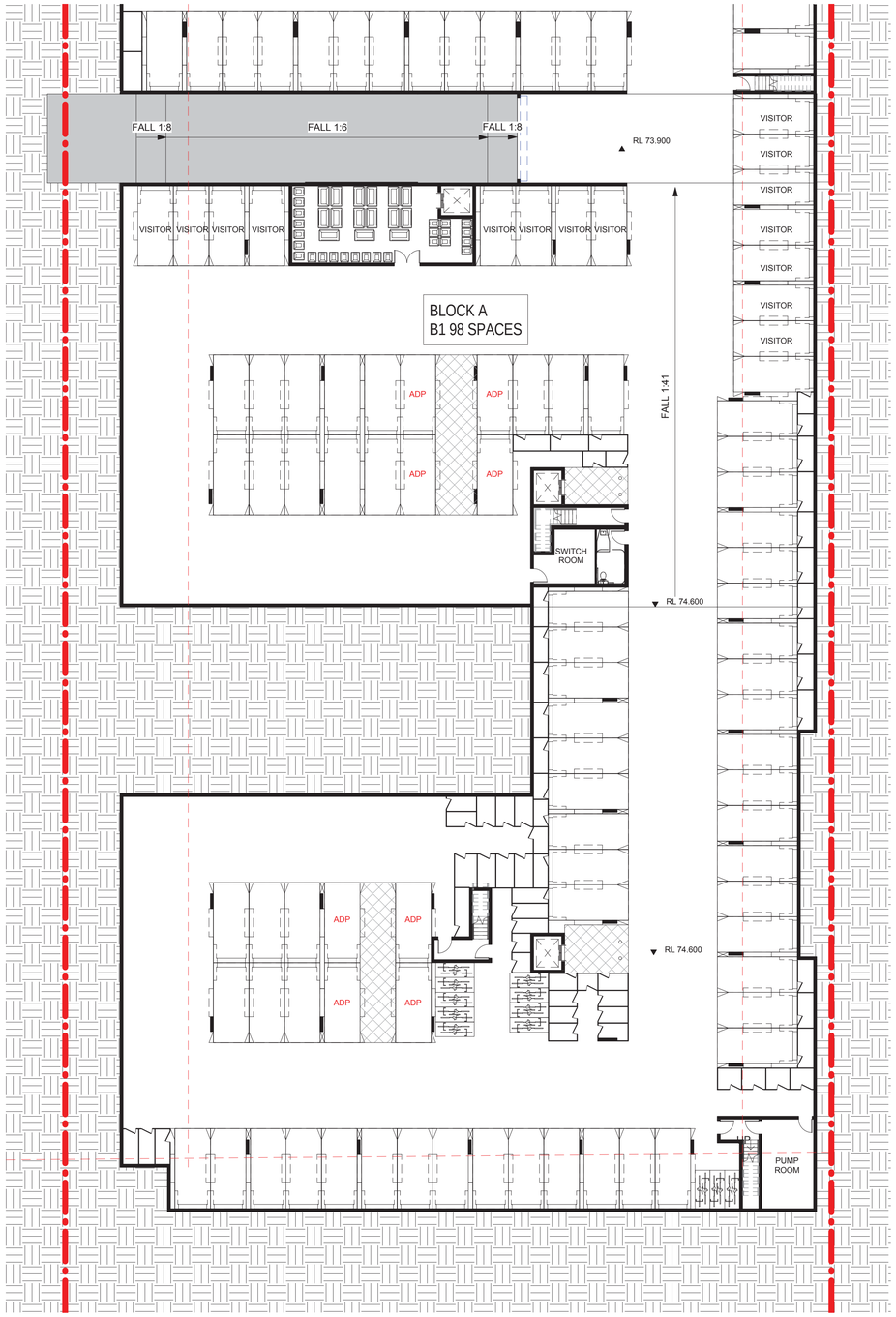
APPENDIX A

ARCHITECTURAL PLANS



1 Lot C-Basement 1

1 : 200



2 Lot A Basement 1

1 : 200

Notes DA:

1. DESIGN RESOLUTION
1.1 The drawings represent general architectural intent for the purpose of this development application only.
1.2 The internal layout is shown indicatively and is subject to further design development.
1.3 The dimensions shown are general only and are subject to further design resolution.
1.4 Location of car park entry point is general only and will be confirmed and dimensioned at later stage.
1.5 Size, shape and position of louvre sun screens is indicative and shown in open and closed positions.
1.6 Ceiling RL (where shown) indicates general ceiling design level only, which does account for services bulkheads or similar partial ceiling protrusions.
1.7 Landscape component is shown indicatively only and subject to further design development at later stage.
1.8 Location of plant, equipment and services on drawings is general and indicative only, and does not include minor elements, such as vent pipes, flues, aerials, etc.

2. GRAPHIC PRESENTATION
2.1 Colours presented on drawings are generic only and indicative of the architectural design intent. Some colour distortion may also occur in the printing process.

3. EXISTING STRUCTURES AND SERVICES
3.1 Extent and location of existing structures and services is according to the available survey information and will need to be verified on site at later stage.
3.2 All unchanged site levels are as per the existing survey information

BLOCK A CAR PARKING RATE CALCULATION			
UNIT TYPE	RATE	UNIT NO.	CONTROL
1BED	1 SPACE	10	10
2BED	1 SPACE	60	60
3BED	1.5 SPACE	4	6
RESIDENTS	-	79	76.5
VISITOR	0.2 SPACE	15	14.8
TOTAL	-	98	91.3

BLOCK C CAR PARKING RATE CALCULATION			
UNIT TYPE	RATE	UNIT NO.	CONTROL
1BED	1 SPACE	10	10
2BED	1 SPACE	41	41
3BED	1.5 SPACE	4	6
RESIDENTS	-	55	57
VISITOR	0.2 SPACE	11	11
TOTAL	-	69	68

CAR PARKING NUMBER BLOCK A & C			
PARKING TYPE	A	C	TOTAL
RESIDENTS	72	52	124
RESIDENTS (ADP)	7	6	13
VISITOR	15	11	26
TOTAL	94	69	163

Date	Rev.	Description
11/04/2017	A	For Pre-DA Meeting

CLIENT

DIRECT SOLICITORS

PROJECT

RESIDENTIAL DEVELOPMENT

484-488 BRINGELLY ROAD, AUSTRAL

ARCHITECT

DREAMSCAPES ARCHITECTS

Planning . Architecture . Interior . Landscapes

The Silver Arc Dreamscapes Pty Ltd

Address The Era / No. 1 Pacific Place,
Suite 209, 7 Railway Street, Chatswood NSW 2067
Phone (02) 80688318
Email: info@thearc.com.au
Website: www.thearc.com.au

ACN 169 027 936

Australia. Singapore. Hong Kong. China

TITLE

Basement 1 Plan-Lot A & C

Scale 1 : 100

0 2 4 6

STAGE: Project Status

DATE: 11/04/2017

DRAWING SCALE: 1 : 200

ALL DIMENSIONS IN mm - DO NOT SCALE

SHEET SIZE: A1

PROJECT NO.	DRAWING NO.	REVISION
17001	A-2-A-00	A

2/06/2017 7:38:52 PM

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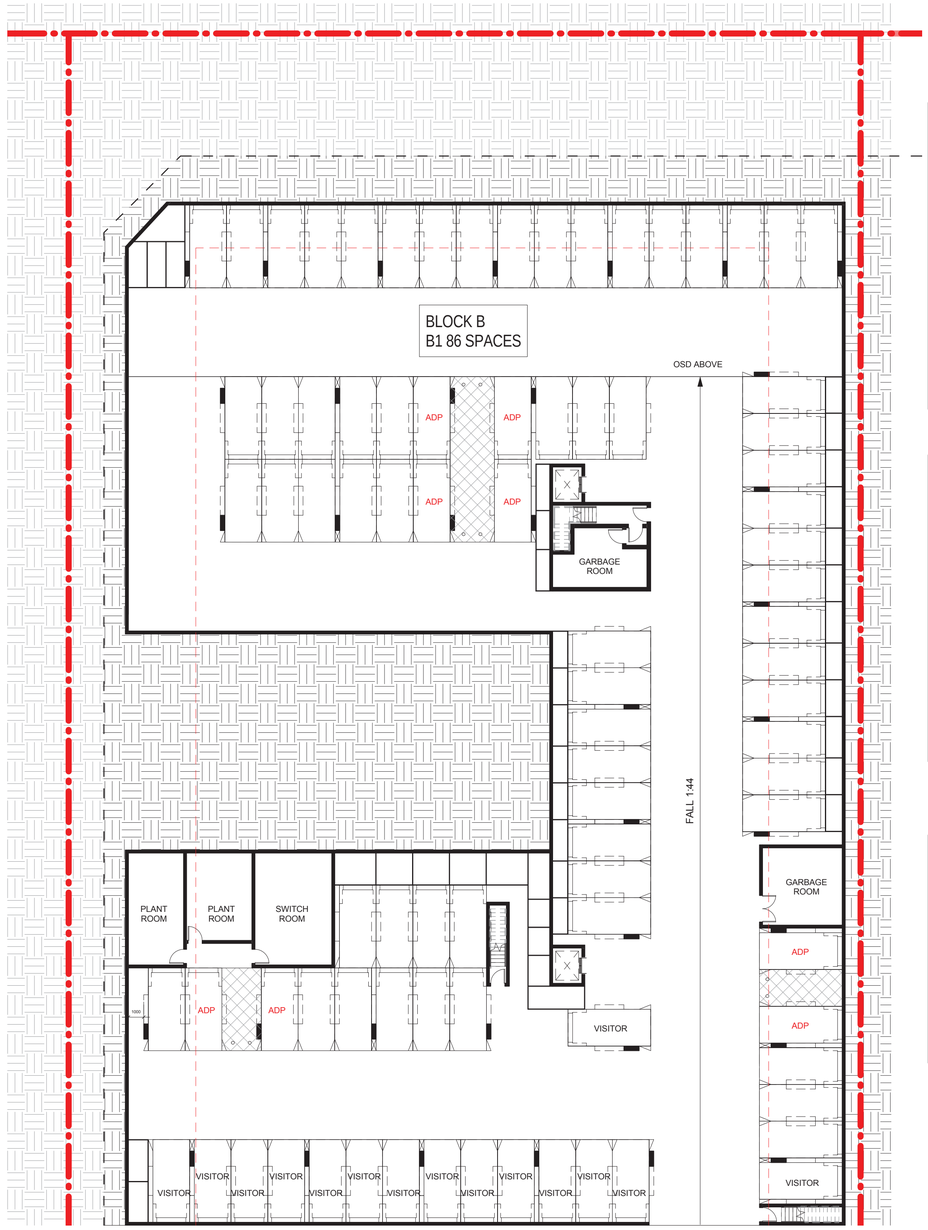
1 Lot D-Basement 1

1 : 200



2 Lot B-Basement 1

1 : 200

BLOCK B CAR PARKING RATE CALCULATION			
UNIT TYPE	RATE	UNIT NO.	CONTROL
1BED	1 SPACE	10	10
2BED	1 SPACE	60	59
3BED	1.5 SPACE	4	6
RESIDENTS	-	73	76.5
VISITOR	0.2 SPACE	15	14.8
TOTAL	-	86	91.3

BLOCK D CAR PARKING RATE CALCULATION			
UNIT TYPE	RATE	UNIT NO.	CONTROL
1BED	1 SPACE	10	10
2BED	1 SPACE	42	42
3BED	1.5 SPACE	4	6
RESIDENTS	-	59	58
VISITOR	0.2 SPACE	11	11.2
TOTAL	-	68	69.2

CAR PARKING NUMBER BLOCK B & D			
PARKING TYPE	B	D	TOTAL
RESIDENTS	67	53	120
RESIDENTS (ADP)	6	6	12
VISITOR	15	11	26
TOTAL	88	70	158

Notes DA:

1. DESIGN RESOLUTION
1.1 The drawings represent general architectural intent for the purpose of this development application only.
1.2 The internal layout is shown indicatively and is subject to further design development.
1.3 The dimensions shown are general only and are subject to further design resolution.
1.4 Location of car park entry point is general only and will be confirmed and dimensioned at later stage.
1.5 Size, spacing and position of louvre sun screens is indicative and shown in open and closed positions.
1.6 Ceiling RL (where shown) indicates general ceiling design level only, which does account for services bulkheads or similar partial ceiling protrusions.
1.7 Landscape component is shown indicatively only and subject to further design development at later stage.
1.8 Location of plant, equipment and services on drawings is general and indicative only, and does not include minor elements, such as vent pipes, flues, aerials, etc.

2. GRAPHIC PRESENTATION
2.1 Colours presented on drawings are generic only and indicative of the architectural design intent. Some colour distortion may also occur in the printing process.

3. EXISTING STRUCTURES AND SERVICES
3.1 Extent and location of existing structures and services is according to the available survey information and will need to be verified on site at later stage.
3.2 All unchanged site levels are as per the existing survey information

Date	Rev.	Description
11/04/2017	A	For Pre-DA Meeting

CLIENT

DIRECT SOLICITORS

PROJECT

RESIDENTIAL DEVELOPMENT

484-488 BRINGELLY ROAD, AUSTRAL

ARCHITECT

DREAMSCAPES ARCHITECTS

Planning . Architecture . Interior . Landscapes

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TITLE

Basement 1 Plan-Lot B & D

Scale 1 : 100

0 2 4 6

STAGE: Project Status

DATE: 11/04/2017

DRAWING SCALE: 1 : 200

ALL DIMENSIONS IN mm - DO NOT SCALE

SHEET SIZE: A1

PROJECT NO.	DRAWING NO.	REVISION
17001	A-2-A-06	A

2/06/2017 7:39:15 PM

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Date	Rev.	Description
11/04/2017	A	For Pre-DA Meeting

1 Lot C-Ground Floor
1 : 200

2 Lot A-Ground Level
1 : 200

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484-488 BRINGELLY ROAD, AUSTRAL

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TITLE

Ground Floor Plan-Lot A & C

Scale 1 : 100
0 2 4 6

STAGE: Project Status
DATE: 11/04/2017
DRAWING SCALE: 1 : 200
ALL DIMENSIONS IN mm - DO NOT SCALE
SHEET SIZE: A1
PROJECT NO. 17001
DRAWING NO. A-2-A-01
REVISION A

2/06/2017 7:38:57 PM

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1 Lot D-Ground Level
1 : 200

2 Lot B-Ground Level
1 : 200

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TITLE

Ground Floor Plan-Lot B & D

Scale 1 : 100
0 2 4 6

STAGE:	Project Status
DATE:	11/04/2017
DRAWING SCALE: 1 : 200	SHEET SIZE: A1
ALL DIMENSIONS IN mm - DO NOT SCALE	

PROJECT NO.	DRAWING NO.	REVISION
17001	A-2-A-07	A

2/06/2017 7:39:20 PM

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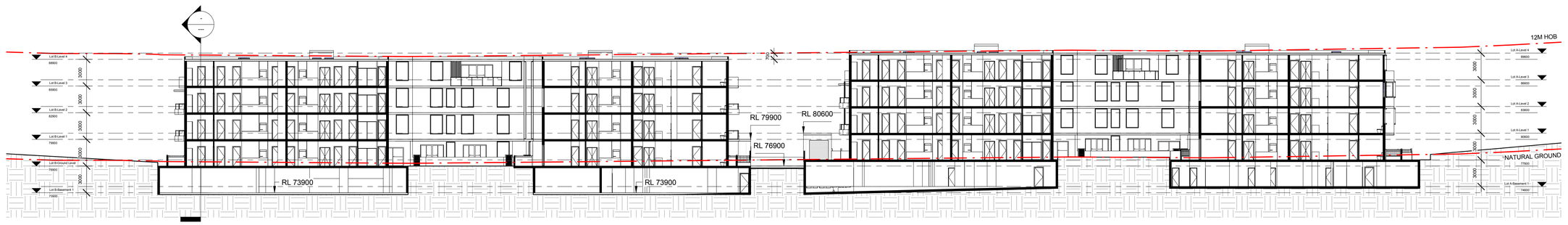

2 Section 02
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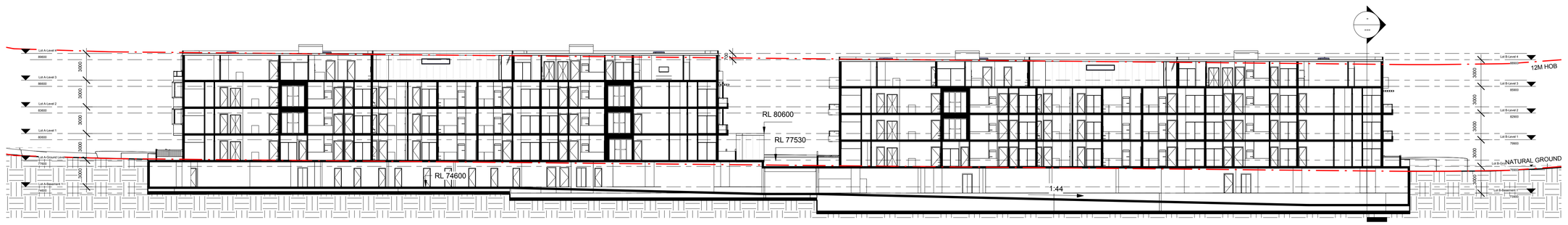

3 Section 03
1 : 250

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DIRECT SOLICITORS

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RESIDENTIAL DEVELOPMENT

484-488 BRINGELLY ROAD, AUSTRAL

ARCHITECT

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ACN 169 027 936

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TITLE

Section

Scale 1 : 100
0 2 4 6

STAGE: Project Status	
DATE: 11/04/2017	
DRAWING SCALE: 1 : 250	SHEET SIZE: A1
ALL DIMENSIONS IN mm - DO NOT SCALE	
PROJECT NO. 17001	DRAWING NO. A-3-A-00
	REVISION A

22/06/2017 10:53:00 AM

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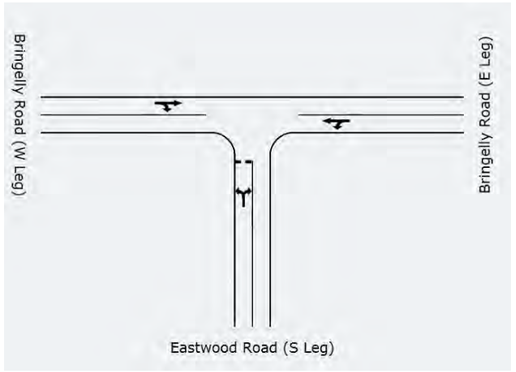
APPENDIX B

PROPOSED BRINGELLY ROAD UPGRADING

2016: Bringelly Road – Eastwood Road to Camden Valley Way



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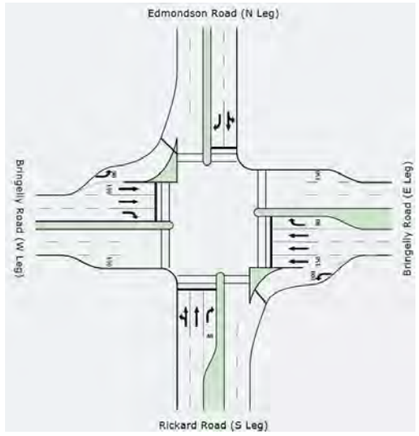

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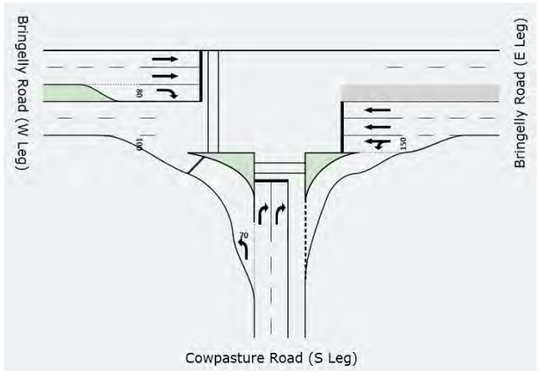
PM	C	0.769	110.5	WB T



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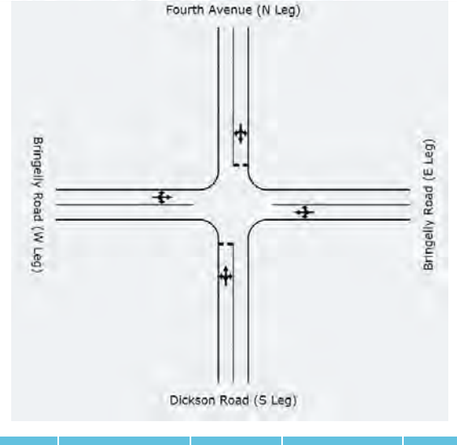
PM	B	0.707	111.2	WB T



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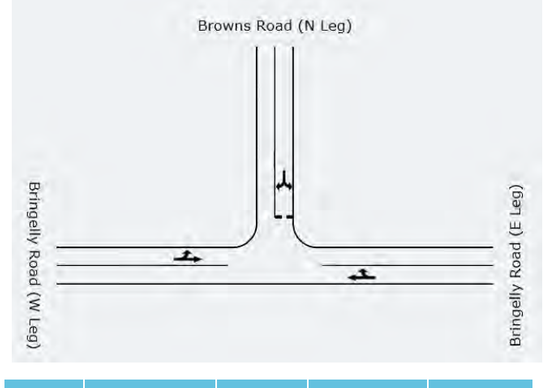
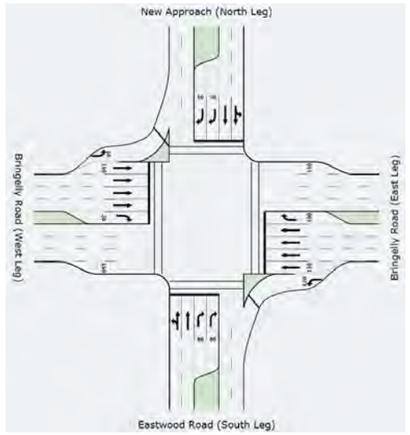
PM	A	0.806	46.8	NB



	Int. LoS	DoS	Worst Q	App
AM	A	0.427	35.2	WB
PM	A	0.490	67.1	WB

AECOM

2031: Bringelly Road – Eastwood Road to Camden Valley Way



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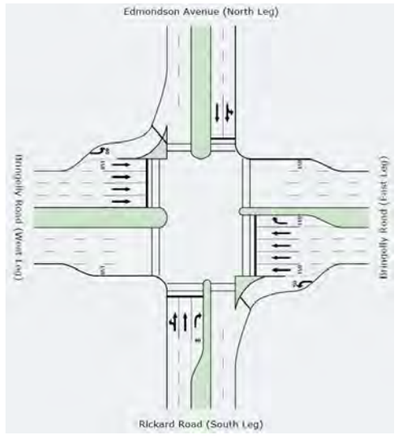
PM	D	0.977	210.6	WB T



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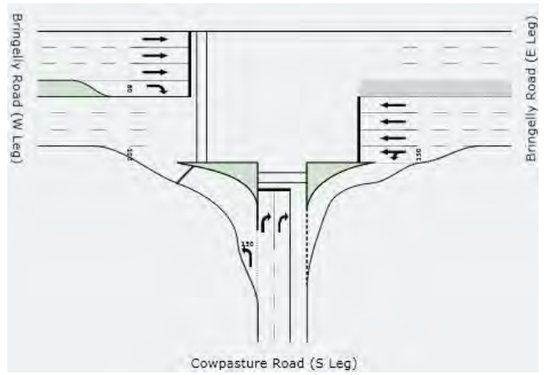
PM	C	0.635	173.8	WB T



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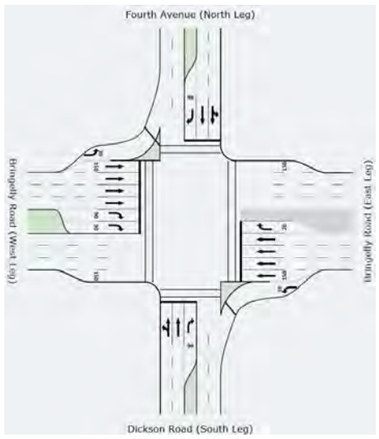

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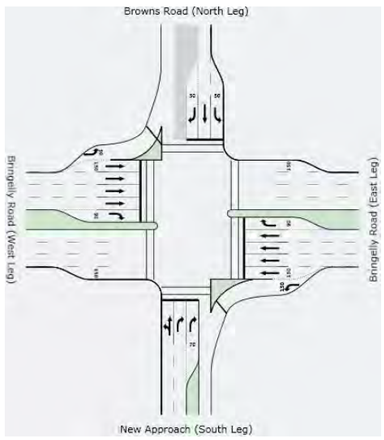

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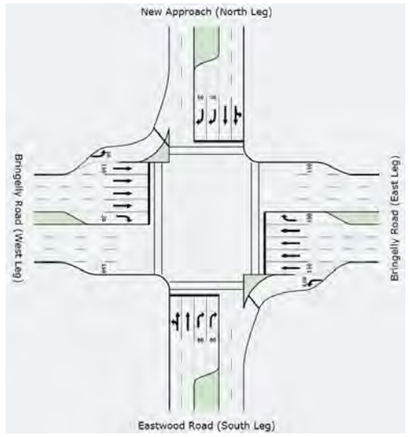
PM	D	0.936	418.3	WB T

2036: Bringelly Road – Eastwood Road to Camden Valley Way



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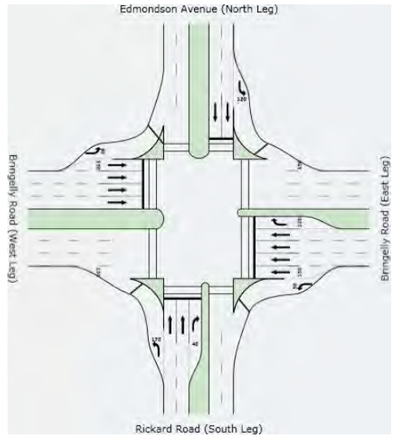

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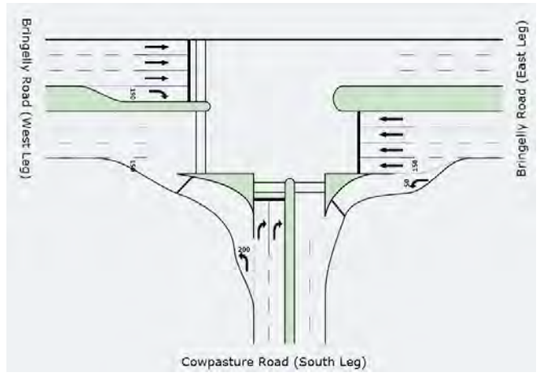

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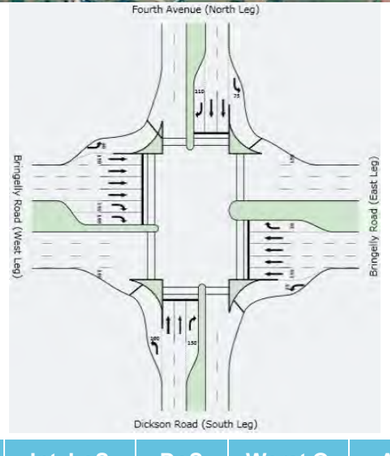

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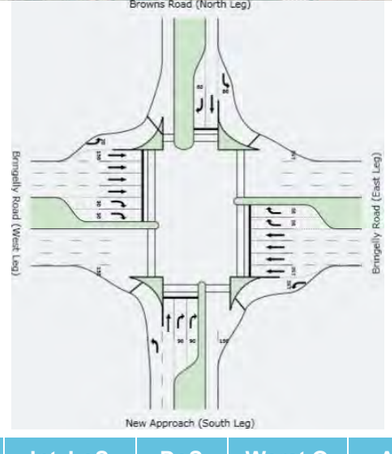

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AECOM

APPENDIX C

EXTRACTS FROM DCP

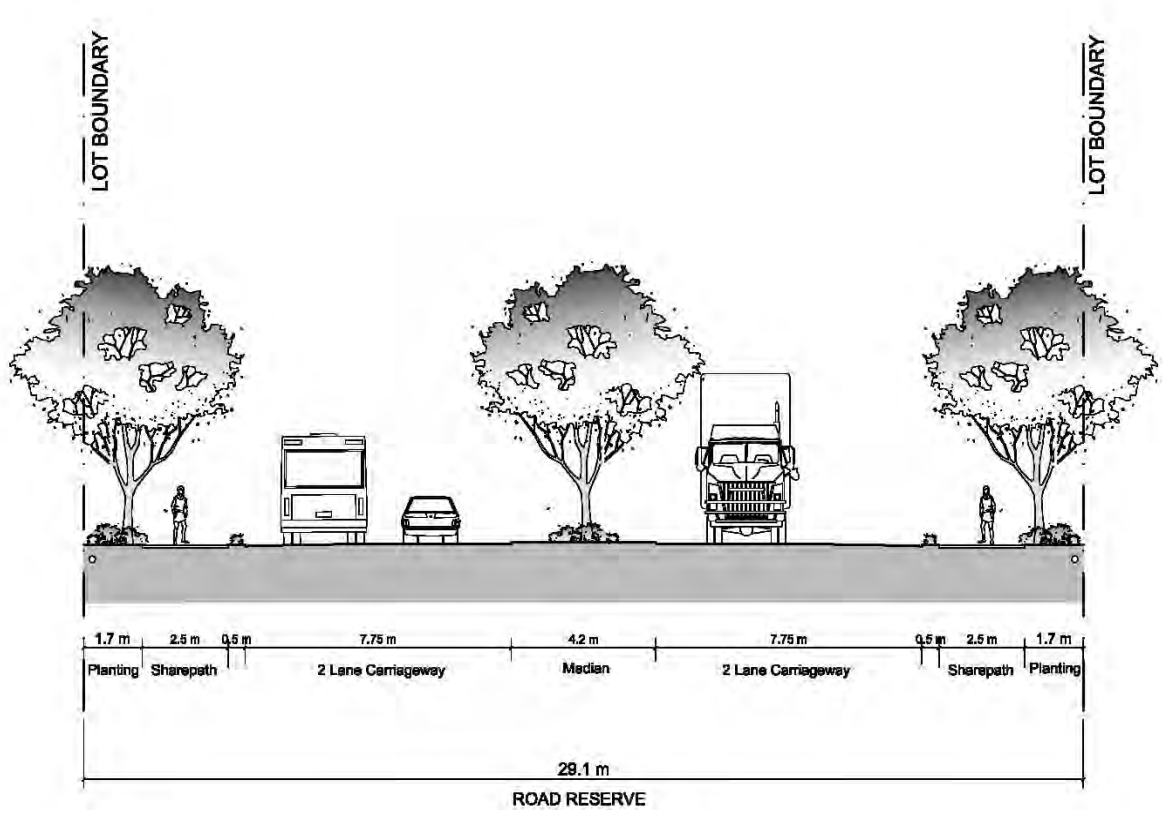

Figure 3-11: Typical sub-arterial road

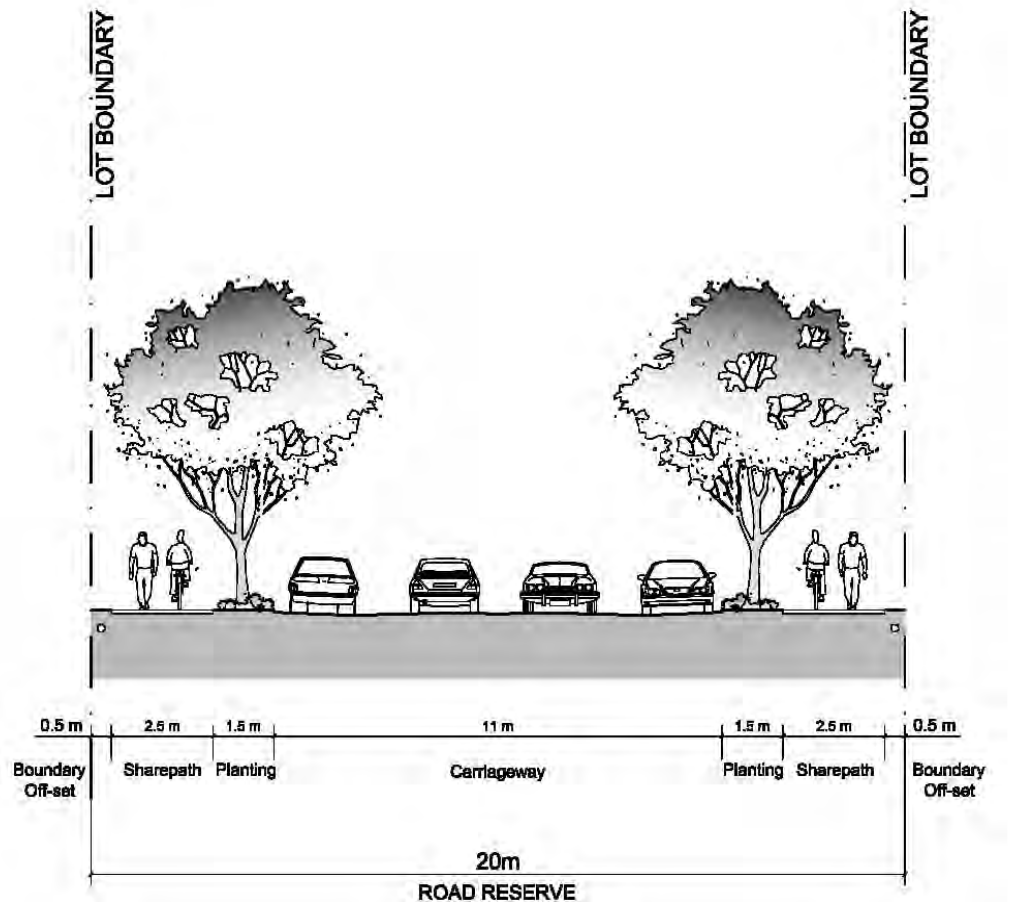

Figure 3-12: Typical collector road

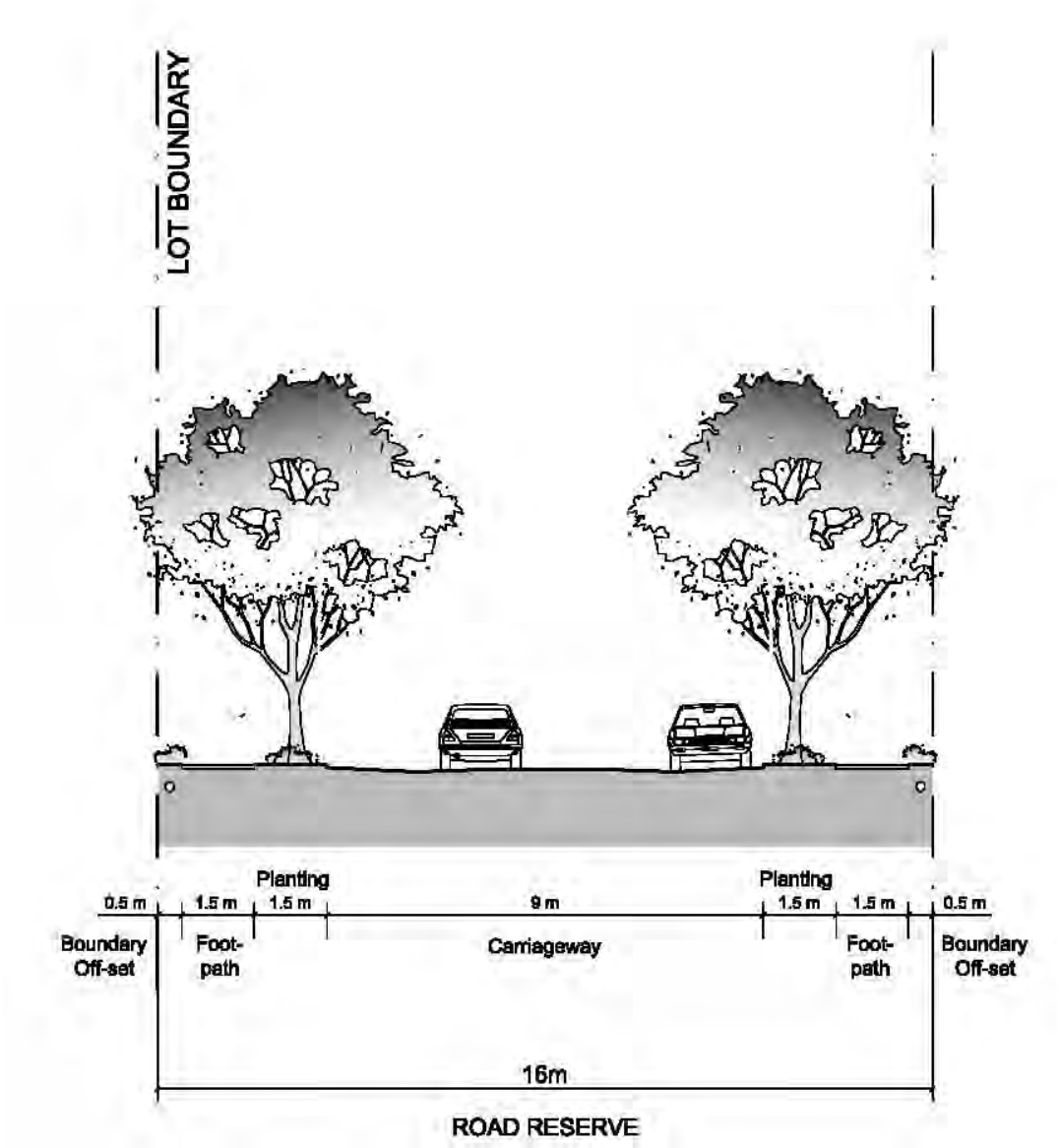

Figure 3-13: Typical local street

8. Variations to the residential street network as permitted under control 7 above will only be approved by Council where the applicant can demonstrate to Council's satisfaction that the proposal:

- will not detrimentally impact on access to adjoining properties,
- provides for the management of stormwater to drain to Council's trunk drainage network, without negative impacts on other properties,
- will not impede the orderly development of adjoining properties in accordance with the relevant Precinct Plan and this Development Control Plan, and
- does not restrict the ability to provide water, sewer, electricity and other essential services to the development or to development on adjoining properties.

9. For changes to the proposed road system which Council considers minor, Council may write to affected property owners and consider any comments of those persons before determining the application. Applicants wishing to amend the proposed road pattern are advised to liaise with affected adjoining owners prior to the submission of the Development Application. By obtaining the prior agreement of adjoining owners to proposed road pattern changes, the time required by Council to determine the application may be reduced.

APPENDIX D

TURNING PATH ASSESSMENT

LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.

SWEPT PATH ANALYSIS OF A 10.2m REFUSE VEHICLE ENTERING THE SITE

SP 1

LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.

N

SWEPT PATH ANALYSIS OF A 10.2m REFUSE VEHICLE EXITING THE SITE

SP 2

LEGEND

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N

SWEPT PATH ANALYSIS OF A 10.2m REFUSE VEHICLE ENTERING THE SITE

SP 3

LEGEND

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N

SWEPT PATH ANALYSIS OF A 10.2m REFUSE VEHICLE EXITING THE SITE

SP 4