

Proposed Subdivision & Residential Development

**190 Croatia Avenue,
Edmondson Park**

TRAFFIC AND PARKING ASSESSMENT REPORT

18 September 2018

Ref 17474

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants 

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1. INTRODUCTION

This report has been prepared to accompany a development application to Liverpool City Council for a residential development proposal located at 190 Croatia Avenue, Edmondson Park (Figures 1 and 2).

The proposed development involves the demolition of the existing dwelling house and associated outbuildings on the site, the subdivision of the site into development blocks, the construction of new internal roads and laneways and the construction of a new residential apartment development, comprising three buildings.

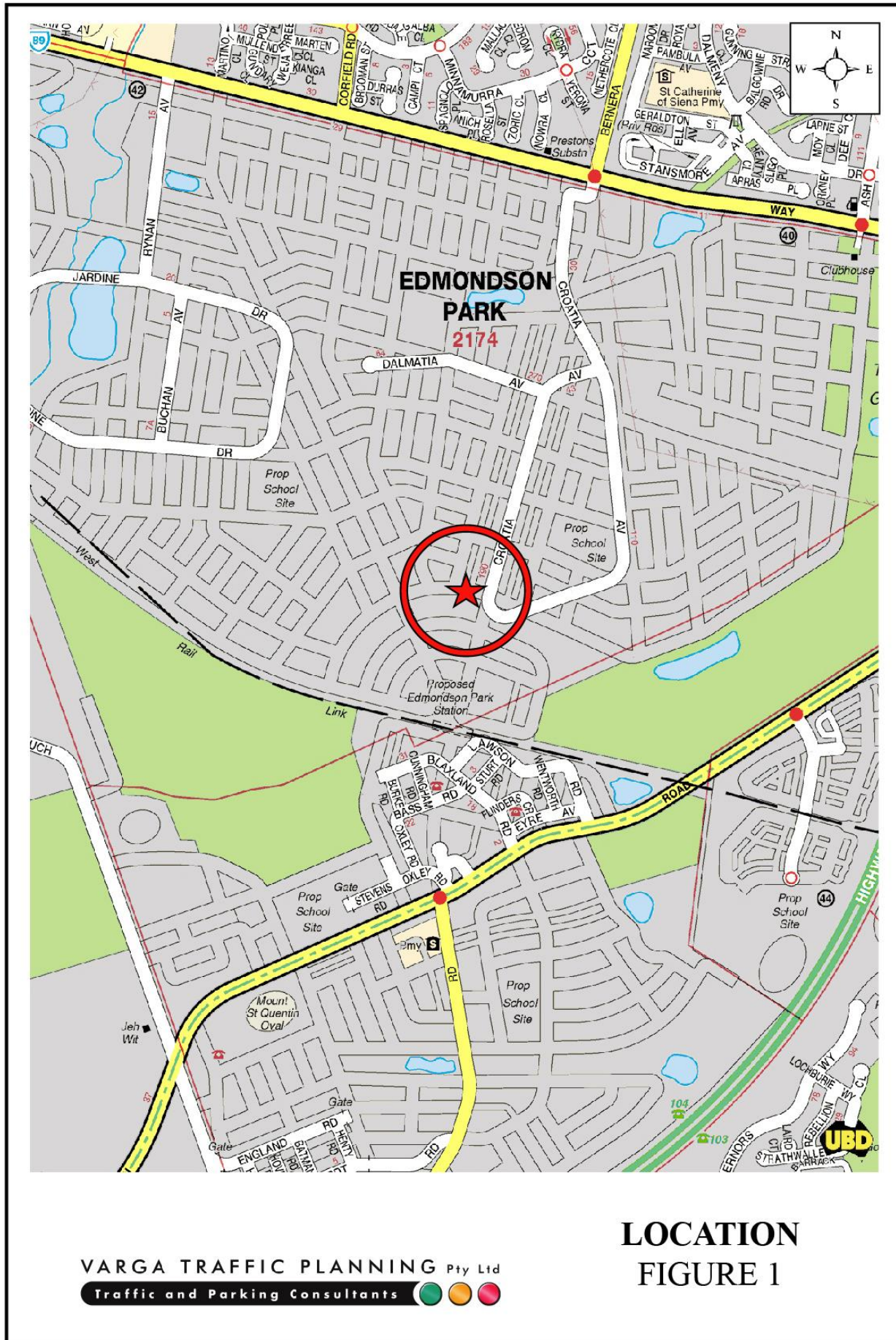
Off-street parking is to be provided in two separate two-level basement car parking areas in accordance with Council's requirements.

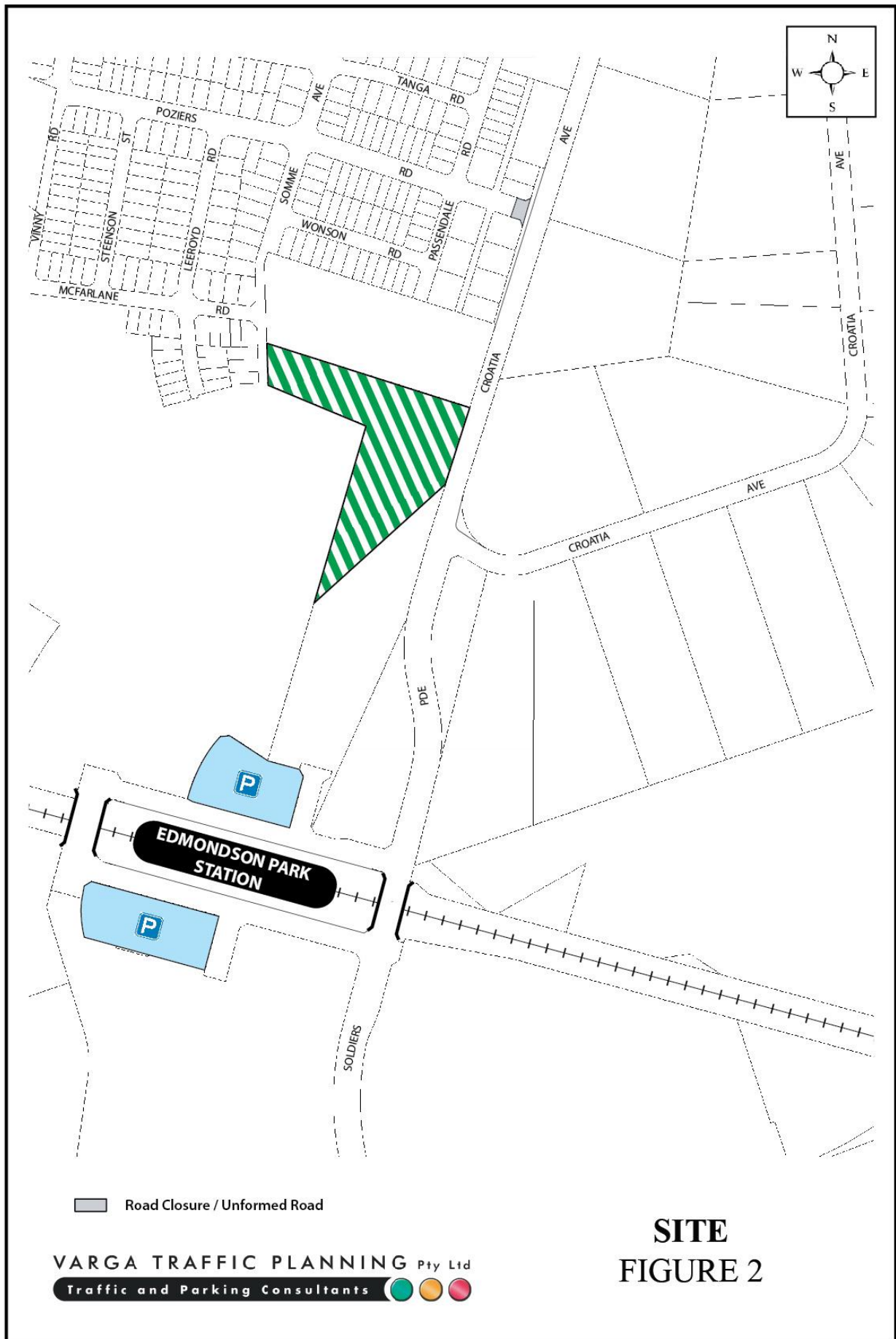
The subject site is located within the "Edmondson Park" precinct as outlined in the *Liverpool Development Control Plan 2008 – Part 2.11: Land Subdivision and Development in Edmondson Park* document which envisages creating future housing needs for the changing community, reducing the environmental impact and enabling greater social interaction. New local roads are to be constructed to serve these future developments which will ultimately connect to the existing road network, in accordance with the *Liverpool DCP 2008*.

The purpose of this report is to assess the traffic and parking implications of the development proposal and to that end this report:

- describes the site and provides details of the development proposal
- reviews the road network in the vicinity of the site
- estimates the traffic generation potential of the development proposal
- assesses the traffic implications of the development proposal in terms of road network capacity

- reviews the geometric design features of the proposed car parking and loading facilities for compliance with the relevant codes and standards
- assesses the adequacy and suitability of the quantum of off-street car parking and loading provided on the site.





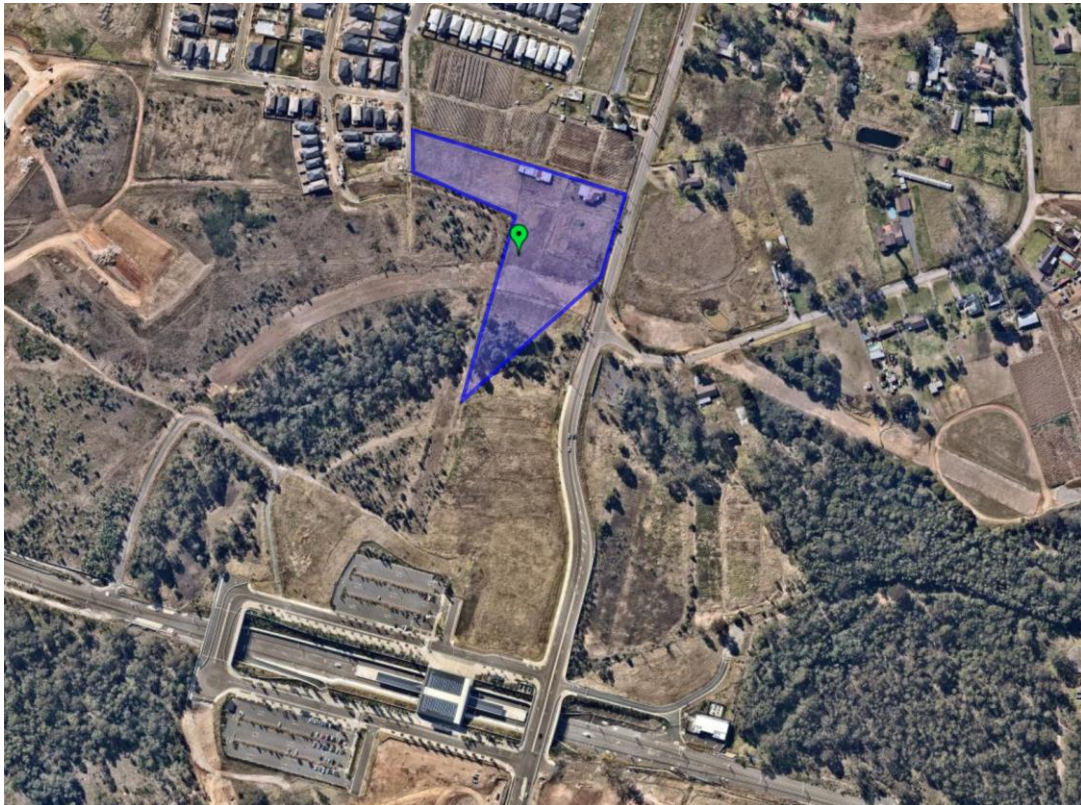
2. PROPOSED DEVELOPMENT

Site

The subject site is located on the western side of Croatia Avenue, extending through to Somme Avenue and is situated 500m north from Edmondson Park Railway Station. The site has street frontages approximately 82m in length to Croatia Avenue, approximately 42m in length to Somme Avenue and occupies an area of approximately 20.23ha.

The subject site is currently occupied by a single dwelling house, with a number of associated outbuildings. Vehicular access to the site is provided via a single driveway located at the northern end of the Croatia Avenue site frontage.

The southern portion of the site is currently zoned *RE1 Public Recreation* and *SP2 Infrastructure* whilst the northern portion of the site is currently zoned *R1 General Residential*. The new local roads within the surrounding areas are yet to be completed, as shown in the recent aerial image below. The aerial image also clearly delineates the future east-west road reserve through the site as well as Edmondson Park Station to the south.



Source: Nearmap

Edmondson Park

The site is located within the “Edmondson Park” precinct as outlined in the *Liverpool Development Control Plan 2008 – Part 2.11: Land Subdivision and Development in Edmondson Park* document which envisages creating future housing needs for the changing community, reducing the environmental impact and enabling greater social interaction.

The “Edmondson Park” redevelopment also makes provision for the construction of a new local road network which connects to the existing arterial road network at several locations.

In addition, Edmondson Park aims to create a primarily residential neighbourhood located and focused around Neighbourhood Centres or Town Centres which will accommodate a mixture of residential, commercial and retail uses. The Town Centre will provide a full range of high density residential, commercial and retail uses, as part of the South West Rail Link.

Extracts from the *Liverpool DCP 2008* document illustrating the “Edmondson Park” Indicative Layout Plan, Possible Public Transport Routes, Fixed Roads, Street Types & Bicycle Network plans are reproduced in the following pages.

Proposed Development

The proposed development involves the demolition of the existing dwelling house and associated outbuildings on the site, the subdivision of the site into development blocks and the construction of a new residential apartment development, comprising three buildings.

A total of 135 residential apartments are proposed in the new development as follows:

	Building A	Building B	Building C	TOTAL
1 bedroom dwelling	14	10	12	36
2 bedroom dwelling	20	40	22	82
3 bedroom dwelling	5	6	6	17
TOTAL UNITS	39	56	40	135

Off-street parking is proposed for a total of 217 cars, comprising 183 residential spaces and 34 visitor spaces, in accordance with Council’s requirements as follows:

	Buildings A & B	Building C	TOTAL
Residential spaces	123	60	183
Visitor spaces	27	7	34
TOTAL SPACES	150	67	217

As noted in the foregoing, the proposed residential development also includes the construction of a number of new local roads and laneways through the site in accordance with Council's *Liverpool DCP 2008* requirements, with a laneway road reservation width of 7m and a typical road carriageway width of 6m, as shown in the *DCP 2008* extract below.

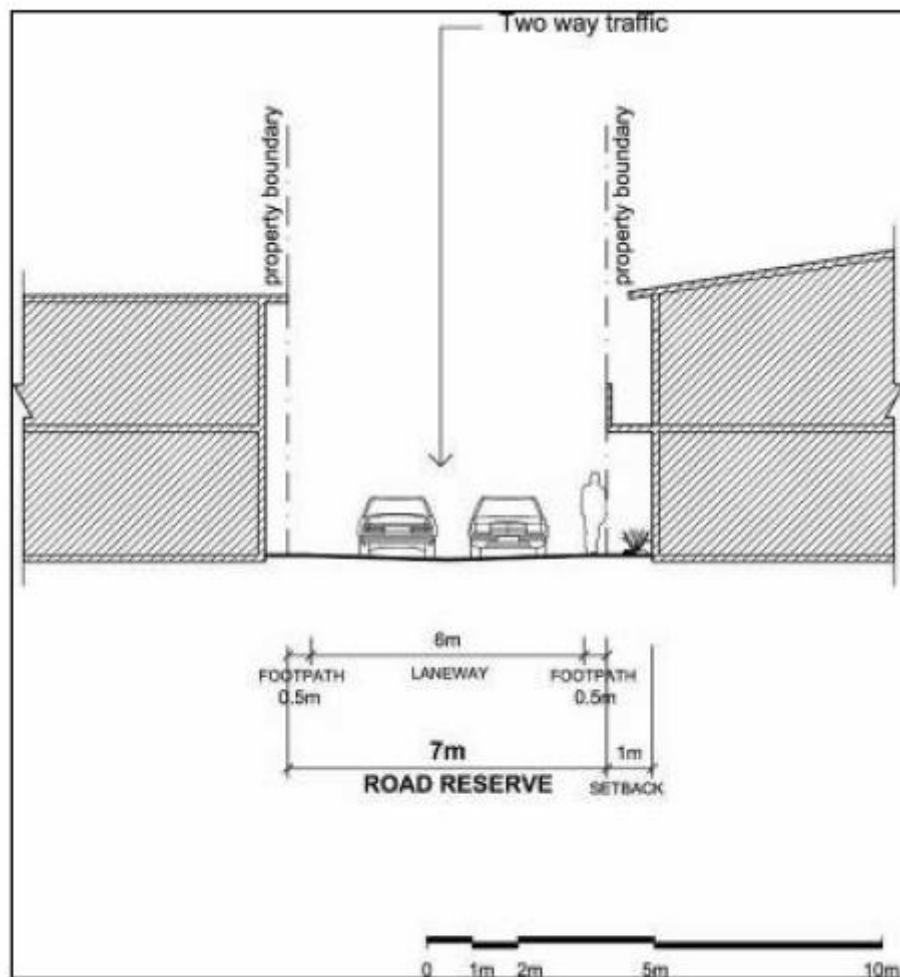
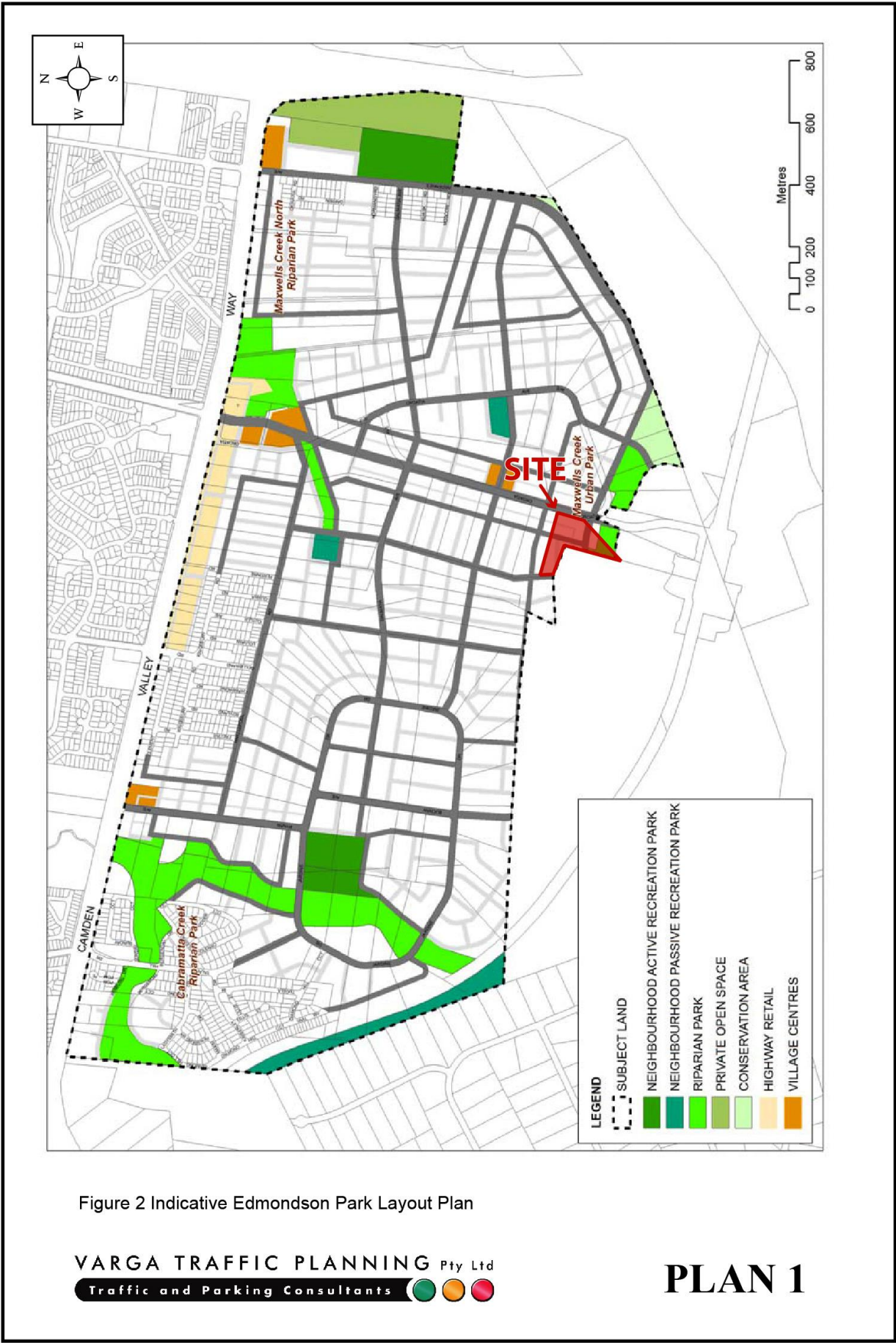


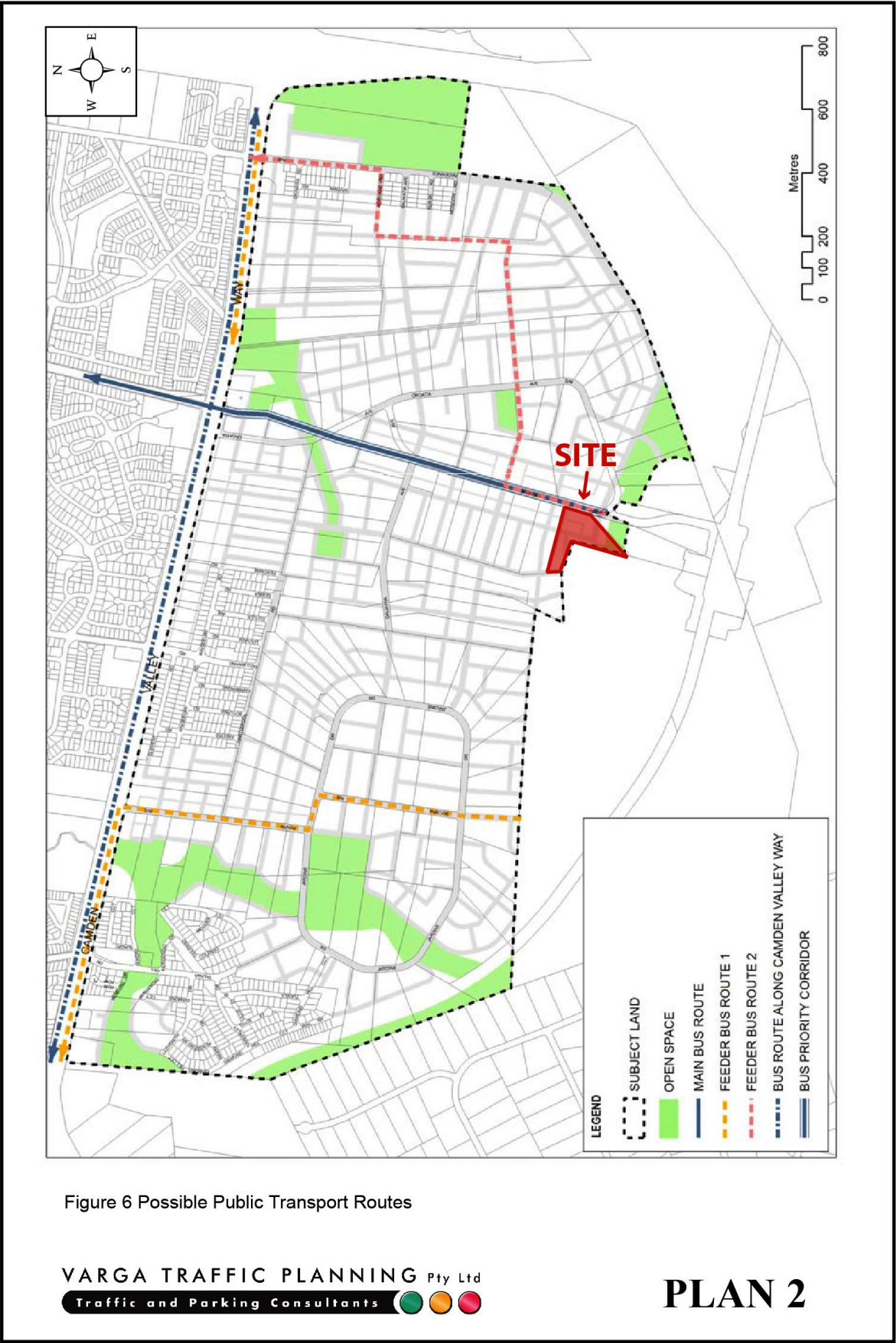
Figure 16 Residential Laneway

Vehicular access to the respective car parking facilities is to be provided via two new two-way driveways located off the future public laneway network through the site.

Loading/servicing for the proposed development is expected to be undertaken by a variety of commercial vehicles up to and including 9.5m long rigid trucks. A loading area is to be located on the eastern side of the proposed Costello Lane, via an indented bay along Buildings A and B. This loading area is to service Buildings A, B and C

Plans of the proposed development have been prepared by *Mosca Pserras Architects* and are reproduced in the following pages.





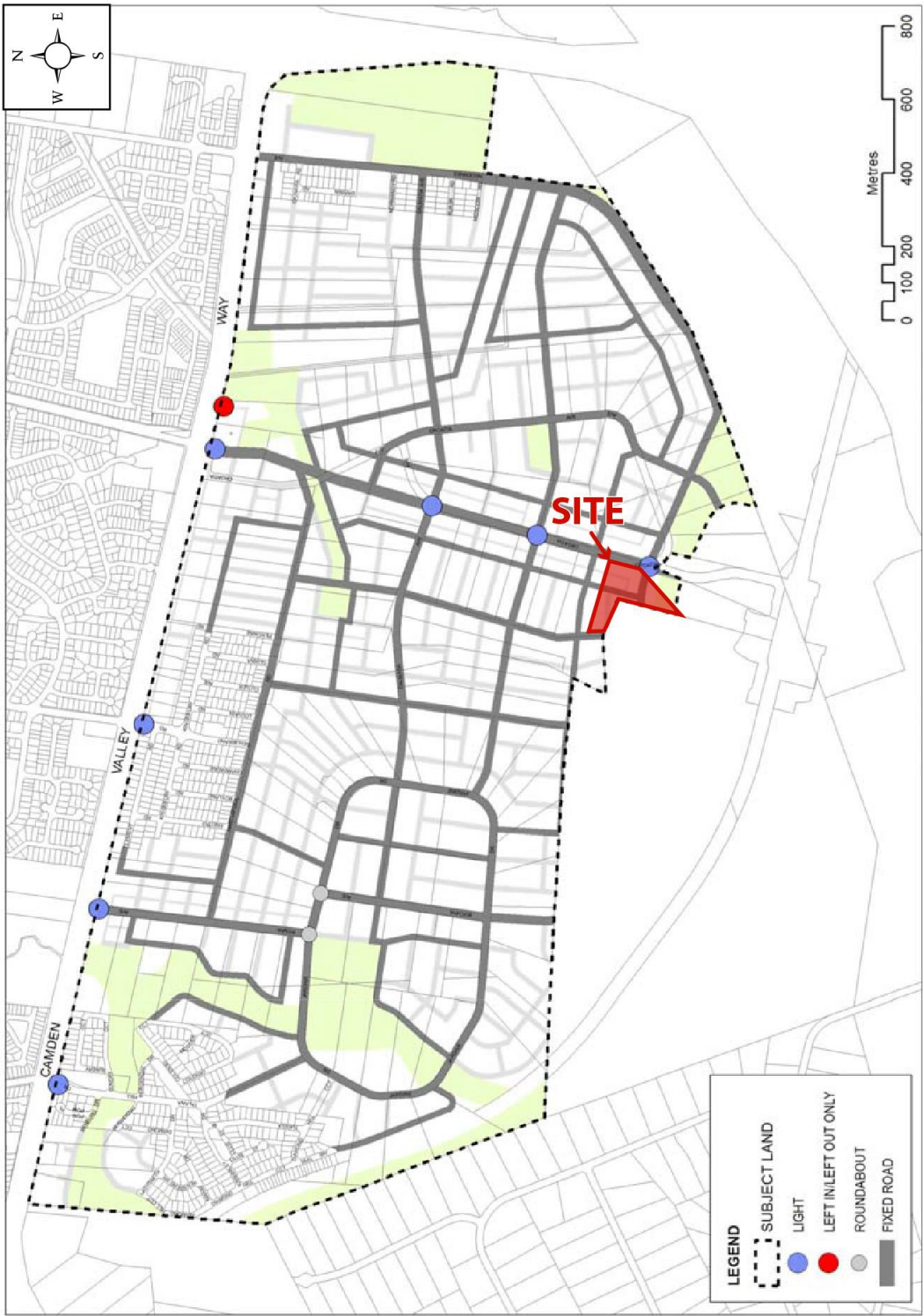
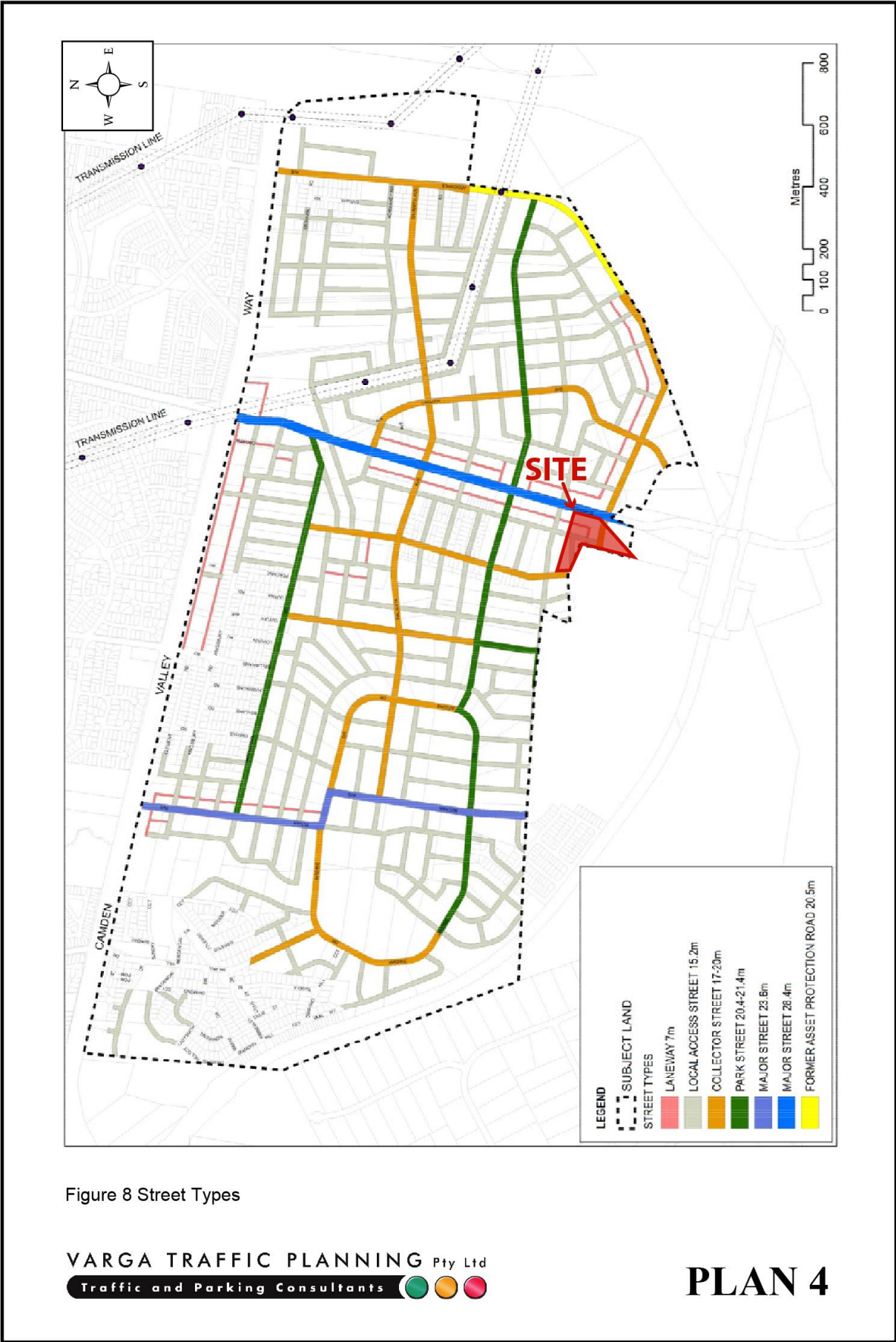
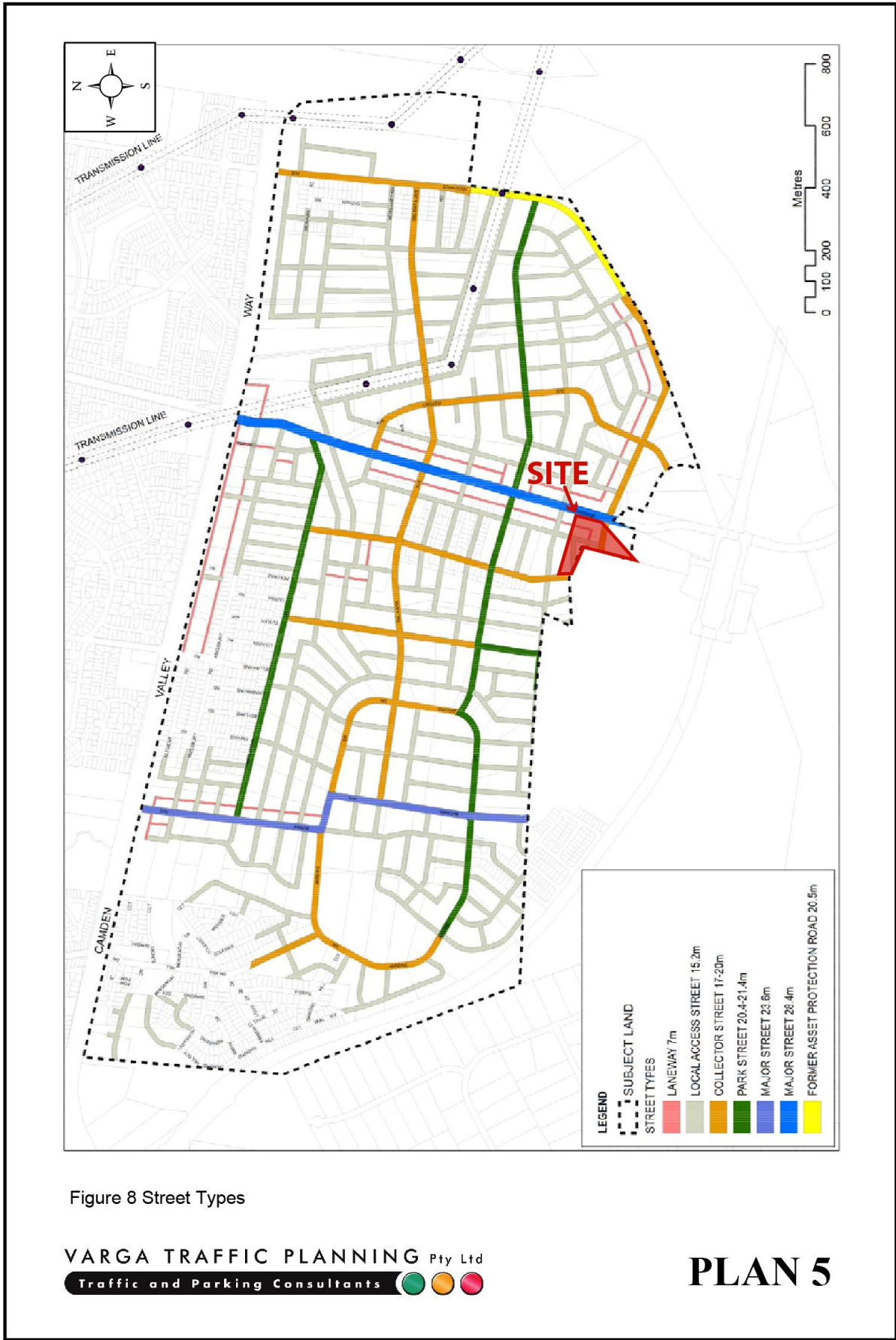


Figure 7 Fixed Roads







BASEMENT 2
1:200

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key plan

notes:

unrecorded

no.	description	date
1	Issue for construction	15/11/17
2	Issue for construction	15/11/17
3	Issue for construction	15/11/17
4	Issue for construction	15/11/17
5	Issue for construction	15/11/17
6	Issue for construction	15/11/17
7	Issue for construction	15/11/17
8	Issue for construction	15/11/17
9	Issue for construction	15/11/17
10	Issue for construction	15/11/17



project: RESIDENTIAL DEVELOPMENT
location: 170 CROATIA AVE, EDMONDSON PARK
client: CROATIA 88 PTY LTD
drawing title: Basement 2
scale: 1:200 A3
sheet no.: 17010
drawing no.: AR05
date: 15/11/17
author: [signature]
checked: [signature]
drawn: [signature]





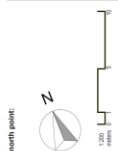


- ☐ this drawing is copyright and the property of the author, and must not be reproduced, copied or used without the authority of the artist/patent architect.
- ☐ larger scale drawings and written dimensions take precedence.
- ☐ do not scale from drawing
- ☐ all dimensions to be checked on site before commencement of work.
- ☐ all discrepancies to be brought to the attention of the author.

Revision	Description
B1	Consultant Initial
P3	Consultant Initial
A	Development A

notes:

key plan:



3. TRAFFIC ASSESSMENT

Road Hierarchy

The road hierarchy allocated to the road network in the vicinity of the site by the Roads and Maritime Services is illustrated on Figure 3.

The M5 Motorway is classified by the RMS as a *State Road* and provides the key east-west road link in the area. It typically carries three traffic lanes in each direction in the vicinity of the site, with opposing traffic flows separated by a central median island. All intersections with the M5 Motorway are grade-separated.

Camden Valley Way is also classified by the RMS as a *State Road* and provides another key east-west road link in the area. It typically carries two traffic lanes in each direction, with opposing traffic flows separated by a central concrete median island. Additional lanes are provided at key intersections to accommodate left/right-turning movements.

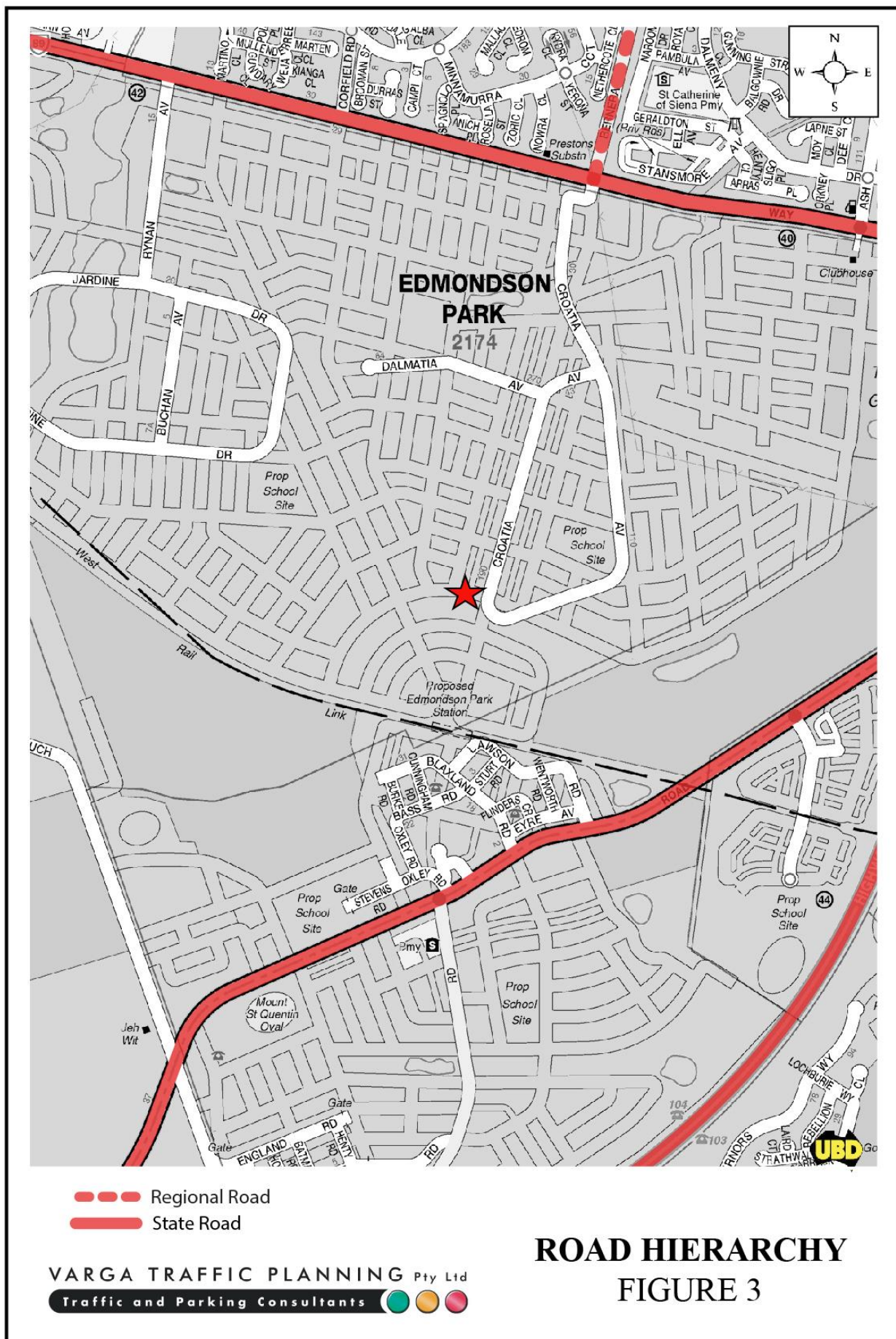
Campbelltown Road is also classified by the RMS as a *State Road* and provides another key east-west road link in the area. It typically carries one traffic lanes in each direction in the vicinity of the site with turning bays provided at key locations.

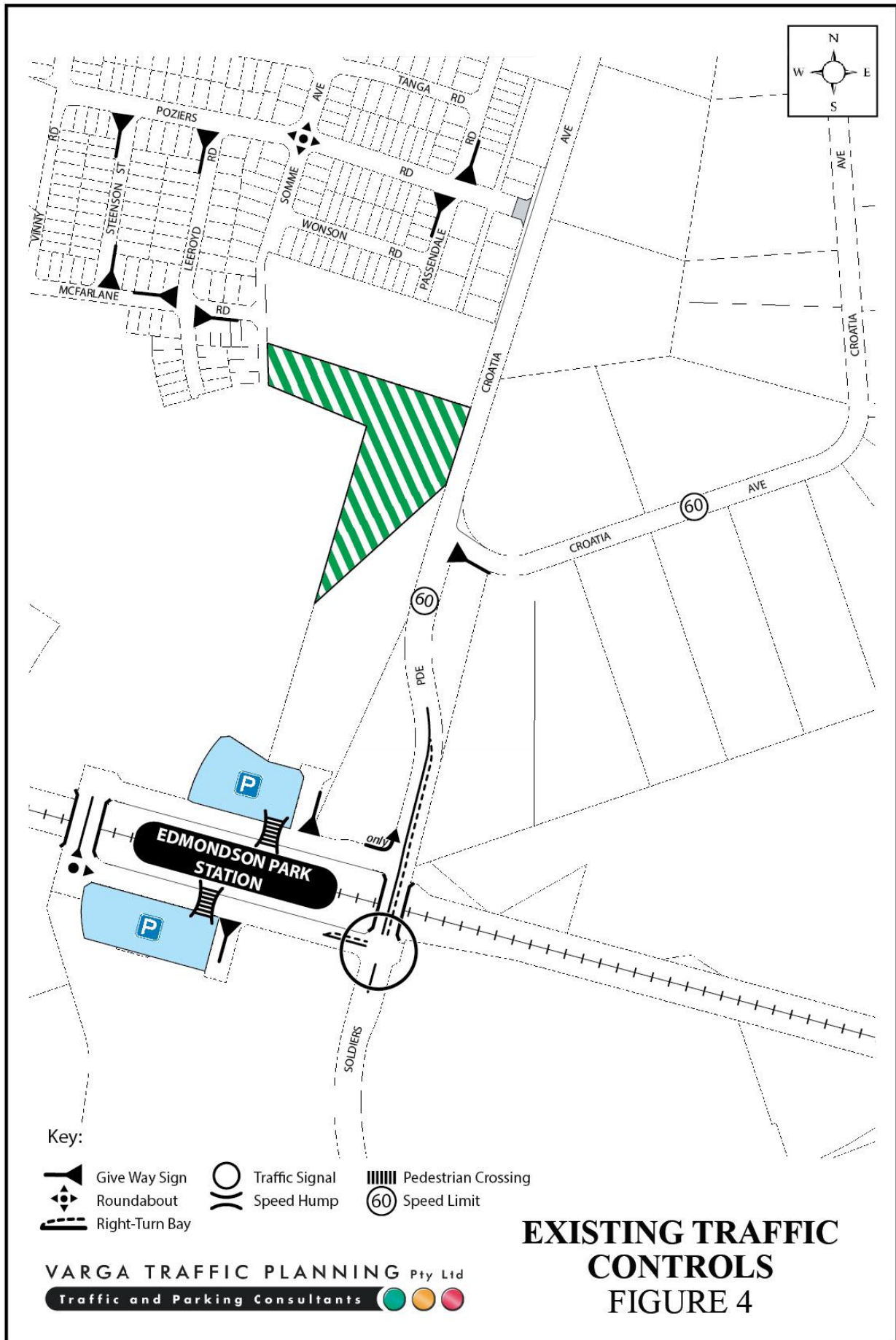
Croatia Avenue is currently a local, unclassified rural road which is primarily used to provide vehicular and pedestrian access to frontage properties. Kerbside parking is generally permitted on both sides of the road. It is expected that Croatia Avenue will be upgraded and realigned to a *major road* as part of the precinct works, ultimately extending between Campbelltown Road and Camden Valley Way.

Existing Traffic Controls

The existing traffic controls which apply to the road network in the vicinity of the site are illustrated on Figure 4. Key features of those traffic controls are:

- a 60 km/h SPEED LIMIT which applies to Croatia Avenue





- a 50 km/h SPEED LIMIT which applies to all other local roads in the area
- a 40 km/h SPEED LIMIT which applies within the vicinity of Edmondson Park Station
- a GIVE WAY SIGN in Croatia Avenue where it intersects with itself at the T-junction
- TRAFFIC SIGNALS in Croatia Avenue outside Edmondson Park Railway Station
- a number of FUTURE TRAFFIC SIGNALS at key intersections along Croatia Avenue, including directly outside the site.

Existing and Future Alternate Forms of Transport

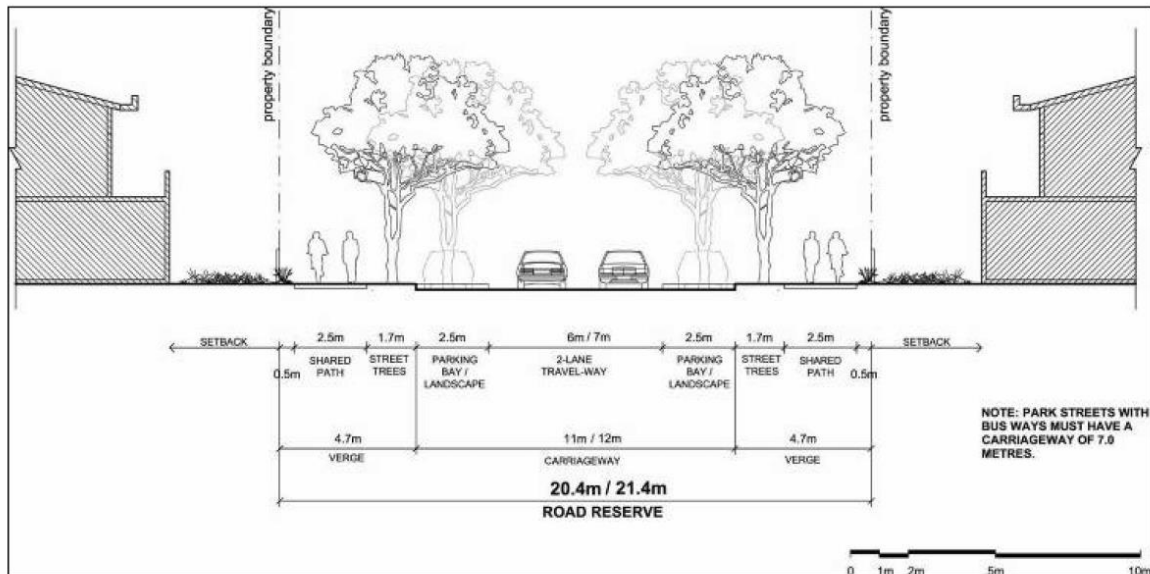
There is currently one bus service which traverses directly past the site along Croatia Avenue – Route No.869 – which operates between Ingleburn and Liverpool via Edmondson Park, Prestons and Lurnea. It is expected that as the precinct is redeveloped, additional services and routes will be introduced. As noted on Council’s Possible Public Transport Route plan, Croatia Avenue will become the *Main Bus Route* through the area.

Edmondson Park Railway Station is situated on the T2 Inner West & South Line, operating between Leppington and the City via Liverpool and Lidcombe, and is located approximately 500m walking distance south of the site. Train services operate out of Edmondson Park Railway Station every 15 minutes during peak periods and every 30 minutes during off-peak periods.

As noted in Council’s *DCP 2008*, the construction of the train station and bus priority corridor will provide an opportunity to integrate public transport with residential areas and the town centre in order to promote public transport usage. Regular bus stops will ultimately be provided along Croatia Avenue, along with frequent services, where there is a concentration of retail, commercial activity, medium density residential development, schools and community centres which will encourage people to use the public transport system.

Council’s Bicycle Network Plan indicates that Croatia Avenue will include a dedicated on-street bicycle lane, also extending between Camden Valley Way and Campbelltown Road. A

number of shared off-street pedestrian/bicycle path are also proposed throughout the precinct including along Poziers Road to the north of the site, as shown on the *DCP 2008* extract below.



Once the precinct is fully redeveloped, the site will be considered to be well served by public transport services and alternate transport options.

Projected Traffic Generation

The traffic implications of a development proposal primarily concern the effects of the *additional* traffic flows generated as a result of the development and its impact on the operational performance of the adjacent road network during the morning and afternoon commuter peak periods.

An indication of the traffic generation potential of the development proposal is provided by reference to the Roads and Maritime Services' publication *Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation (October 2002)* and the updated traffic generation rates in the recently published RMS *Technical Direction (TDT 2013/04a)* document.

The TDT 2013/04a document specifies that it replaces those sections of the RMS *Guidelines* indicated, and must be followed when RMS is undertaken trip generation and/or parking demand assessments.

The RMS *Guidelines* and the updated TDT 2013/04a are based on extensive surveys of a wide range of land uses and nominate the following traffic generation rates which are applicable to the development proposal:

High Density Residential Flat Dwellings

AM: 0.19 peak hour vehicle trips per unit

PM: 0.15 peak hour vehicle trips per unit

The RMS *Guidelines* also make the following observation in respect of high density residential flat buildings:

Definition

A *high density residential flat building* refers to a building containing 20 or more dwellings. This does not include aged or disabled persons housing. *High density residential flat buildings* are usually more than 5 levels, have basement level car parking and are located in close proximity to public transport services. The building may contain a component of commercial use.

Factors

The above rates include visitors, staff, service/delivery and on-street movements such as taxis and pick-up/set-down activities.

Application of the above traffic generation rates to the 135 apartments outlined in the development proposal yields a traffic generation potential of approximately 26 vehicle trips per hour (vph) during the AM commuter peak period and approximately 20 vph during the PM commuter peak period.

This is likely to comprise approximately 5 vph IN/21 vph OUT during the *morning* peak period and 16 vph IN/4 vph OUT during the *afternoon* peak period.

Reference to the RMS *Guidelines* also indicates that approximately 25% of trips will be *internal* to the precinct, involving local shopping, schools and local social visits. Thus, the volume of traffic accessing the external arterial road network is likely to be in the order of 4 vph IN/16 vph OUT during the *morning* peak period and 12 vph IN/3 vph OUT during the *afternoon* peak period.

In any event, that projected increase in traffic activity as a consequence of the development proposal is minimal, consistent with the new zoning objectives of the site and will clearly not have any unacceptable traffic implications in terms of road network capacity or traffic-related environmental effects.

4. PARKING IMPLICATIONS

Existing Kerbside Parking Restrictions

Given the residential nature of Croatia Avenue and the surrounding area, there are generally no kerbside parking restrictions which apply in the vicinity of the site, including along the site frontage.

Off-Street Parking Provisions

The off-street parking requirements applicable to the proposed development proposal are specified in Council's *Development Control Plan 2008, Section 20 – Car Parking and Access* document in the following terms:

Residential Flat Buildings

1 bedroom apartment:	1 space per dwelling
2 bedroom apartment:	1.5 spaces per dwelling
3+ bedroom apartment:	2 spaces per dwelling
Visitors:	1 space per 4 dwellings

Application of the above parking requirements to the 135 residential dwellings outlined in the development proposal yields an off-street car parking requirement of 227 parking spaces as set out below:

Building A Residents (39 dwellings):	54.0 spaces
Building A Visitors:	9.8 spaces
Building B Residents (56 dwellings):	82.0 spaces
Building B Visitors:	14.0 spaces
SUB TOTAL:	159.8 spaces
Building C Residents (40 dwellings):	57.0 spaces
Building C Visitors:	10.0 spaces
TOTAL:	226.8 spaces

Notwithstanding, the subject site is located within 800 metres of a railway station in the Sydney metropolitan area, and therefore the residential component of the development is also subject to the parking requirements specified in the *State Environmental Planning Policy No*

65 – *Design Quality of Residential Flat Development (Amendment No 3), 2015* in the following terms:

30 Standards that cannot be used to refuse development consent or modification of development consent

(1) If an application for the modification of a development consent or a development application for the carrying out of development to which this Policy applies satisfies the following design criteria, the consent authority must not refuse the application because of those matters:

a) if the car parking for the building will be equal to, or greater than, the recommended minimum amount of car parking specified in Part 3J of the Apartment Design Guide.

Reference is therefore made to the *Apartment Design Guide 2015, Section 3J – Bicycle and Car Parking* document which nominates the following car parking requirements:

Objective 3J-1

Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas

For development in the following locations:

- on sites that are within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area; or
- on land zoned, and sites within 400 metres of land zoned, B3 Commercial Core, B4 Mixed Use or equivalent in a nominated regional centre

the minimum car parking requirements for residents and visitors is set out in the Guide to Traffic Generating Developments, or the car parking requirement prescribed by the relevant council, whichever is less.

The car parking needs for a development must be provided off street.

Comparison therefore needs to be drawn between the off-street car parking requirements for residential flat buildings outlined in the Council's *DCP* and also the RMS *Guidelines* to determine the *lesser* requirement. The relevant car parking rates outlined in the RMS *Guidelines* are reproduced below:

RMS Guidelines – High Density Residential Flat Buildings in Metropolitan Regional (CBD) Centres

- 0.4 spaces per 1 bedroom unit
- 0.7 spaces per 2 bedroom unit
- 1.2 spaces per 3 bedroom unit
- 1 space per 7 units for visitor parking

Accordingly, the minimum off-street car parking requirement applicable to the residential component of the development is 112 spaces, comprising 93 residential spaces and 19 visitor spaces as set out below:

	DCP 2008	RMS Guidelines
Building A Residential:	54.0 spaces	25.6 spaces
Building A Visitors:	9.8 spaces	5.6 spaces
Building B Residential:	82.0 spaces	39.2 spaces
Building B Visitors:	14.0 spaces	8.0 spaces
SUB TOTAL:	159.8 spaces	78.4 spaces
Building C Residential:	57.0 spaces	27.4 spaces
Building C Visitors:	10.0 spaces	5.7 spaces
TOTAL:	226.8 spaces	111.5 spaces
Lesser Car parking Requirement: 112 spaces		

The proposed development makes provision for a total of 217 off-street car parking spaces, comprising 183 residential spaces and 34 visitor spaces, thereby satisfying the RMS *Guidelines* requirements as follows:

	Building A & B	Building C	TOTAL
Residential spaces	123	60	183
Visitor spaces	27	7	34
TOTAL SPACES	150	67	217

The geometric design layout of the proposed car parking facilities has been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 1 - Off-Street Car Parking AS2890.1:2004* in respect of parking spaces, ramp gradients and aisle widths.

Swept turning path diagrams illustrating the manoeuvring requirements of large B85 and B99 vehicles accessing the two driveways are reproduced in the following pages, confirming that these vehicles will be able to enter and exit the site simultaneously.

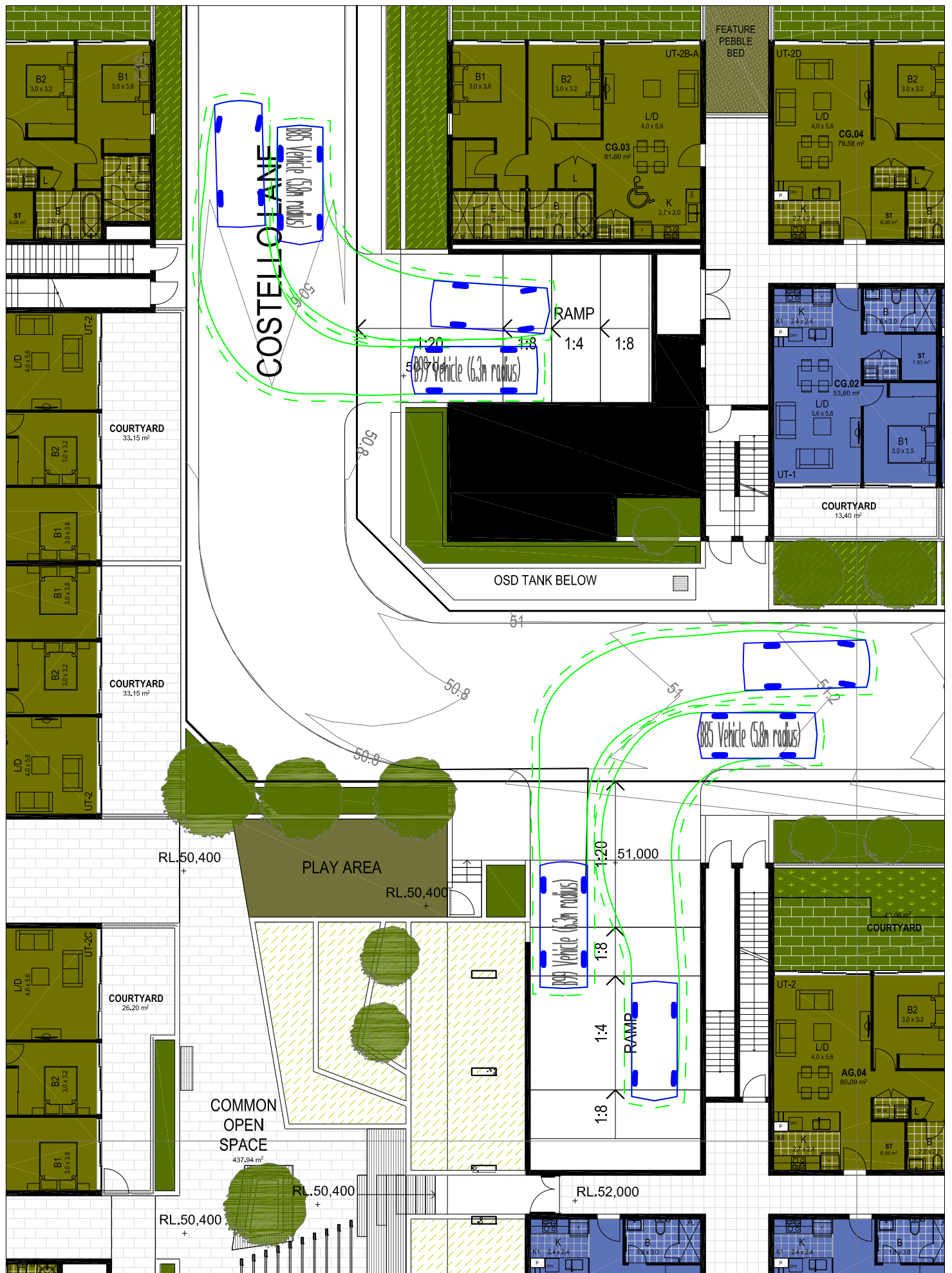
Furthermore, additional *swept turning path* diagrams illustrating the manoeuvring requirements of large B85 vehicles accessing all blind aisle spaces are also reproduced in the following pages, confirming that these vehicles will be able to enter and exit each blind aisle space in a forward direction at all times.

Loading/Service Provisions

The proposed new residential development is expected to be serviced by a variety of commercial vehicles including 9.5m long rigid trucks up to and including Council's garbage trucks. A dedicated intended bay is proposed along the eastern side of the proposed Costello Lane along Buildings A and B designed to accommodate the swept turning path requirements of these trucks, allowing them to traverse the site in a forward direction at all times as reproduced in the following pages.

In summary, the proposed parking and loading facilities satisfy the relevant requirements specified in both Council's *DCP 2008* as well as the Australian Standards and it is therefore concluded that the proposed development will not have any unacceptable parking or loading implications.









VARGA TRAFFIC PLANNING Pty Ltd
ABN 68 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2099

Phone +61 2 9904 3224
PO Box 1988
Neutral Bay, NSW 2099
www.vargatraffic.com.au
Sydney, Australia

PROJECT
RESIDENTIAL DEVELOPMENT



DRAWING TITLE
Basement 1: B85 Vehicle Exit
Swept Turning Paths

ADDRESS
190 Croatia Avenue,
Edmondson Park

PROJECT NO.
17474
REVIEWED
CP

1:300 @ A4
DATE DRAWN
2018-9-18
PREPARED
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Transport, Traffic and Parking Consultants







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BU

VARGA TRAFFIC PLANNING Pty Ltd
ABN 68 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
PO Box 1968
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

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ABN 68 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
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BU

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VARGA TRAFFIC PLANNING Pty Ltd
ABN 68 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 9904 3224
PO Box 1968
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

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VARGA TRAFFIC PLANNING Pty Ltd
ABN 68 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 8904 3224
PO Box 1868
Neutral Bay, NSW 2089
www.vargatrafic.com.au
Sydney, Australia

PROJECT
RESIDENTIAL DEVELOPMENT



DRAWING TITLE
Basement 2: B85 Vehicle Entry
Swept Turning Paths
ADDRESS
190 Croatia Avenue,
Edmondson Park

1:300 @ A4
PROJECT NO.
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VARGA TRAFFIC PLANNING Pty Ltd
 ABN 68 071 762 537
 Suite 6, Level 1
 20 Young Street
 Neutral Bay, NSW 2089
 www.vargatrafic.com.au
 Sydney, Australia

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DRAWING TITLE
**Basement 2: B85 Vehicle Entry
 Swept Turning Paths**
 ADDRESS
 190 Croatia Avenue,
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BUILD

BUILD

VARGA TRAFFIC PLANNING Pty Ltd
ABN 68 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone +61 2 8904 3224
PO Box 1988
Neutral Bay, NSW 2089
www.vargatraffic.com.au
Sydney, Australia

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1:300 @ A4

DATE DRAWN
2018-9-18

PREPARED
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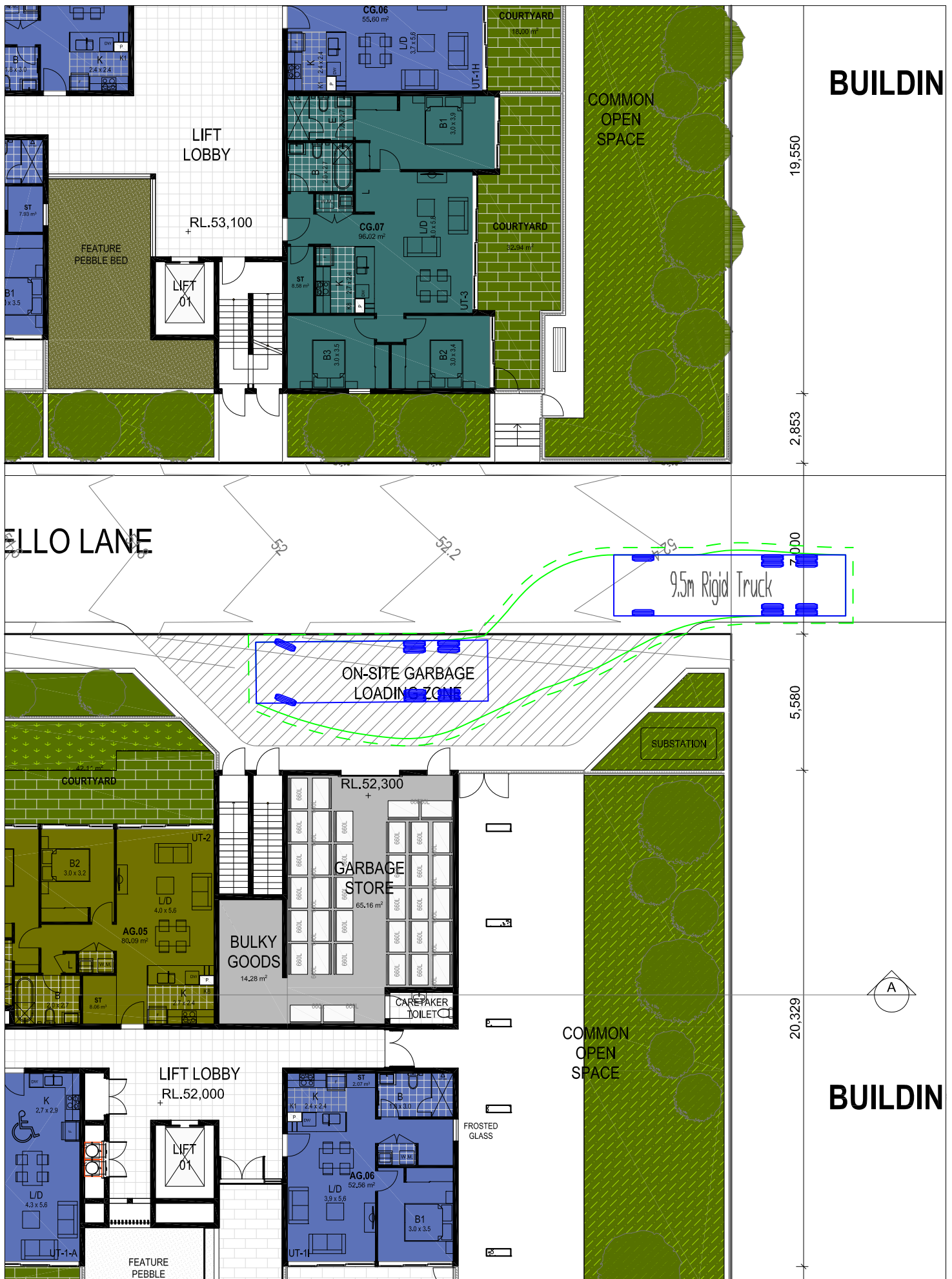
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BUILD

BUILD





VARGA TRAFFIC PLANNING Pty Ltd
ABN 88 071 762 537
Suite 6, Level 1
20 Young Street
Neutral Bay, NSW 2089

Phone + 61 2 9904 3224
PO Box 1985
Neutral Bay, NSW 2089
www.vargatrafic.com.au
Sydney, Australia

PROJECT
RESIDENTIAL DEVELOPMENT



DRAWING TITLE
Ground Floor: 9.5m Rigid Truck
Entry Swept Turning Path

ADDRESS
190 Croatia Avenue,
Edmondson Park

PROJECT NO.
17474
REVIEWED
CP

1:200 @ A4
DATE DRAWN
2018-9-13
PREPARED
TN

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