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1. INTRODUCTION

This Practice has been engaged by Hyside Projects Subone Pty Ltd to prepare a Traffic and Transport Impact Assessment report to accompany a Planning Proposal for a mixed use development at 2 Farrow Road, Campbelltown ('subject site'). It is noted that a Planning Proposal submission has been recently lodged with Campbelltown City Council ('Council') for the redevelopment of the subject site to accommodate 129,282m² of residential GFA (estimated to be over 1,500 apartments), 2,890m² of retail GFA, 2,890m² of commercial office GFA and 5,192m² dedicated to community use.

The subject development, forming the purpose of this assessment, proposes the following:

- Increase in the total commercial office GFA from 2,890m² to 17,272m² (+14,383m²); and
- Small increase in the residential GFA from 129,282m² to 129,931m² (+649m²). The total number of residential dwellings proposed is 1,528.

The purpose of this report is therefore to address the potential traffic and transport implications associated with the planning proposal and where necessary, recommend appropriate treatment measures to ameliorate any adverse impacts. To this end, this report has given consideration to the following issues:

- The existing traffic conditions in vicinity of the subject site, including the existing traffic network, traffic volumes and conditions;
- The likely additional traffic potentially generated by the subject proposal estimated based on traffic generation rates provided with RMS' Guide to Traffic Generating Developments and its *Updated Traffic Surveys* (TD 2013/04a); and
- The impact of this additional traffic on the existing surrounding road network.

Throughout this report, reference is made to the following documents:

- The Roads and Maritime Services' *Guide to Traffic Generating Developments* and its *Updated Traffic Surveys* (TD 2013/04a);
- Varga Traffic Planning Pty. Ltd. *Traffic and Parking Assessment Report*.

This report has been prepared pursuant to State Environmental Planning Policy (Infrastructure) 2007.

The report should be read in conjunction with the concept plans prepared by SJB.

2. SITE DETAILS

2.1 Site Location

The subject site is situated on north-western corner of Badgally Road and Farrow Road/Watsford Road, Campbelltown. The site location is shown overleaf within its surrounding road hierarchy and local land use context in **Figures 1** and **2** respectively.

2.2 Site Description

The development site has a legal property description of Lot 1 in Deposited Plan 406940 and a street address of 2 Farrow Road, Campbelltown. The site forms a trapezoidal shaped parcel of land, providing approximate frontages of 110m and 203m to Badgally Road and Farrow Road, respectively. The total site area is in the order of 28,110m².

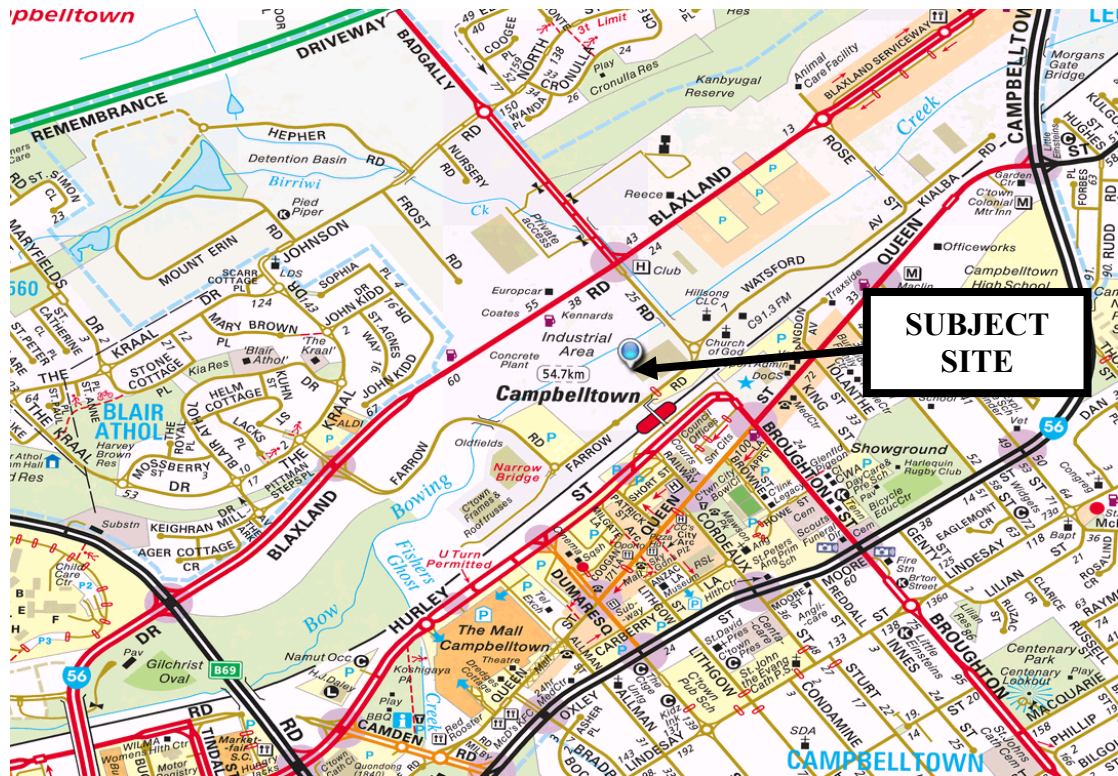
2.3 Existing Uses

The site currently accommodates a large warehouse building, which occupies the south-eastern portion of the site, with the remainder of the site dedicated to landscaping and informal parking/loading. The site is currently serviced by four (4) separate driveways, with two (2) driveways connecting with Badgally Road at the eastern property boundary and two (2) driveways connecting with Farrow Road at the southern property boundary.

2.4 Surrounding Uses

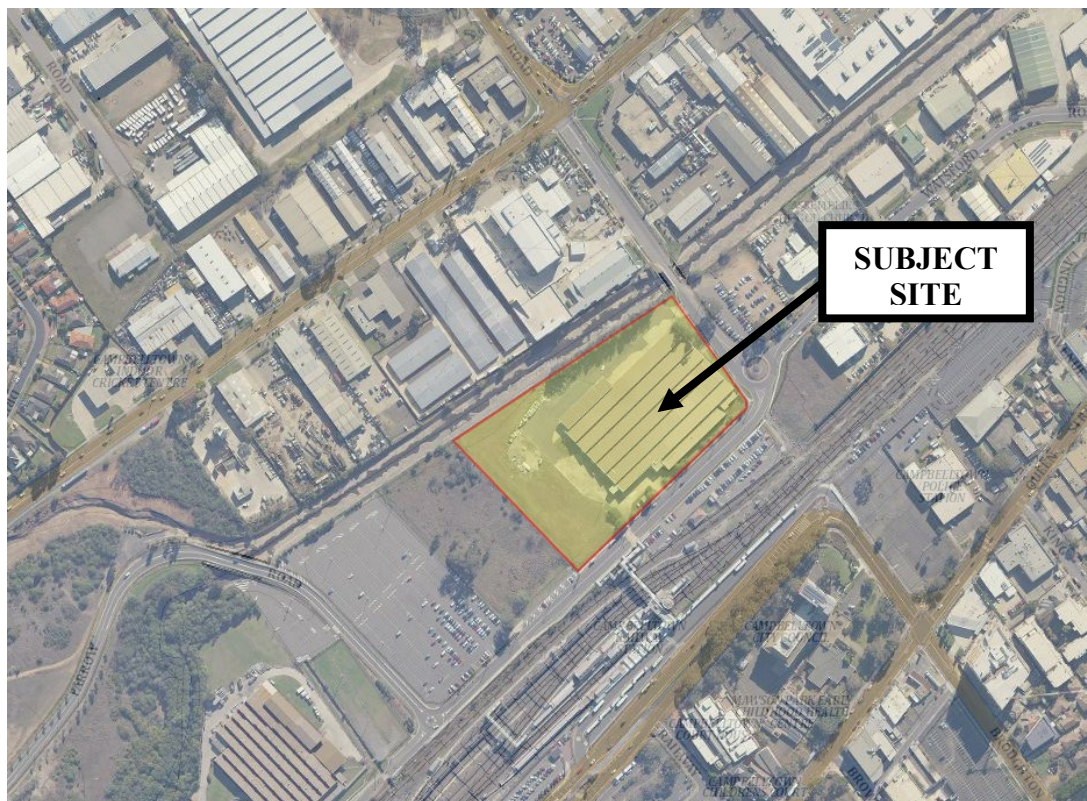
The development site is primarily surrounded by large scale industrial developments in its immediate vicinity.

FIGURE 1
SITE LOCATION – SURROUNDING ROAD NETWORK CONTEXT



Source: <http://www.street-directory.com.au>

FIGURE 2
SITE LOCATION – LOCAL LAND USE CONTEXT



Source: Six Maps

3. **BACKGROUND/PROPOSED DEVELOPMENT**

3.1 **Recent Submission**

Varga Traffic Planning Pty. Ltd. prepared a *Traffic and Parking Assessment Report* to accompany a recently submitted Planning Proposal Application, which was based on the following development data (being an extract of page 6 of this traffic report):

“A total of seven mixed-use residential apartment buildings are envisaged, with height varying from 20 to 36 storeys, and FSR ranging from 4:1 to 5:1. It is estimated that the envisaged development on the site will provide:

- 1,565 residential apartments
- 4,481m² of commercial floor space
- 1,684m² of retail floor space, and
- 5,192m² of community space for local residents.”

3.2 **Description of Proposal**

The Planning Proposal forming the subject of this assessment proposes the following development yield in accordance with the Concept Plans prepared by SJB:

- 129,931m² or 1,528 residential apartments
- 17,273m² of commercial floor space
- 2,890m² of retail floor space, and
- 5,192m² of community space for local residents.

Table 1 provides a comparison between the development yield outlined in Varga’s Traffic Report and the development yield forming this Planning Proposal.

TABLE 1 SUMMARY OF PROPOSED LAND USES			
Component	Varga’s Traffic Report	Planning Proposal (which this traffic assessment addresses)	Difference
Residential	1,565 dwellings	1,528 dwellings	-37 dwellings
Retail	1,684m ²	2,890m ²	+1,206m ²
Commercial	4,481m ²	17,273m ²	+12,791m ²
Community	5,192m ²	5,192m ²	0 (No Change)

4. EXISTING TRAFFIC CONDITIONS

4.1 Surrounding Road Network

It is usual to classify roads according to road hierarchy in order to determine their functional role within the road network. Changes to traffic flows on the roads can then be assessed within the context of the road hierarchy. Roads are classified according to the role they fulfil and the volume of traffic they should appropriately carry. In this regard, the Roads & Maritime Services has set down the following guidelines for the functional classification of roads:

- **Arterial Road** – typically a main road carrying over 15,000 vehicles per day and fulfilling a role as a major inter-regional link (over 1,500 vehicles per peak hour);
- **Sub-Arterial Road** – defined as secondary inter-regional links, typically carrying volumes between 5,000 and 20,000 vehicles per day (500 to 2,000 vehicles per peak hour);
- **Collector Road** – provides a link between local roads and regional roads, typically carrying between 2,000 and 10,000 vehicles per day (250 to 1,000 vehicles per peak hour). At volumes greater than 5,000 vehicles per day, residential amenity begins to decline noticeably; and
- **Local Road** – provides access to individual allotments, carrying low volumes, typically less than 2,000 vehicles per day (250 vehicles per peak hour).

Peak hour volumes on most roads are typically eight to twelve percent of the daily volumes. In accordance with the above, the roads in the vicinity of the subject site are therefore described below:

- **Blaxland Road** performs an industrial collector function, providing connectivity between Campbelltown Road in the east and Narellan Road/Gilchrist Drive in the west, forming signalised junctions with both. In the vicinity of the site, Blaxland Road intersects with The Kraal Drive/Farrow Road and Badgally Road under traffic signals. “No Right Turn” restrictions currently apply within the western intersection approach of Blaxland Road and Badgally Road.

Blaxland Road generally provides a standard industrial carriageway width of 12m, providing two through lanes of traffic in each direction. Traffic flow within Blaxland Road is governed by a sign posted speed limit of 60km/h.

- **Badgally Road** between Blaxland Road in the north and Farrow Road/Watsford Road in the south, performs a local road function to abutting developments. Badgally Road forms a T-junction with Farrow Road and Watsford Road under a single lane circulating roundabout. Traffic flow within Badgally Road is governed by a sign posted speed limit of 60km/h.

- **Farrow Road** is a local road between Badgally Road in the east and Blaxland Road/The Kraal Drive in the west. Farrow Road generally accommodates one through lane of traffic in each direction. Traffic flow within Farrow Road is governed by a sign posted speed limit of 60km/h.

4.2 Existing Traffic Volumes and Conditions

In order to obtain an indication of the existing operation of the surrounding road network, reference is made to recent morning and afternoon peak hour traffic surveys contained in the *Traffic and Parking Assessment Report* prepared by Varga Traffic Planning Pty. Ltd. These surveys were undertaken between 6:30am – 9:30am and 3:30pm – 6:00pm on the 25th February 2020 at the following locations:

- Blaxland Road and The Kraal Drive/Farrow Road;
- Blaxland Road and Badgally Road;
- Badgally Road and Farrow Road/Watsford Road; and
- Farrow Road roundabout junction adjacent to the commuter car park.

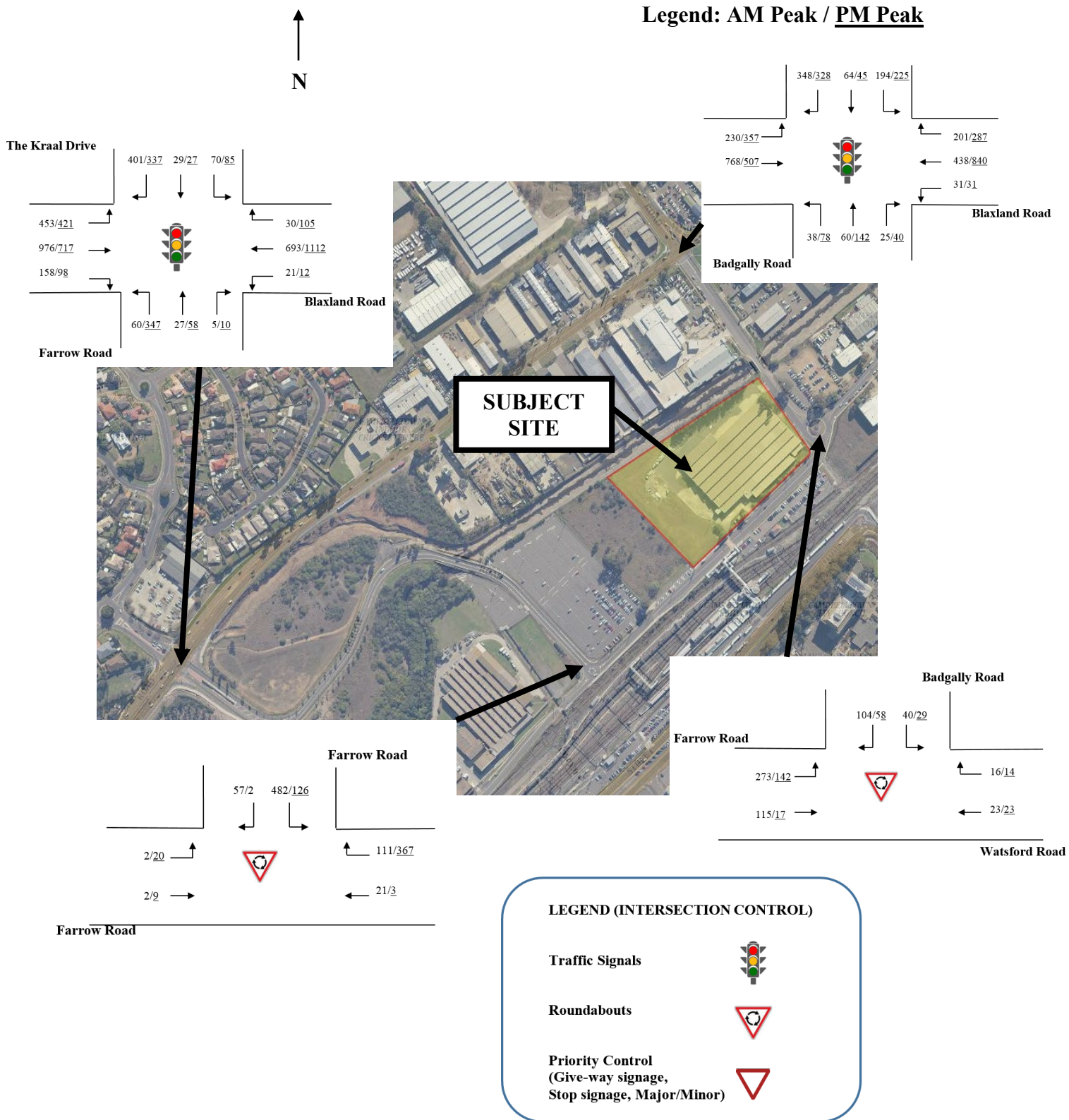
Figure 3 overleaf provides a diagrammatic illustration of the existing peak hour traffic volumes. In order to assess the existing operation of the surveyed intersections, reference is made to the SIDRA modelling output contained in Varga's Traffic Report. **Table 2** provides a summary of these results.

TABLE 2 SIDRA OUTPUT – EXISTING WEEKDAY PEAK HOUR PERFORMANCE		
Intersection	AM Peak	PM Peak
Blaxland Road & The Kraal Drive/Farrow Road		
Average Vehicle Delay	36.2	47.1
Degree of Saturation	0.84	0.91
Level of Service	C	D
Blaxland Road & Badgally Road		
Average Vehicle Delay	34.8	39.3
Degree of Saturation	0.94	0.90
Level of Service	C	C
Badgally Road & Watsford Road/Farrow Road		
Average Vehicle Delay	5.7	5.9
Degree of Saturation	0.28	0.13
Level of Service	A	A
Farrow Road Roundabout		
Average Vehicle Delay	6.5	7.3
Degree of Saturation	0.43	0.25
Level of Service	A	A

Table 2 indicates that all surveyed intersections in the vicinity of the development site operate with a good ('A') or satisfactory ('C/D') level of service during peak hour periods.

Recent observations have indicated that the existing peak hour traffic demands reflected in **Figure 3** and the existing traffic conditions in the surrounding road network have not varied to any significant extent.

FIGURE 3
EXISTING (2020) WEEKDAY PEAK HOUR TRAFFIC VOLUMES



5. **PROJECTED TRAFFIC CONDITIONS**

5.1 **Traffic Generation**

The following traffic generation methodology has been adopted in Varga's Traffic Report, which is primarily based on the traffic generation rates established within RMS' *Guide to Traffic Generating Developments* and its *Technical Direction TDT 2013/04a*:

“High Density Residential Flat Dwellings

AM: 0.19 peak hour vehicle trips per unit

PM: 0.15 peak hour vehicle trips per unit

Commercial Office Blocks

AM: 1.6 peak hour vehicle trips per 100m² GFA

PM: 1.2 peak hour vehicle trips per 100m² GFA

The RMS Guidelines do not nominate a traffic generation rate for small, local shops, referring only to major regional shopping centres incorporating supermarkets and department stores. For the purpose of this assessment therefore, the aforementioned traffic generation rates for commercial premises has been adopted in respect of the retail component of the development proposal.

Furthermore, the community component of the planning proposal is envisaged to provide leisure and recreational space for local residents living in the Campbelltown Centre that are within a walkable distance, and therefore could not be expected to attract or generate any appreciable amount of vehicular traffic.”

The close proximity of the site to public transport (e.g. Campbelltown Railway Station being located to the immediate south of the site, where there is also a bus interchange) is such that residents, employees and other users' of the development is expected to be encouraged to use such services, thereby reducing private vehicle trips on the surround road network.

This is consistent with the Department of Planning & Environment's *Campbelltown Precinct Plan*, which proposes a number of infrastructure upgrades/initiatives intended to promote greater adoption of active transport options (e.g. cycling and walking). In this regard, a discount factor of 10% has been conservatively applied to the projected peak hour traffic potentially generated by the Planning Proposal.

Table 3 overleaf provides a summary of the peak hour traffic generation based on the abovementioned approach and the likely development yield previously presented in **Table 1** of this report.

TABLE 3					
POST DEVELOPMENT TRAFFIC GENERATION					
Component	Traffic Generation Rate	Varga's Traffic Report		This Planning Proposal (including 10% discount)	
		AM Peak	PM Peak	AM Peak	PM Peak
Residential	AM: 0.19 peak hour vehicle trips per unit PM: 0.15 peak hour vehicle trips per unit	297.4	234.8	261.3	206.3
Retail	AM: 1.6 peak hour vehicle trips per 100m ² GFA PM: 1.2 peak hour vehicle trips per 100m ² GFA	71.7	53.8	41.6	31.2
Commercial	AM: 1.6 peak hour vehicle trips per 100m ² GFA PM: 1.2 peak hour vehicle trips per 100m ² GFA	26.9	20.2	248.7	186.5
Community	-	-	-	-	-
	Total	396	309	552 (+156 trips)	424 (+115 trips)

Table 3 indicates that the Planning Proposal forming the subject of this report is anticipated to result in an increase of 156 AM and 115 PM peak hour vehicle movements to/from the site over and above the projected traffic demands assessed in Varga's Traffic Report.

As a worst case assessment, it is noted that Varga's Traffic Report and this traffic assessment has not applied a deduction with respect to the peak hour traffic generated by the existing industrial land use on site.

5.2 Projected Intersection Performance

The additional peak hour traffic flows have been assigned within the surrounding road network in accordance with the existing surrounding traffic distributions illustrated within **Figure 3**. Based on the significant existing traffic demands along Blaxland Road and its intersections at The Kraal Drive/Farrow Road and Badgally Road (which facilitates direct access to the precinct including the subject site), the additional traffic generated by the subject development can be expected to have the greatest impact at these intersections.

In order to assess the post-development traffic impacts associated with the Planning Proposal, a SIDRA intersection analysis has been undertaken at Blaxland Road's intersections at The Kraal Drive/Farrow Road and Badgally Road based on projected peak hour traffic demands (i.e. existing base traffic volumes + additional traffic flows generated by the subject proposal). A summary of the most pertinent results are indicated within **Table 4** overleaf.

TABLE 4						
SIDRA OUTPUT – PROJECTED WEEKDAY PEAK HOUR PERFORMANCE						
	Existing (Varga's Traffic Report)		Projected (Varga's Traffic Report)		Projected (This Planning Proposal)	
Intersection	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Blaxland Road & The Kraal Drive/Farrow Road						
Average Vehicle Delay	36.2	47.1	37.9	48.9	40.3	51.2
Degree of Saturation	0.84	0.91	0.86	0.92	0.90	0.96
Level of Service	C	D	C	D	C	D
Blaxland Road & Badgally Road						
Average Vehicle Delay	34.8	39.3	34.9	39.4	37.3	34.9
Degree of Saturation	0.94	0.90	0.94	0.90	1.03	0.94
Level of Service	C	C	C	C	C	C

Table 4 indicates that the level of service at both intersections along Blaxland Road is projected to remain unaltered with the additional traffic generated by the subject proposal, despite some minor increases in the average vehicle delay and degree of saturation.

In addition to the above, it is noted that Varga's Traffic Report indicates that the local road intersections along Farrow Road in the immediate vicinity of the site is anticipated to operate with a good level of service 'A' during peak periods. The additional traffic demands associated with this subject proposal over and above what has been previously assessed is not expected to result in any significant decline to the operational performance of these local road intersections, with which the roundabout control provides safe and efficient manoeuvring throughout the precinct.

6. **CONCLUSION**

This Practice has undertaken an assessment of the potential traffic implications associated with a Planning Proposal to increase the commercial/retail floor area of a proposed mixed use development that is currently under assessment by Campbelltown City Council, within the site at 2 Farrow Road, Campbelltown. Based on this assessment, the following conclusions are now made:

- The subject proposal involves the following alterations to the recently submitted Application:
 - An increase of 13,997m² of commercial/retail floor space; and
 - A decrease of 37 residential dwellings.
- The surrounding road network is observed to currently operate with a good/satisfactory level of service during peak periods that is consistent with the outcomes presented in Varga's Traffic Report;
- The subject development has been projected to generate an additional 156 AM and 115 PM peak hour trips over and above the previous assessment; and
- Based on the SIDRA analysis, the subject proposal is projected to not have any unreasonable impacts on the level of safety and efficiency afforded by the existing surrounding road, pedestrian and public transport network to warrant any potential improvements.

Having regard to the conclusions abovementioned, this Practice is satisfied that the proposed development is worthy of support in relation to the traffic and transport issues discussed.