

Planning Proposal for a  
Proposed Residential Development

**Lot 71 in DP706546**  
**St Andrews Road, Varroville**

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**TRAFFIC AND PARKING ASSESSMENT REPORT**

10 June 2021

Ref 21066

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## 1. INTRODUCTION

This report has been prepared to accompany an amended planning proposal for a residential subdivision to be located at Lot 71 in DP706546 (Figures 1 and 2).

The amended design seeks to address conditions of approval provided by *the Department of Planning, Industry and Environment* during the gateway determination process, including those relating to traffic, reproduced below:

1. (c) *provide further commentary on Planning Priority W5 of the Western District Plan, in relation to access to public transport*
  
2. (d) *Traffic and Parking Assessment: consider the availability of the additional road access being provided through the East Leppington Precinct, and if this connection is not viable, amend the assessment and proposal accordingly.*

The nature of the Planning Proposal remains unchanged, and involves the subdivision and rezoning of the land from *E3 Environmental Management* to part *R2 Low Density Residential* and in part retention of the *E3 Environmental Management Land*.

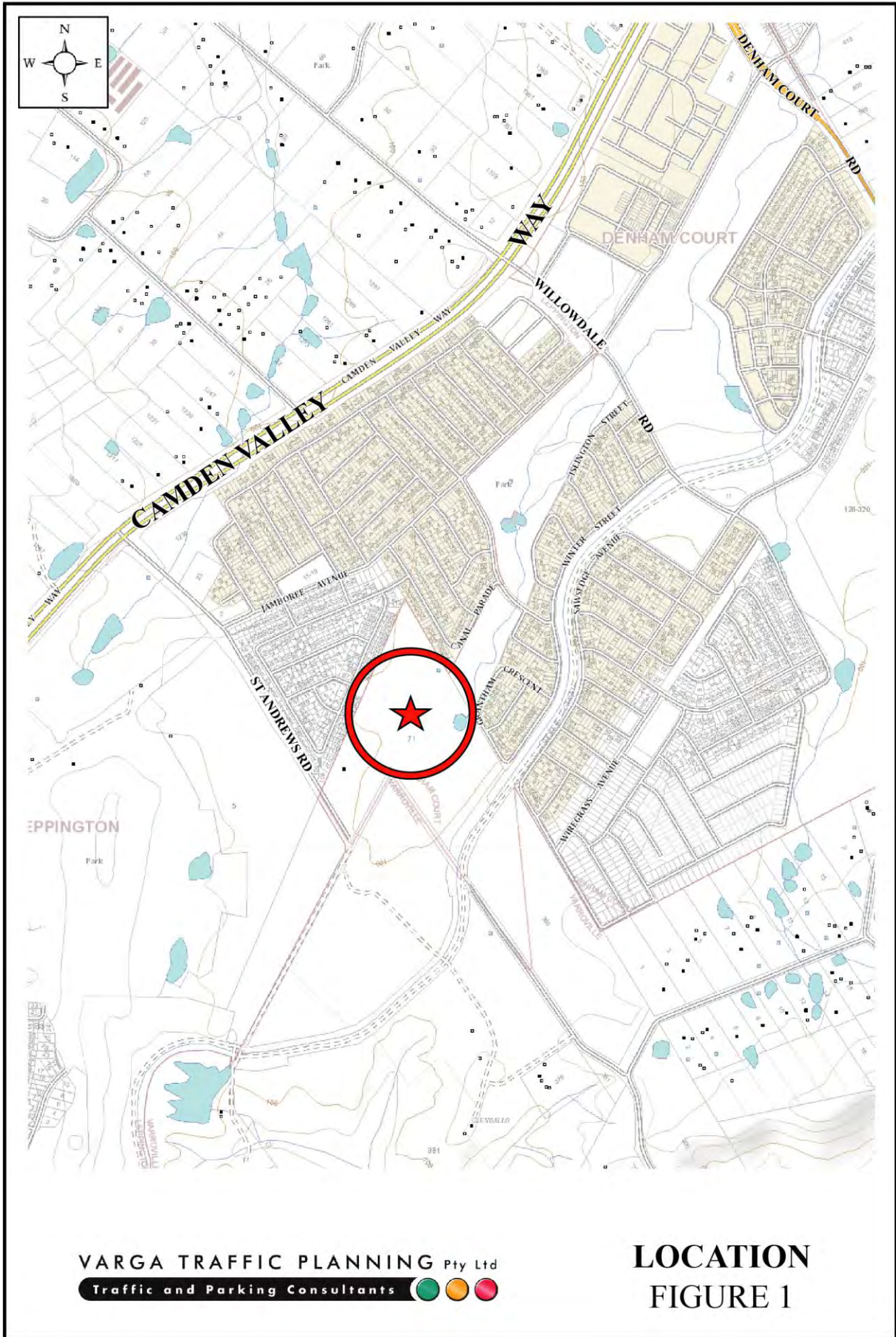
The proposed residential subdivision has however been slightly amended due to its connection to the Cornish site being no longer available (LEC 2018/314478), and will therefore make the following changes:

- 111 new residential allotments (an increase of 13 residential allotments compared to the original planning proposal due to revised subdivision layout)
  
- construction of a new local road network which will connect with St Andrews Road and also with Grantham Crescent within the adjacent established residential subdivision.

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

- describes the site and provides details of the planning proposal

- reviews the road network in the vicinity of the site
- estimates the traffic generation potential of the planning proposal
- assesses the traffic implications of the planning proposal in terms of road network capacity
- reviews the geometric design features of the proposed new road network
- assesses the off-street parking implications of the planning proposal.





## **2. PROPOSED DEVELOPMENT**

### **Site**

The subject site is located on the eastern side of St Andrews Road, north of the Sydney Water Canal. The site has a street frontage approximately 148m in length to St Andrews Road and occupies an area of approximately 13.5ha.

The subject site is currently occupied by a single dwelling house with a number of associated outbuildings. The remainder of the site generally comprises tall trees, a dam and a riparian corridor through the centre of the site.

Vehicular access to the site is currently provided via a single driveway located at the north-western corner of the St Andrews Road site frontage.

### **East Leppington Precinct**

The NSW State Government has approved the rezoning of East Leppington Precinct that hugs the northern and eastern boundaries of the subject site to provide land for approximately 4,450 dwellings, a local centre, a village centre, 26 hectares of open space and recreation areas, new primary school and community centre, upgrades to major roads, including Camden Valley Way and Denham Court Road, new pedestrian and cycle links integrated with open space.

Significant infrastructure will be provided in the East Leppington Precinct over time to support the increase in population. These will include interconnected roads, walking and cycling networks, a bus-friendly road network and higher housing densities.

A number of upgrades to Camden Valley Way have already been completed, including new traffic signals at its intersections with St Andrews Road, Willowdale Drive and with Denham Court Road, creating an increasingly accessible transport corridor connecting the Precinct with surrounding major centres and infrastructure.

*Cardno* prepared a detailed traffic assessment and green travel strategy in June 2013 as part of the East Leppington Precinct project application, both of which are referenced throughout this report. Extracts from the *Cardno* reports are reproduced in the following pages illustrating the following:

- *Figure 4.1 Indicative Layout Plan (including subject site overlay)*
- *Figure 5.2 East Leppington Road Hierarchy (including subject site overlay)*
- *Figure 5.5 SIDRA Intersection Layouts (including Camden Valley Way & St Andrews Road)*
- *Appendix A – Local Street Section.*

### **Proposed Development**

The planning proposal involves the subdivision of the subject site to create 111 new residential allotments. The proposed new allotments will have an average frontage of 15m and an average lot size of 300m<sup>2</sup>.

A new local road network is proposed with a road reservation width of 16 metres which will connect with St Andrews Road, plus another road link with a road reservation width of 18 metres to connect with Grantham Crescent within the adjacent established residential subdivision.

The planning proposal will also make provision for the widening of St Andrews Road along its frontage.

Plans for the purposes of this planning proposal have been prepared by *Lean, Lackenby & Hayward* and are reproduced in the following pages.



Figure 4.1 Indicative Layout Plan v12.6

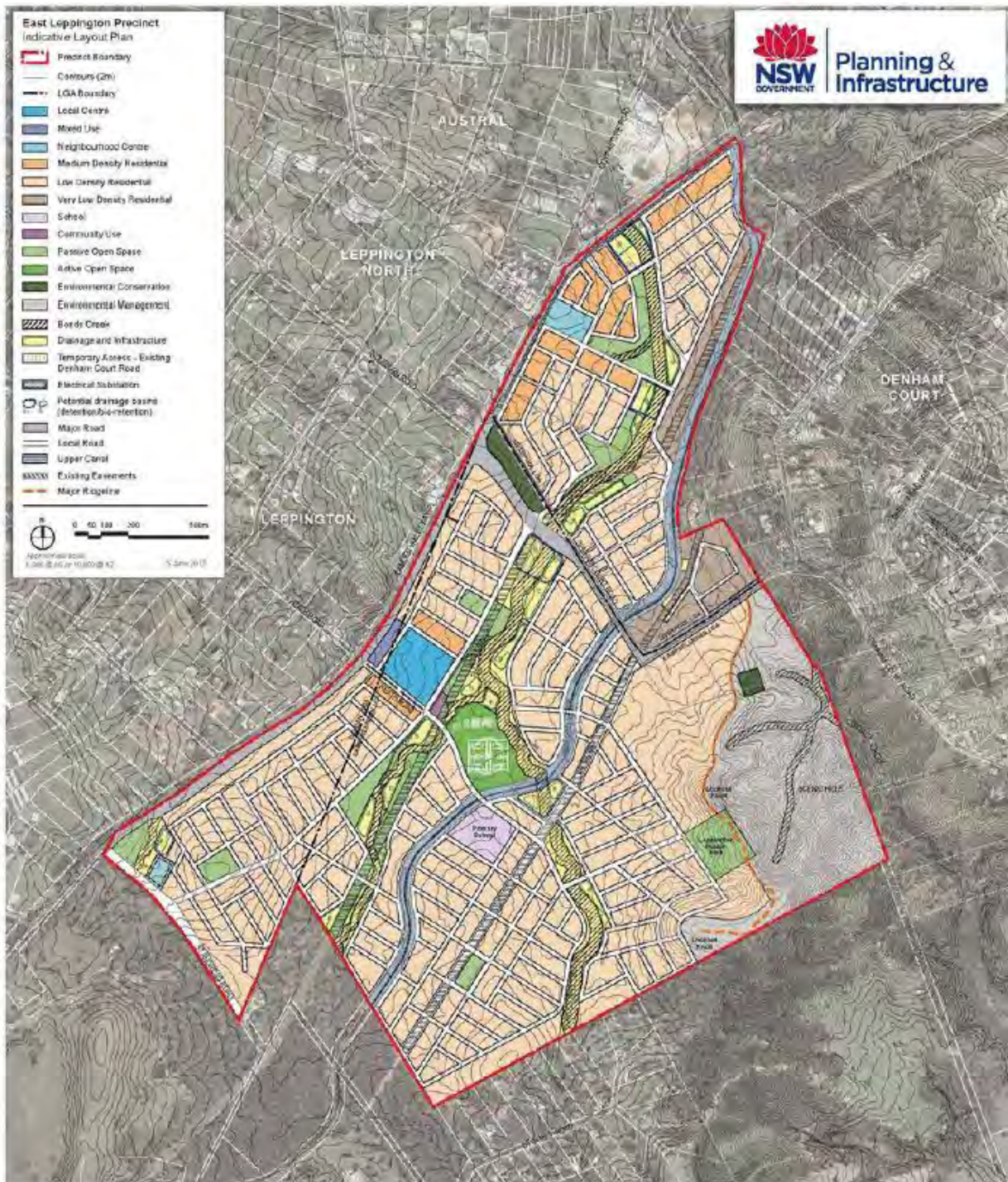
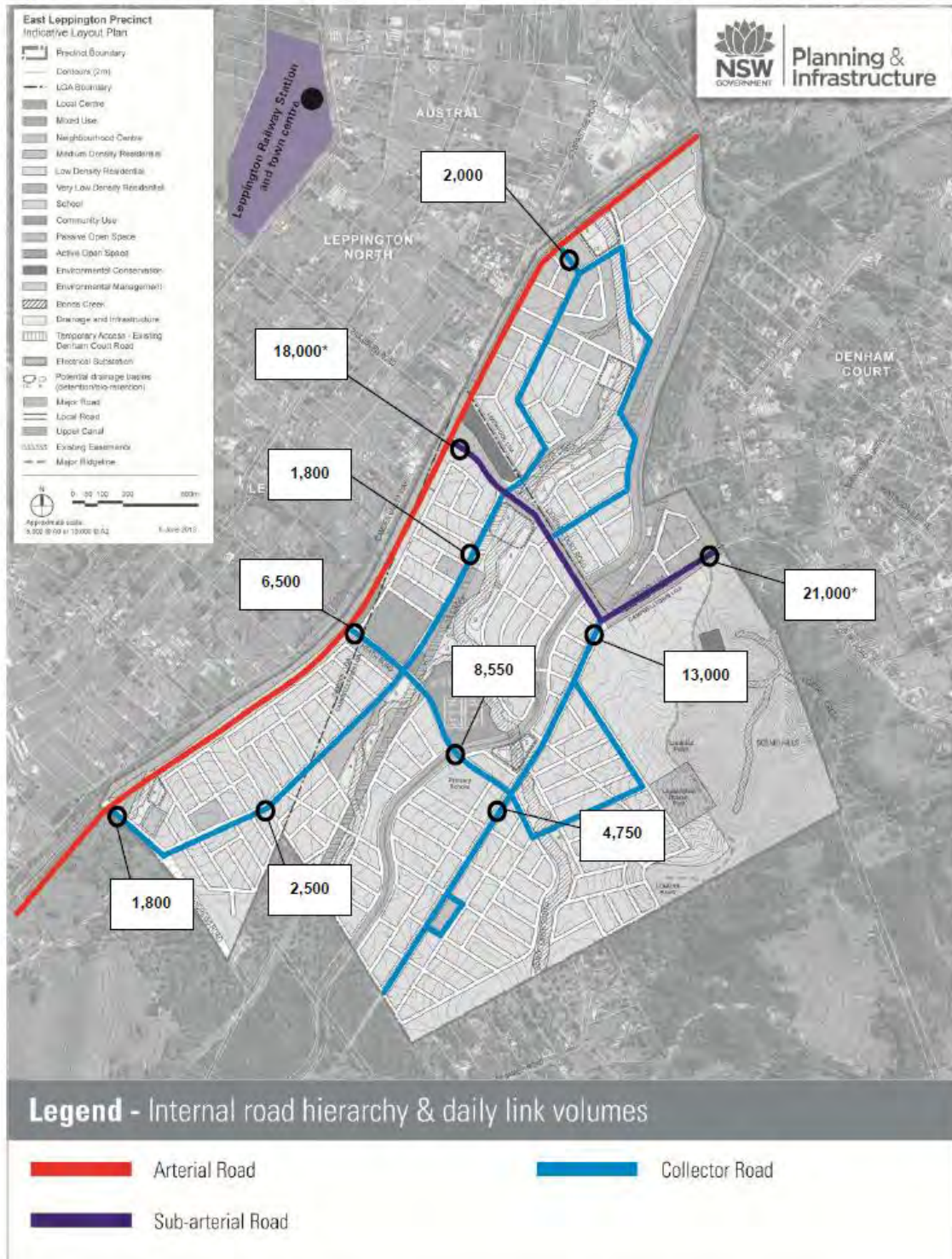
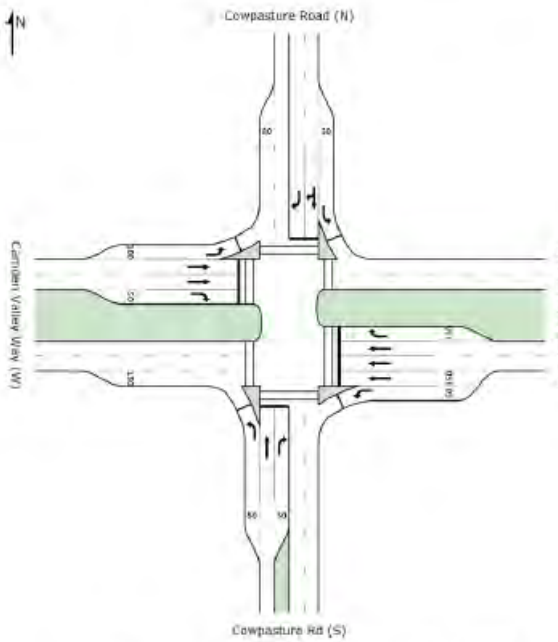


Figure 5.2 Internal Road Hierarchy & Daily Link Volumes (2036 – 10 year design horizon)

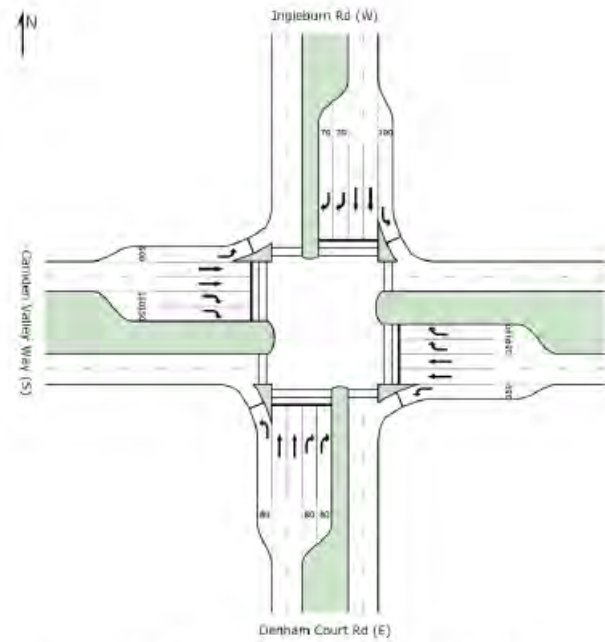


\*East Leppington Precinct development traffic plus 2036 forecast background traffic of approximately 10,000 daily trips

Figure 5.5 SIDRA Intersection Layouts

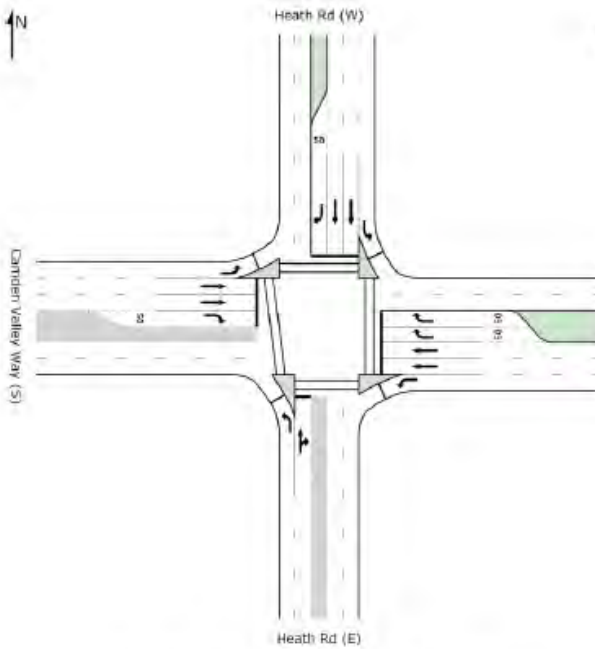


Camden Valley Way / Cowpasture Road

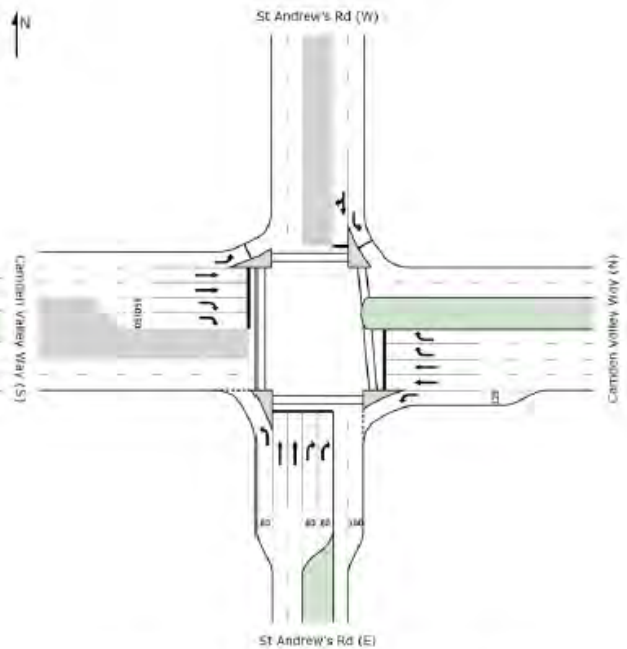


Camden Valley Way / Denham Court Road

East Leppington Precinct



Camden Valley Way / Heath Road



Camden Valley Way / St Andrew's Road

C.3 STREETS

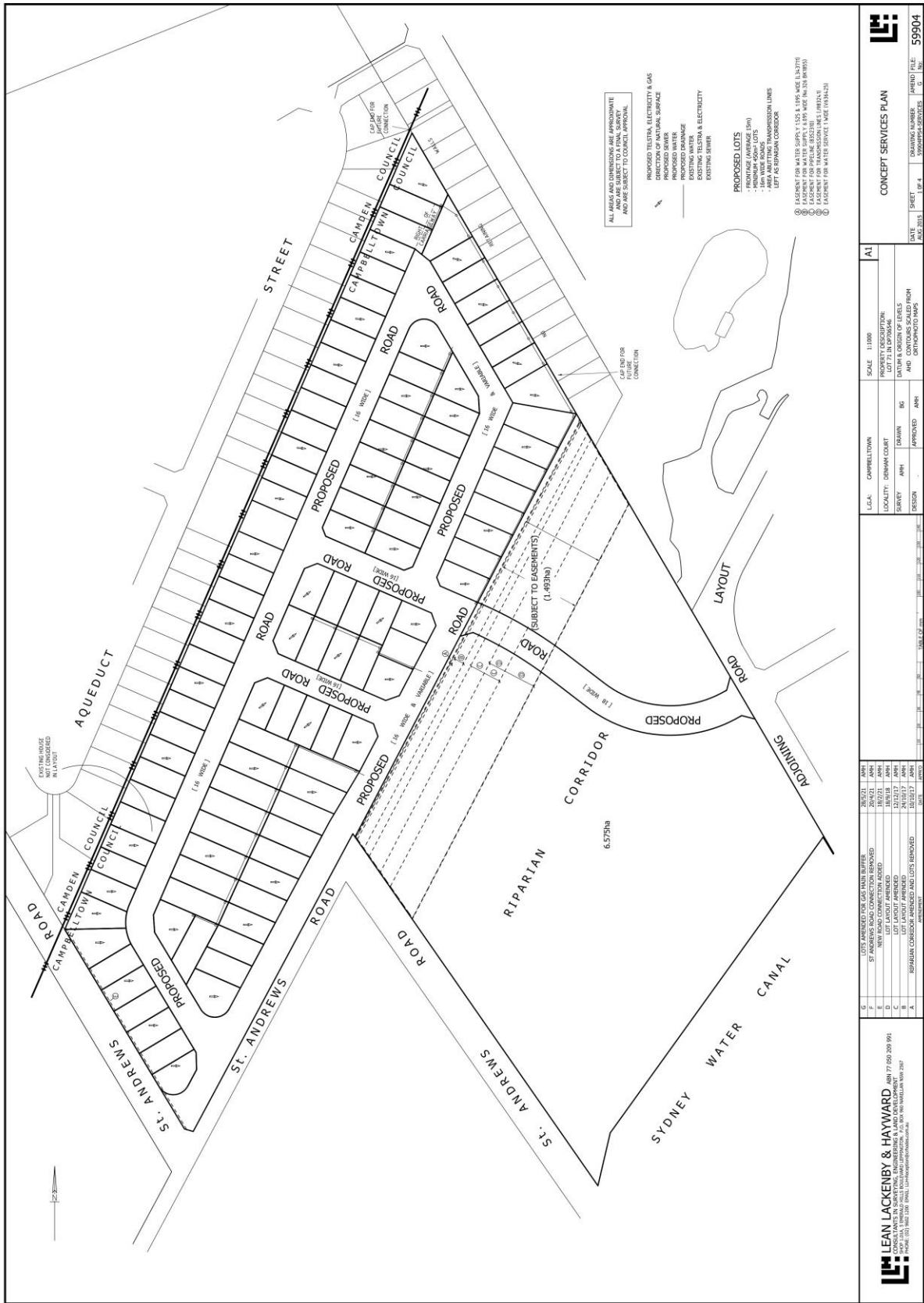
## street hierarchy: local streets

STREET TYPE/ROLE AND FUNCTION	URBAN DESIGN CHARACTER	TYPICAL REQUIREMENTS
<p><b>LOCAL STREETS</b></p> <p>Give priority to pedestrians and cyclists.</p> <p>Traffic loads are 1,000-3,000 vehicles / day</p> <p>Designed for a vehicle speed of up to 50km/hr.</p>	<p><b>Uses</b></p> <p>Local Streets should accommodate shared pedestrian and bike and vehicular uses. Local Streets should provide continuous pedestrian and cycle paths.</p> <p><b>Profile</b></p> <p>These streets are designed to slow residential traffic. The width of these streets may vary when accommodating buses or where there is a low demand for on-street parking.</p>	<p>Street Reserve: 16 metres</p> <p>Travel-way:</p> <ul style="list-style-type: none"> <li>• 3.0 metres each way</li> </ul>



Local Street Section  
 Source: Edmondson Park Locality DCP Template, Liverpool City Council

OCTOBER 2006



ALL AREAS AND DIMENSIONS ARE APPROXIMATE AND ARE SUBJECT TO FINAL SURVEY AND ARE SUBJECT TO COUNCIL APPROVAL.

PROPOSED TELEPHONE, ELECTRICITY & GAS  
 DIRECTION OF NATURAL SURFACE  
 PROPOSED DRIVE  
 PROPOSED DRAINAGE  
 EXISTING WATER  
 EXISTING WATER & ELECTRICITY  
 EXISTING SEWER

PROPOSED LOTS  
 - HOUSES (VARIOUS SIZES)  
 - NEARBY 400m<sup>2</sup> LOTS  
 - AREA ABUTTING TRANSMISSION LINES  
 LEFT AS EXISTING CORRIDOR

① EXISTING FOR WATER SUPPLY (1.55S & 1.09S ADE, LB 2711)  
 ② EXISTING FOR WATER SUPPLY & 1.09S WIDE (IN 200 BPWS)  
 ③ EXISTING FOR TRANSMISSION LINES (PHE 242)  
 ④ EXISTING FOR WATER SERVICE (WIDE 100/242)

		<b>CONCEPT SERVICES PLAN</b>		<b>59904</b>	
PROJECT NO: 59904 PROJECT NAME: ST ANDREWS ROAD CONNECTION (PHASE 2) CLIENT: CAMDEN COUNCIL		SCALE: 1:1000 PROPERTY DESCRIPTION: LOT 1 IN EXPOSURE DATE: 12/12/17		SHEET NO: 41 TOTAL SHEETS: 41	
DESIGNER: AMH CHECKER: DMH APPROVED: AMH		L.C.A.: CAMPBELLTOWN LOCALITY: DREAM COURT SURVEY: AMH DESIGN: AMH		DATE: 12/12/17 DRAWN: DMH DATE: 12/12/17 CHECKED: DMH DATE: 12/12/17	
PROJECT NO: 59904 PROJECT NAME: ST ANDREWS ROAD CONNECTION (PHASE 2) CLIENT: CAMDEN COUNCIL		SCALE: 1:1000 PROPERTY DESCRIPTION: LOT 1 IN EXPOSURE DATE: 12/12/17		SHEET NO: 41 TOTAL SHEETS: 41	



### 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.

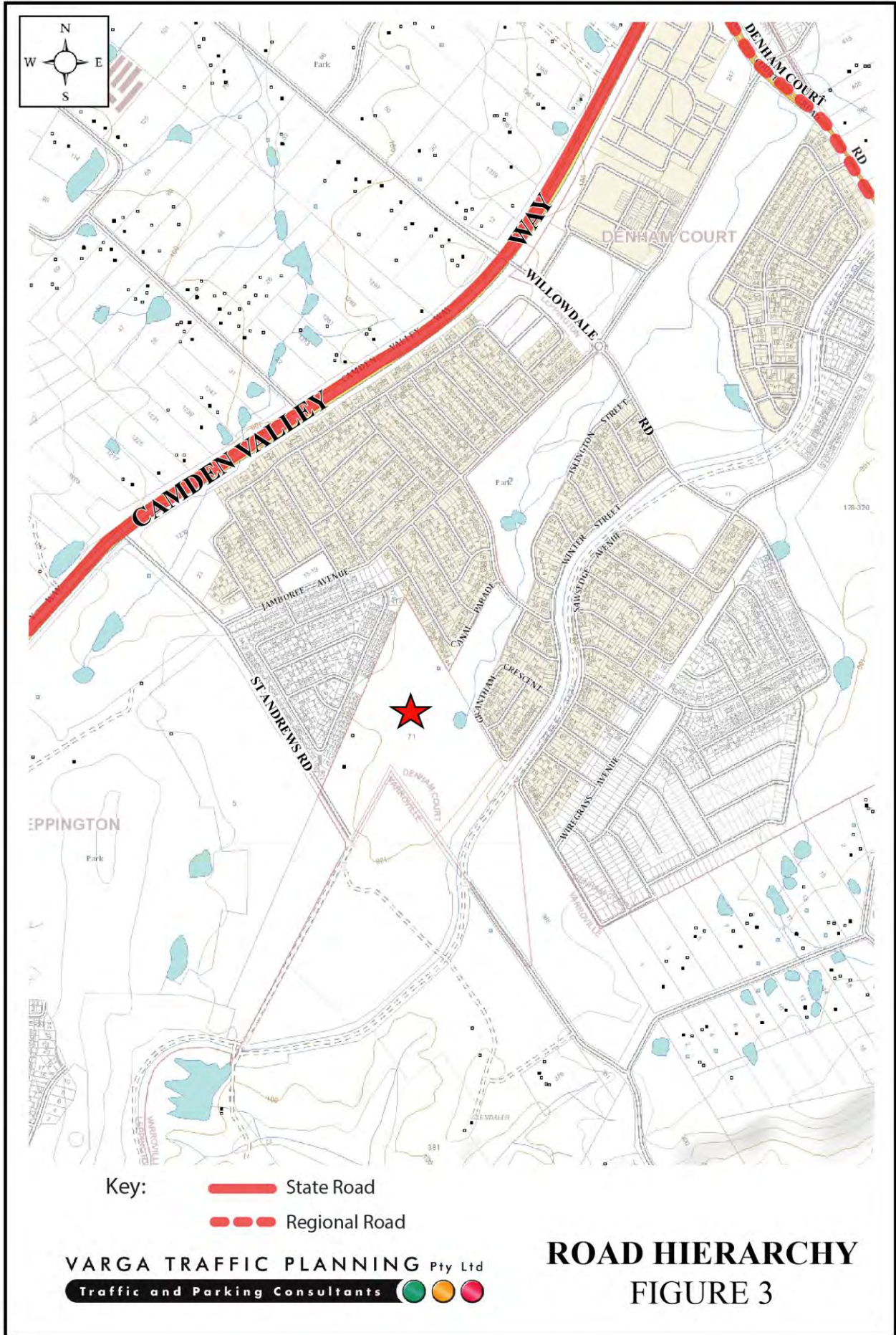
Camden Valley Way is classified by the RMS as a *State Road* and provides the key east-west road link in the area, linking Hume Highway, M7 and M5 interchanges at Prestons, near Liverpool, Camden, Narellan and Harrington Park. It has recently been upgraded to carry two traffic lanes in each direction with opposing traffic flows separated by a central median island.

St Andrews Road is a local, unclassified road which is primarily used to provide vehicular and pedestrian access to frontage properties. Currently there is no connection to Campbelltown Road to the east.

#### 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:

- an 80 km/h SPEED LIMIT which applies to Camden Valley Way
- a default urban 50km/h SPEED LIMIT which applies to St Andrews Road and all other local roads in the area
- a SHELTERED RIGHT-TURN BAY in Camden Valley Way onto St Andrews Road
- TRAFFIC SIGNALS in Camden Valley Way where it intersects with St Andrews Road and Denham Court Road.







## **Western City District Plan – Planning Priority W5**

The Western City District Plan is a 20-year plan to manage growth in the context of economic, social and environmental matters to achieve the 40-year vision for Greater Sydney.

Planning Priority W5 deals with providing housing supply, choice and affordability, with access to jobs, service and public transport.

With regards to public transport accessibility, the site is located within 6 to 9 minutes driving distance to the Leppington Railway Station which has the following facilities:

- rail service for the T2 Inner West and Leppington Line and T5 Cumberland Line which provide train services between Richmond, Parramatta and the Sydney CBD
- bus routes 841, 855, 856 and 858 providing high frequency services in the peak hours to Narellan, Liverpool and Oran Park
- 872 formal at-grade commuter parking spaces.

In addition to the above, *Transport for NSW (TfNSW)* is delivering additional commuter car parking spaces at Leppington Station involving the construction of a multi-storey commuter car park providing up to 1,000 additional commuter parking spaces, and is expected to be completed by mid-2021.

These commuter car spaces provide FREE parking for up to 18 hours under the Transport Park & Ride program, and are specifically designed to cater for the surrounding growth precincts.

## **Traffic Generation**

The traffic implications of development proposals primarily concern the effects of the *additional* traffic flows generated as a result of a 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 planning 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 RMS *Technical Direction* 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 *Technical Direction* are based on extensive surveys of a wide range of land uses and nominate the following traffic generation rates which are applicable to the planning proposal:

**Low Density Residential Dwellings**

AM: 0.95 peak hour vehicle trips per dwelling

PM: 0.99 peak hour vehicle trips per dwelling

Application of the above traffic generation rate to the 111 outlined in the planning proposal yields a traffic generation potential of approximately 106 vehicle trips per hour (vph) during the AM peak hour and 110 vph during the PM peak hour. This is likely to comprise approximately 21 vph IN/85 vph OUT during the AM peak hour, and 88 vph IN/22 vph OUT during the PM peak hour.

Some 25% of trips are expected to be local trips in any event as detailed in the following extracts from the Roads and Maritime Services' publication *Guide to Traffic Generating Developments, Section 3 – Land Use Traffic Generation (October 2002)*:

*“Note that not all trips are external trips. As a guide, about 25% of trips are **internal** to the subdivision, involving local shopping, schools and local social visits. When reviewing the traffic impact of traffic generated on sub-regional and regional roads, some adjustment is necessary, depending on the location of the shops, schools and recreational facilities”.*

The external traffic activity expected to be generated by the subject site is likely to be dispersed over a number of collector roads such as St Andrews Road, Willowdale Drive and Denham Court Road. For the purposes of this assessment, it has been assumed that there would be approximately 13 vph IN/51 vph OUT in the AM peak hour, and approximately 53 vph IN/13vph OUT during the PM peak hour using St Andrews Road, and approximately 3 vph IN/13 vph OUT in the AM peak hour, and approximately 13 vph IN/3vph OUT during the PM peak hour using either Willowdale Drive or Denham Court Road.

The now completed dual carriageway on Camden Valley Way includes new intersection layouts at the St Andrews Road, Willowdale Drive and Denham Court Road intersections. These include turning lanes comprising highly efficient, high capacity intersections with substantial spare capacity, based on the results of traffic modelling undertaken in the *Cardno* report.

A new local road link is also proposed to connect with Grantham Crescent within the adjacent established residential subdivision.

Vehicular access to/from the site will also be available via Denham Court Road to connect with Campbelltown Road. Other local road links are also available via Raby Road to connect with Campbelltown.

Accordingly, the external traffic flows expected to be generated by the planning proposal will be minimal, and are expected to be dispersed over a number of recently upgraded intersections along Camden Valley Way or other local road links using Denham Court Road or Rabbi Road.

In the circumstances, it is reasonable to conclude that the external traffic flows expected to be generated by the planning proposal will not have any unacceptable traffic implications in terms of road network capacity.

## **Internal Local Road Layout Considerations**

A new local road network is proposed with a road reservation width of 16 metres which will connect with St Andrews Road, consistent with the East Leppington Precinct road hierarchy requirements.

Furthermore, another road link with a road reservation width of 18 metres is proposed to connect with Grantham Crescent within the adjacent established residential subdivision. It is noted that this secondary road is a result of Rural Fire Service (RFS) requirements and not necessary from a traffic engineering perspective whereby the connection to St Andrews Road will remain the preferable route for future residents to get on Camden Valley Way, irrespective whether or not this secondary access is provided.

The planning proposal will also make provision for the widening of St Andrews Road along its frontage, and further extending it southward into the proposed residential subdivision.

## **Parking**

The proposed new local road network makes provision for on-street car parking as illustrated on the *Appendix A – Local Street Section* drawing reproduced in Chapter 2 of this report.

Off-street car parking is to be provided on each individual allotment, and will be addressed in separate development applications for the construction of the dwellings. There is no doubt however, that the size of the allotments will be sufficient to accommodate vehicular access and off-street car parking being provided on each of the allotments in accordance with Council's parking requirements.

## **Conclusion**

Based on the analysis and discussions presented within this report, the following conclusions are made:

- the planning proposal seeks approval to permit the subdivision of the site into 111 residential allotments with a new internal road network

- the planning proposal is within a short 6 to 9 minutes driving distance to Leppington Station with substantial amount of FREE commuter parking
- the planning proposal could not be expected to have any unacceptable traffic implications in terms of road network capacity
- based on the modelling results in *Cardno's* report there is significant spare capacity in Camden Valley Way where it intersects with St Andrews Road, Willowdale Drive and Denham Court Road, and no further improvements are needed to accommodate the additional traffic flows generated as a consequence of the planning proposal
- the future car parking facilities will be provided and designed in accordance with Council's requirements and the relevant Australian Standards
- the proposed internal/local road layout is consistent with the requirements of the East Leppington Precinct road network hierarchy.