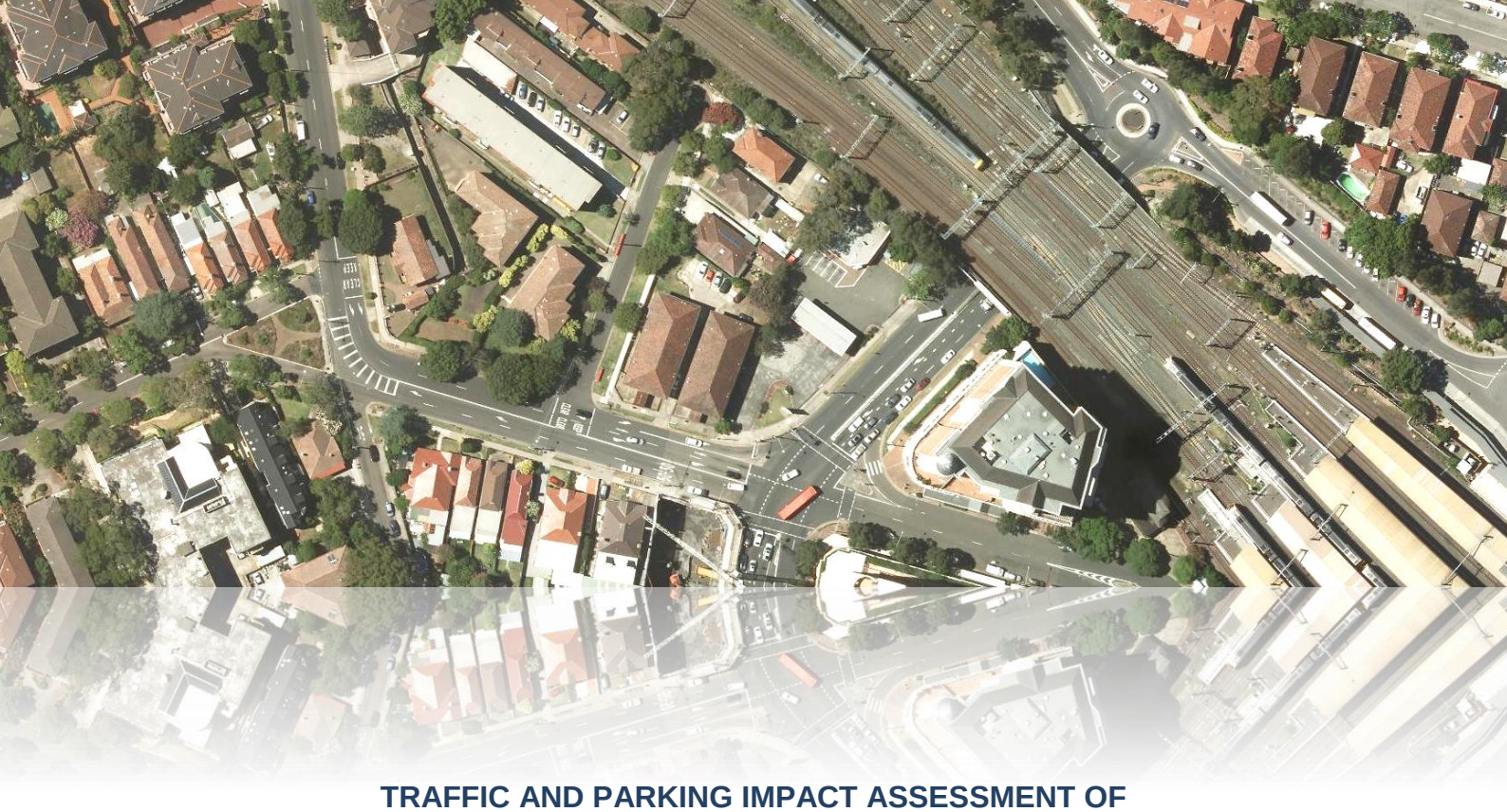

TRAFFIC AND PARKING IMPACT ASSESSMENT OF MIXED-USE DEVELOPMENT AT 2-6 PILGRIM AVENUE & 11-13 ALBERT ROAD, STRATHFIELD

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Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

17156.01FC - 6 February 2018

Development Type: **Mixed-Use Development**

Site Address: **2-6 Pilgrim Avenue & 11-13 Albert Road, Strathfield**

Prepared for: **Ethos Urban**

Document reference: **17156.01FC**

Status	Issue	Prepared By	Checked By	Date
Draft	A	BP	TH	21 April 2017
Final	A	TH		27 April 2017
Final	B	DW	TH	12 December 2017
Final	C	DW	CHM	6 February 2017

TABLE OF CONTENTS

1 INTRODUCTION

M^CLaren Traffic Engineering (MTE) was commissioned by *Ethos Urban* to provide a Traffic and Parking Impact Assessment of the Mixed-Use Development at 2-6 Pilgrim Avenue & 11-13 Albert Road, Strathfield as depicted in reduced plans reproduced in **Annexure A**.

1.1 Description and Scale of Development

The proposal includes two sites, upon which a total of four buildings are proposed. The development of Site 1 will include the amalgamation of a total of five (5) existing residential lots. The details of the site relevant to this traffic and parking impact assessment are summarised below:

- Site 1 includes the following:
    - 51 one-bedroom units;
    - 117 two-bedroom units;
    - 888m^2 ground floor retail area;
    - 5 levels of basement parking including 355 car parking spaces;
    - Two-way driveway access to Pilgrim Avenue.
- Site 2 includes the following:
    - 113 two-bedroom units;
    - 471m^2 ground floor retail area;
    - Two-way driveway access to Raw Square.

In addition to the above, a total of 30 parking spaces will be provided to the public for commuters.

1.2 State Environmental Planning Policy (Infrastructure) 2007

The proposal qualifies as a traffic generating development with relevant size and/or capacity and shall be assessed in accordance with Clause 104 of State Environmental Planning Policy (Infrastructure) 2007. Accordingly, formal referral to the Roads and Maritime Services (RMS) is necessary.

The site is located within the jurisdiction of Strathfield Council and is subject to their planning controls with the Joint Regional Planning Panel as the consent authority.

1.3 Site Description

Site 1 is located at 2-6 Pilgrim Avenue & 11-13 Albert Road, Strathfield, bounded by Pilgrim Avenue to the west, the state rail corridor to the north and Albert Road to the south and involves the amalgamation of the following five (5) existing residential lots:

- SP8785
- Lot 8 DP15917
- Lot 9 DP15917
- Lot A DP100558
- Lot B DP100558

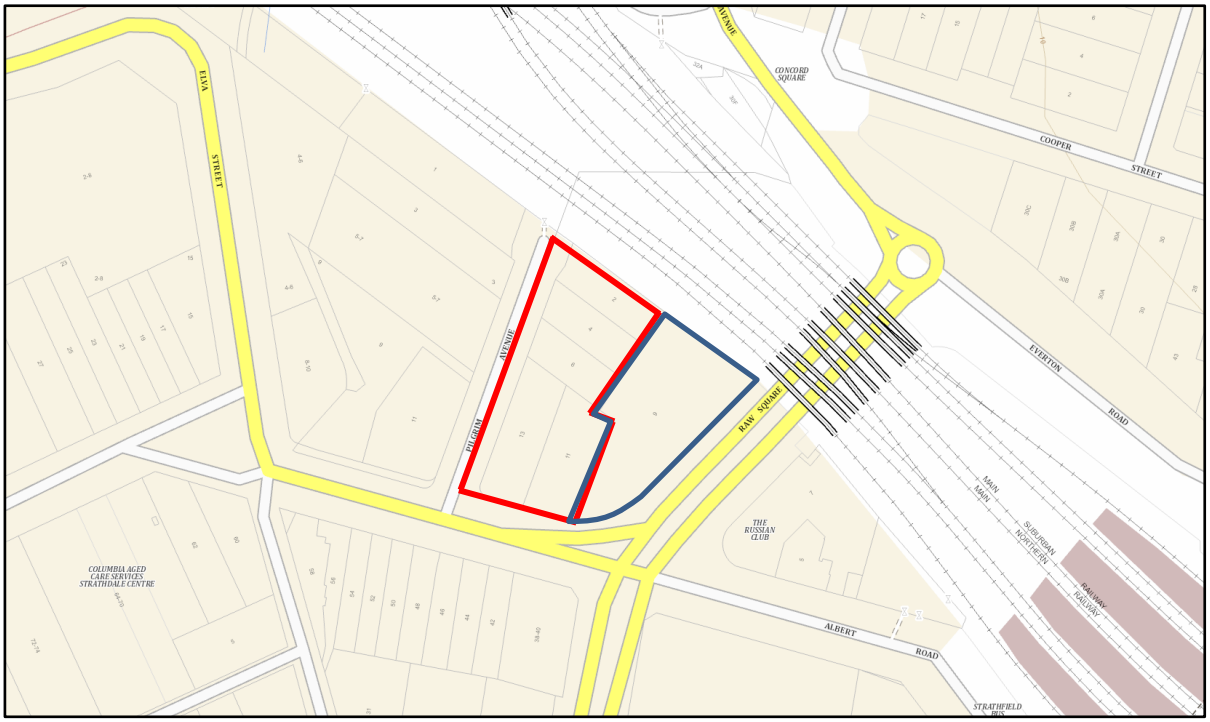
Site 2 is located at 9 Albert Road, Strathfield and is currently occupied by a Shell service station. The site has road frontages to Albert Street to the south and Raw Square to the east and is bounded by a state rail corridor to the north.

1.4 Site Context

The location of the two sites are shown on aerial imagery and a map in **Figure 1** & **Figure 2** respectively.

Site 1 Location **Site 2 Location**

FIGURE 1: SITE CONTEXT – AERIAL PHOTO



Site 1 Location Site 2 Location

FIGURE 2: SITE CONTEXT – STREET MAP

2 EXISTING TRAFFIC AND PARKING CONDITIONS

2.1 Road Hierarchy

The road network surrounding the site has the following characteristics:

2.1.1 Pilgrim Avenue

- Unclassified LOCAL Road;
- Approximately 6m wide two-way carriageway with a cul-de-sac arrangement at the end of the street;
- Signposted 50km/h speed limit;
- *"No Stopping"* restrictions apply along the western side of the road.

2.1.2 Albert Road

- RMS Classified REGIONAL Road (Road No. 2057);
- Approximately 15m wide two-way carriageway with three eastbound lanes on the approach to Raw Square and two westbound exit lanes;
- One-way eastbound to the east of Raw Square;
- Signposted 50km/h speed limit;
- Generally *"No Stopping"* along the northern side of the road;
- Generally *"No Parking"* on the southern side of the road.

2.1.3 Raw Square

- RMS Classified STATE Road (Road No. 668);
- Approximately 17m wide two-way carriageway, generally two lanes in each direction;
- Signposted 60km/h speed limit;
- Multiple kerbside parking restrictions along both sides of the road;
- Clearways exist within the kerbside lanes between the hours of 6-10am and 3-7pm Monday to Friday.

2.2 Existing Traffic Management

The surrounding traffic and pedestrian management controls include the following:

- Give Way T-junction at the intersection of Pilgrim Avenue / Albert Road;
- Cul-de-sac arrangement at end of Pilgrim Avenue (No Through Road);
- Signalised intersection at the junction of Albert Road / Raw Square. Pedestrian phases on all legs excluding Albert Road west approach;
- 60km/h speed limit on Raw Square, 50km/h speed limit on Albert Road and within Pilgrim Avenue;
- Clearways exist within kerbside lanes on either side of Raw Square enforced during the hours of 6-10am and 3-7pm Monday to Friday;
- Albert Road is one-way eastbound to the east of Raw Square;
- Pedestrian footpaths on either side of Pilgrim Avenue, Albert Road and Raw Square.

2.3 Existing Traffic and Parking Environment

Intersection surveys were carried out between 7-9am and 4-6pm on Thursday the 28th May 2015 at the intersections of Pilgrim Avenue / Albert Road and Albert Road / Raw Square. Supplementary intersection surveys were carried out between 7-9am and 4-7pm on Friday 1st December 2017 at the intersections of Raw Square / Albert Road and Raw Square / Leicester Avenue / Everton Rd. Survey data is reproduced in **Annexure B** for reference and a summary of results is presented below.

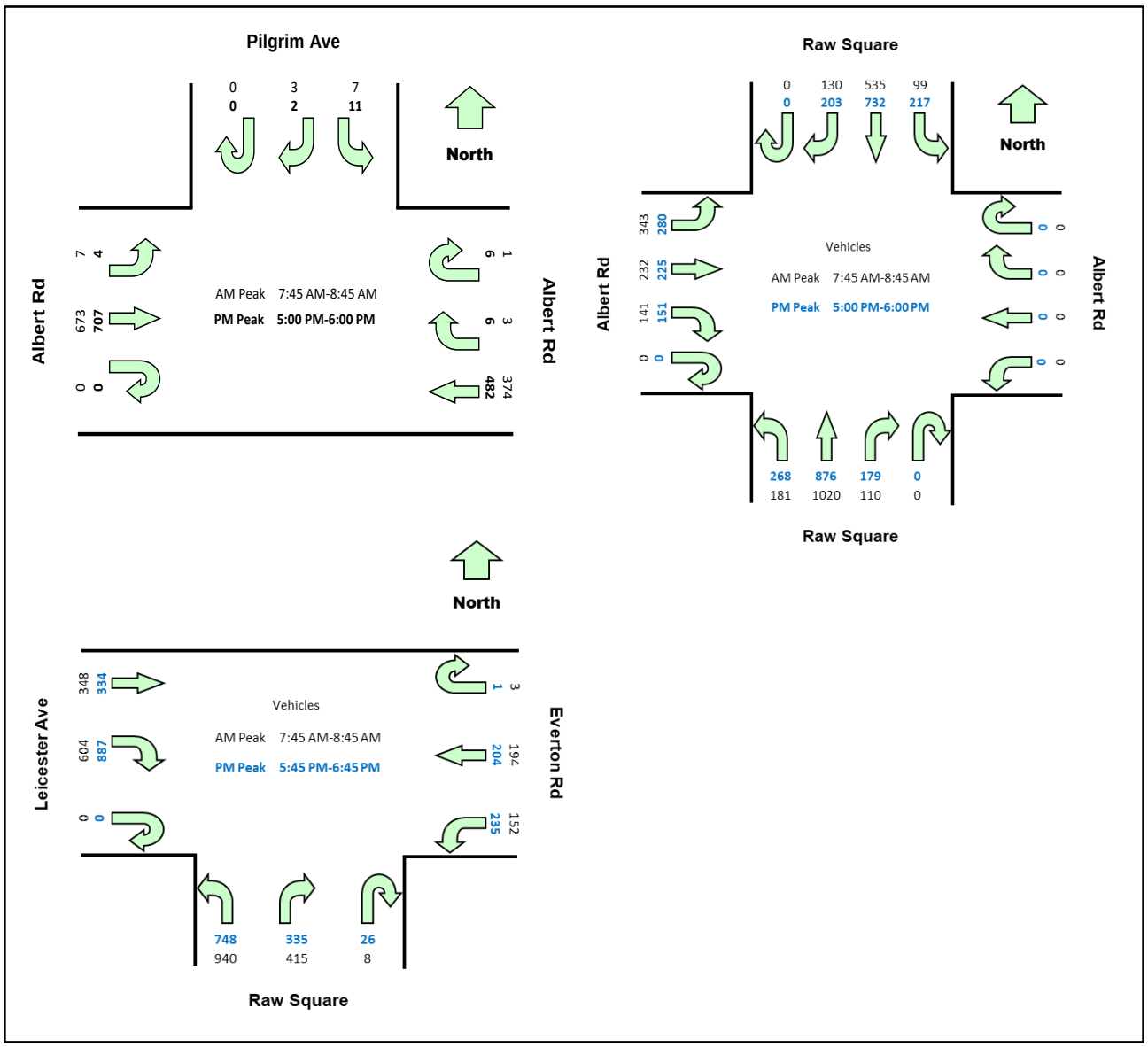


FIGURE 3: TRAFFIC COUNT RESULTS

2.3.1 Intersection Performances

Existing intersection performances have been assessed using SIDRA INTERSECTION 7. The results of this analysis are summarised in **Table 1** with detailed output reproduced in **Annexure C**.

TABLE 1: INTERSECTION PERFORMANCE – EXISTING
SIDRA INTERSECTION 7.0

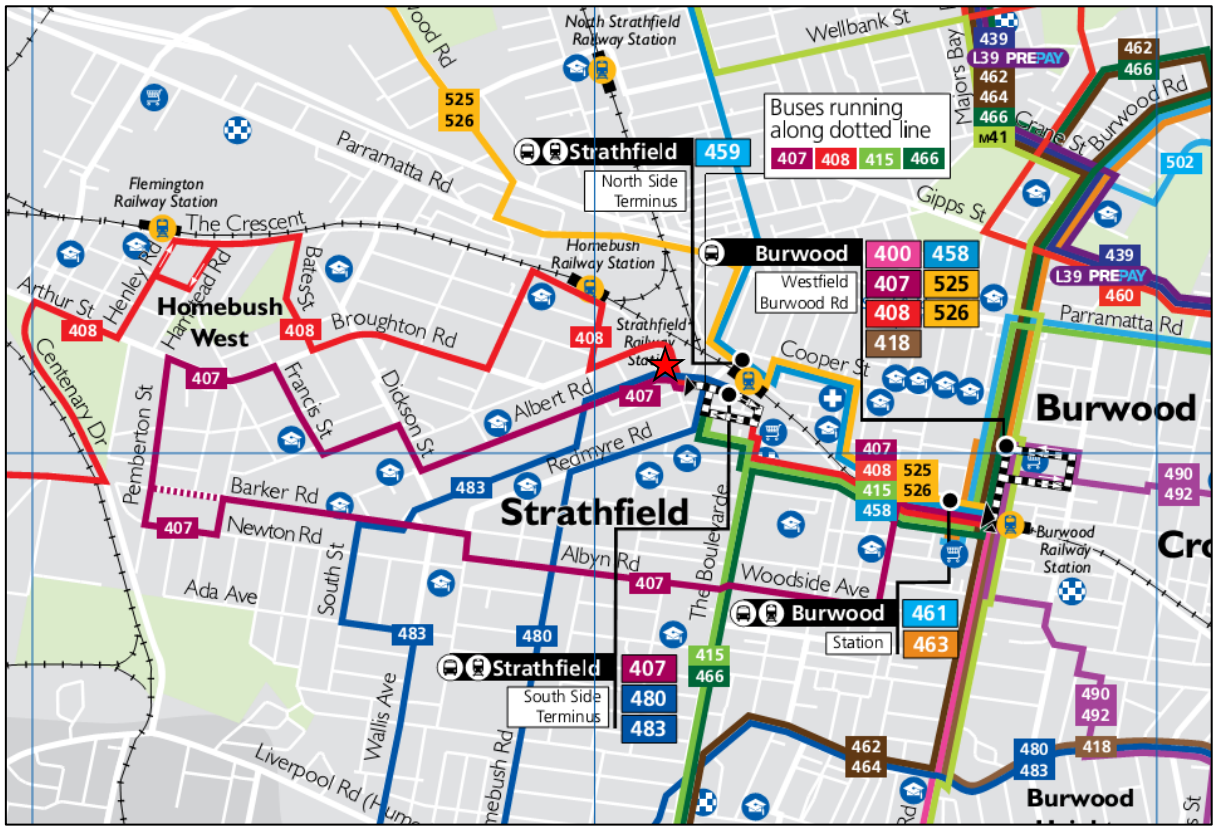
Intersection	Peak Hour	Degree of Saturation[1]	Average Delay[2] (sec/veh)	Level of Service[3]	Control Type	Worst Movement	95th Percentile Queue
EXISTING PERFORMANCE							
Albert Road / Pilgrim Avenue	AM	0.17	0.2 (Worst: 27)	**A** (Worst: B)	Give Way	RT from Pilgrim Avenue	0.1 veh (0.6m) Albert Road (E)
	PM	0.18	0.4 (Worst: 35.6)	**A** (Worst: C)		RT from Pilgrim Avenue	0.3 veh (2.1m) Albert Road (E)
Raw Square / Albert Road	AM	0.84	19.3	**B**	Signals	RT from Albert Road (W)	15.9 veh (111.6m) Raw Square (S)
	PM	0.92	27.2	**B**		RT from Raw Square (N)	20.8 veh (145.4m) Raw Square (N)
Raw Square / Everton Rd	AM	0.65	9.2 (Worst: 14.4)	**A** (Worst: A)	Roundabout	UT from Everton Rd (E)	5.6 veh (39.4m) Raw Square (S)
	PM	0.82	12.8 (Worst: 21.6)	**A** (Worst: B)		UT from Everton Rd (E)	13.3 veh (93m) Leicester (W)

NOTES:
(1) The Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
(2) The average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.
(3) The Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets.

As shown in **Table 1**, the intersections of Albert Road / Pilgrim Avenue, Raw Square / Albert Road and Raw Square / Leicester Ave currently experience generally good levels of service throughout the day (A and B LoS during AM and PM). Right turn volumes are not high though experience a slightly worse level of service due to through volumes on the major roads of each signalised intersection.

2.4 Public Transport

The subject site is located approximately 200m walking distance from Strathfield Railway Station which provides regular and frequent services along the T1 and T2 lines. Strathfield Bus Interchange is also located adjacent to Strathfield Railway Station, which provides numerous routes and services around Strathfield and to surrounding suburbs that are less accessible by trains. Therefore, it can be concluded that the site is well accessed via public transport and the residents, commuters and customers associated with the proposed development will not be disadvantaged in terms of public transport. The location of the site relative to the surrounding public transport infrastructure is illustrated in **Figure 4**.



Site Location

FIGURE 4: PUBLIC TRANSPORT CONTEXT

2.5 Future Road and Infrastructure Upgrades

According to Strathfield Council's website, there are no future planned road works in the vicinity of the site which will impact any proposed development on the site. Implementation of the Strathfield Town Centre Masterplan by Strathfield Council will occur at some stage in the future; improving the Town Centre Precinct public domain, urban design and pedestrianisation. Any street upgrades or the like are not considered to adversely impact the subject site.

3 PARKING ASSESSMENT

3.1 Council Parking Requirement

Reference is made to Strathfield Council's *Development Control Plan (DCP) 2005 – Part I: Provision of Off-Street Parking Facilities* and *Part C: Multiple Unit Housing* which designate the following minimum parking rates applicable to the subject development:

Residential Flat Buildings (DCP Part C) –

1 space per 1 bedroom dwelling

1.5 spaces per 2 bedroom dwelling

2 spaces per 3 bedroom dwelling

1 visitor space per 5 dwellings or part thereof

A designated car wash bay for a development of 10 or more dwellings

Commercial Premises (DCP Part I) –

1 space per 40m^2 of GFA

Retail (DCP Part I) –

6.2 spaces per 100m gross leaseable floor area.

The resulting car parking requirement is summarised in **Table 2**.

TABLE 2: CAR PARKING REQUIREMENTS

Land Use	Type	Scale	Rate	Spaces Required	Spaces Provided
SITE 1					
Residential	1 bedroom	51	1 space per unit	51	51
	2 bedroom	117	1.5 spaces per unit	175.5 (178)	178
	3 bedroom	0	2 spaces per unit	0	0
	Visitor	168	1 space per 5 dwellings	33.6 (34)	34
Non-Residential	Retail	888m^2	6.2 spaces per 100m^2	56	56
	Commuter			N/A	36
Site 1 Total				**319**	**355**
SITE 2					
Residential	2 bedroom	113	1.5 spaces per unit	169.5 (170)	Subject to Development by Others
	Visitor	113	1 space per 5 dwellings	22.6 (23)	
Non-Residential	Retail	471m^2	6.2 spaces per 100m^2	29.2 (30)	
Site 2 Total				**223**	
Total				**542**	**578(1)**

Notes: (1) – Subject to the development of the adjacent site including exactly 223 spaces.

As shown, a total of 542 car parking spaces are required for the two sites, consisting of 319 for Site 1 and 223 for Site 2.

These parking requirements outlined in Council's DCP shall be met by the development within the DA and Construction Certificate stages. The concept plans provided demonstrate that sufficient parking can physically be provided on-site, with the detailed design to be completed and assessed at the Development Application stage.

3.2 Bicycle & Motorcycle Parking Requirements

Council's DCP only states that s*uitable facilities for accommodating bicycle parking in all residential flat buildings must be provided* but does not outline any specific bicycle parking requirements.

Therefore, reference is made to Austroads Guide to Traffic Engineering Practice Part 14 – Bicycles which prescribes the following rates:

Residential

1 space per 4 units for residents

1 space per 16 units for visitors

Shop

1 per 300m^2 GFA for employees

1 per 500m^2 over 1000m^2 for shoppers

Application of these rates yields a total bicycle parking provision guideline of 95 bicycle spaces (70 for residents, 20 for visitors and 5 for staff).

All bicycle spaces shall be provided in accordance with the appropriate user class facilities as specified in *AS2890.3 – Bicycle Parking Facilities* and the *Austroads Guide to Traffic Engineering Practice – Part 14 – Bicycles*.

The DCP does not specify a parking rate for motorcycles and hence the development does not require a motorcycle parking provision.

3.3 Servicing & Loading

For commercial premises, Council's DCP states the following:

> *"Provision should be made for at least 1 courier parking space in a convenient and appropriately signposted location preferably with access off the principal street frontage. Additional parking for courier motorcycles would be desirable".*

No specific requirements are stated for residential developments. Detail of loading spaces will be defined in the Development Application Stage, however the scheme indicates that loading and servicing areas can be provided.

Given the scale of the development it is recommended to provide at least one loading/service bay on each site, however, there is also the potential for on-street waste collection in Pilgrim Avenue subject to Council's approval of a waste management plan. A service/loading bay has been shown in the concept layouts of both Site 1 and Site 2 on the ground level.

3.4 Disabled Parking

The required disabled parking should comply with those requirements set out in Council's DCP and the Building Code of Australia (BCA). For the proposed land-uses a rate of 1 disabled space per 100 parking spaces should be provided for visitors. The detailed design should take into consideration that 2.5m head clearance is required above disabled spaces and associated shared spaces.

3.5 Car Park Design & Compliance

Compliance assessments of vehicular access arrangements and internal parking layouts are subject to detailed design assessments at DA stages. The submitted concept plans appear to generally comply with AS2890.1, AS2890.2, AS2890.6 and AS4299 where applicable. Further, there is opportunity to comply with these standards and it is assumed that a compliant parking layout will be achieved at the DA stage.

4 TRAFFIC ASSESSMENT

The impact of the expected traffic generation levels associated with the subject proposal is discussed in the following sub-sections.

The assessment of traffic volumes generated by the development option has been conducted in accordance with the RMS *Guide to Traffic Generating Developments* (October 2002) and more recent supplements. The assessment takes the view that the overall Level of Service (LoS) of nearby critical intersections should be maintained whilst some increase in delay for individual movements could be tolerated, particularly for non-critical movements.

Additionally, along with the performance of the nearby critical intersections of Pilgrim Avenue / Albert Road and Albert Road / Raw Square, due consideration is to be given to the local area's road safety, traffic flow efficiency and local amenity.

4.1 Traffic Generation

As outlined above, the traffic generation rates have been based upon those specified in the RMS *Guide to Traffic Generating Developments* (October 2002). Updated data from the RMS (RMS Technical Direction TDT 2013/04) outlines reduced trip rates for high-density residential developments compared to those found in 2002. Further sensitivity is included by not discounting the existing traffic generation of the residential dwellings on Site 1 or the existing Service Station on Site 2. **Table 3** hence outlines a reasonable worst case traffic generation for the proposed development scale.

As shown, the maximum traffic generation associated with the proposed development is in the order of 160 vehicle trips in the AM and 149 vehicle trips in the PM (AM – 79 inbound and 81 outbound; PM – 72 inbound and 77 outbound) for the site. It should be noted that no reduction for the existing use of the site has been applied and that the above estimate of traffic generation is, therefore, a worst case.

4.2 Traffic Assignment

Given the location of the site, all traffic generation of the site is assumed to travel via Raw Square as a worst case scenario. As such, the traffic generated by the proposed development is assumed to follow that of the existing traffic assignment of Albert Rd, Raw Sq, Leicester and Everton Rd, such that, 33% will use Raw Square southbound and 67% of exiting vehicles will use Raw Square northbound. Of the 67% traveling northbound 70% will travel west along Leicester Road and 30% will travel east. Similarly, 60% of arriving vehicles will use Raw Square south and 40% will use Raw Square north comprising of 70% from Leicester (west) and 30% from Everton (east).

4.3 Traffic Impact

The traffic generation outlined in **Section 4.1 & 4.2** above has been added to the existing traffic volumes recorded. SIDRA INTERSECTION 7.0 was used to assess the performance of the surrounding intersections. The purpose of this assessment is to compare the existing intersection operations to the future scenario under the increased traffic load. The results of this assessment are shown in **Table 4**.

TABLE 3: TRAFFIC GENERATION OF SITE

Land-Use	Scale	Peak Hour Rate	Peak Hour Generation (AM/PM)	Peak Hour Split	
				AM	PM
SITE 1					
Residential	168 units	0.19/0.15 per unit(1)(2)	32/25	6 in 26 out	20 in 5 out
Retail	888m^2 GFA	5.6 trips per 100m^2(3)	50	25 in 25 out	25 in 25 out
Public Parking	30 units	1 per space(4)	30	30 in 0 out	0 in 30 out
Site 1 Total			**112/105**	**61 in 51 out**	**45 in 60 out**
SITE 2					
Residential	113 units	0.19/0.15 per unit(1)(2)	21/17	4 in 17 out	14 in 3 out
Retail	471m^2 GFA	5.6 trips per 100m^2(3)	27	14 in 13 out	13 in 14 out
Site 2 Total			**48/44**	**18 in 30 out**	**27 in 17 out**
Total	**-**	**-**	**160/149**	**79 in 81 out**	**72 in 77 out**

Notes: (1) 0.19 trips in the AM peak hour, 0.15 trips in the PM peak hour;
(2) Assumes 20% inbound & 80% outbound during AM peak: Vice versa for PM.
(3) Assumes 50% inbound & 50% outbound during both AM and PM peaks.
(4) Assumed as a worst case, 100% inbound & 0% outbound during AM peak. Vice versa for PM

TABLE 4: INTERSECTION PERFORMANCES - FUTURE (SIDRA INTERSECTION 7.0)

Intersection	Peak Hour	Degree of Saturation[1]	Average Delay[2] (sec/veh)	Level of Service[3]	Control Type	Worst Movement	95th Percentile Queue
EXISTING PERFORMANCE							
Albert Road / Pilgrim Avenue	AM	0.17	0.2 (Worst: 27)	**A** (Worst: B)	Give Way	RT from Pilgrim Avenue	0.1 veh (0.6m) Albert Road (E)
	PM	0.18	0.4 (Worst: 35.6)	**A** (Worst: C)		RT from Pilgrim Avenue	0.3 veh (2.1m) Albert Road (E)
Raw Square / Albert Road	AM	0.84	19.3	**B**	Signals	RT from Albert Road (W)	15.9 veh (111.6m) Raw Square (S)
	PM	0.92	27.2	**B**		RT from Raw Square (N)	20.8 veh (145.4m) Raw Square (N)
Raw Square / Everton Rd	AM	0.65	9.2 (Worst: 14.4)	**A** (Worst: A)	Roundabout	UT from Everton Rd (E)	5.6 veh (39.4m) Raw Square (S)
	PM	0.82	12.8 (Worst: 21.6)	**A** (Worst: B)		UT from Everton Rd (E)	13.3 veh (93m) Leicester (W)
FUTURE PERFORMANCE							
Pilgrim Avenue / Albert Road	AM	0.17	1.2 (Worst: 31.3)	**A** (Worst: C)	Give Way	RT from Pilgrim Avenue	0.8 veh (5.9m) Albert Road (E)
	PM	0.18	1.2	**A**		RT from Pilgrim Avenue	1 veh (7.1m) Albert Road (E)
Raw Square / Albert Road	AM	0.87	20.7 (Worst: 32.9)	**B** (Worst: C)	Signals	RT from Raw Square (N)	17.9 veh (125.1m) Raw Square (S)
	PM	0.92	28	**B**		RT from Raw Square (N)	21 veh (147.2m) Raw Square (N)
Raw Square / Everton Rd	AM	0.67	9.6 (Worst: 14.8)	**A** (Worst: B)	Roundabout	UT from Everton Rd (E)	6.3 veh (44.1m) Raw Square (S)
	PM	0.86	14.9 (Worst: 24.1)	**B** (Worst: B)		UT from Everton Rd (E)	17.2 veh (120.2m)
Raw Square / Driveway	AM	0.41	0.2 (Worst: 10.9)	**A** (Worst: A)	Give Way	LT from Driveway	0.2 veh (1.6m) Driveway
	PM	0.35	0.2 (Worst: 9.2)	**A** (Worst: A)		LT from Driveway	0.1 veh (0.7m) Driveway

NOTES:
(1) The Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
(2) The average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.
(3) The Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets.

The SIDRA intersection model indicates that there will be negligible impact on the surrounding road network as a result of the traffic generated by the proposed development of both Site 1 and Site 2. Nearly all relevant intersections maintain their existing Level of Service, with no significant increase in delay times or queue lengths predicted. The change in Level of Service occurs at the intersection of Raw Square / Everton Road / Leicester Ave which increases from LoS A to LoS B during the PM peak period. Level of Service B however, still has the characteristic of minimal delays and spare capacity and as such is not significantly detrimental to the intersections performance. It should be noted that a worst case has been modelled, with no consideration given to the existing traffic generation of the sites.

5 CONCLUSION

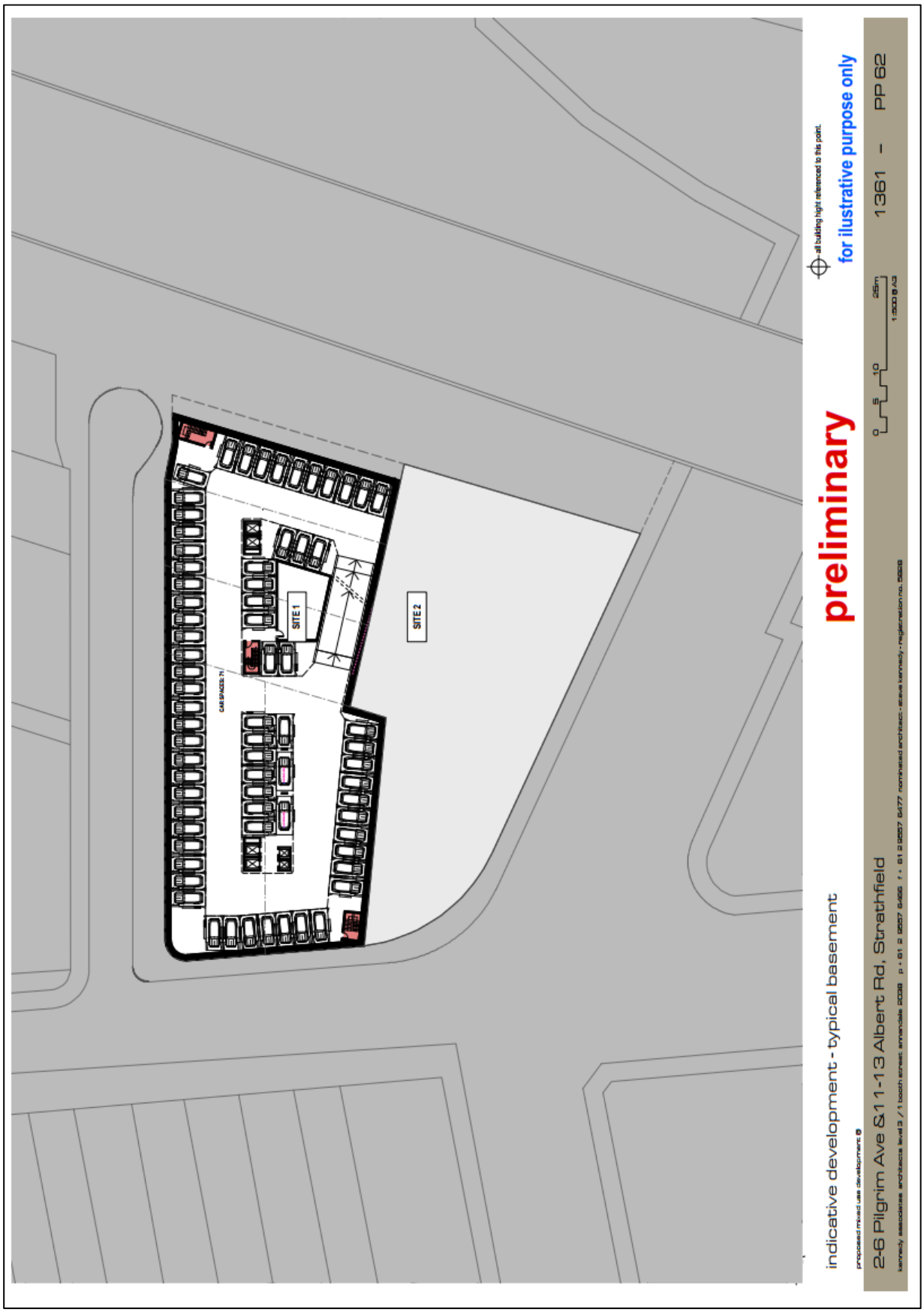
In summary, the planning proposal for two sites at 2-6 Pilgrim Avenue & 11-13 Albert Road, Strathfield and 9 Albert Road, Strathfield for 280 residential units and 1403m^2 GFA of retail space has been assessed on its traffic and parking impacts.

The planning proposal has the capacity to provide some 583 car parking spaces, including 30 spaces for public commuter parking, across 5 basement levels and ground floor, exceeding the requirements of Council's DCP. The concept plans include appropriate loading and servicing facilities and the site has the capacity to meet the requirements of the DCP with regards to both bicycle storage and disabled parking, which can be detailed at the Development Application stage.

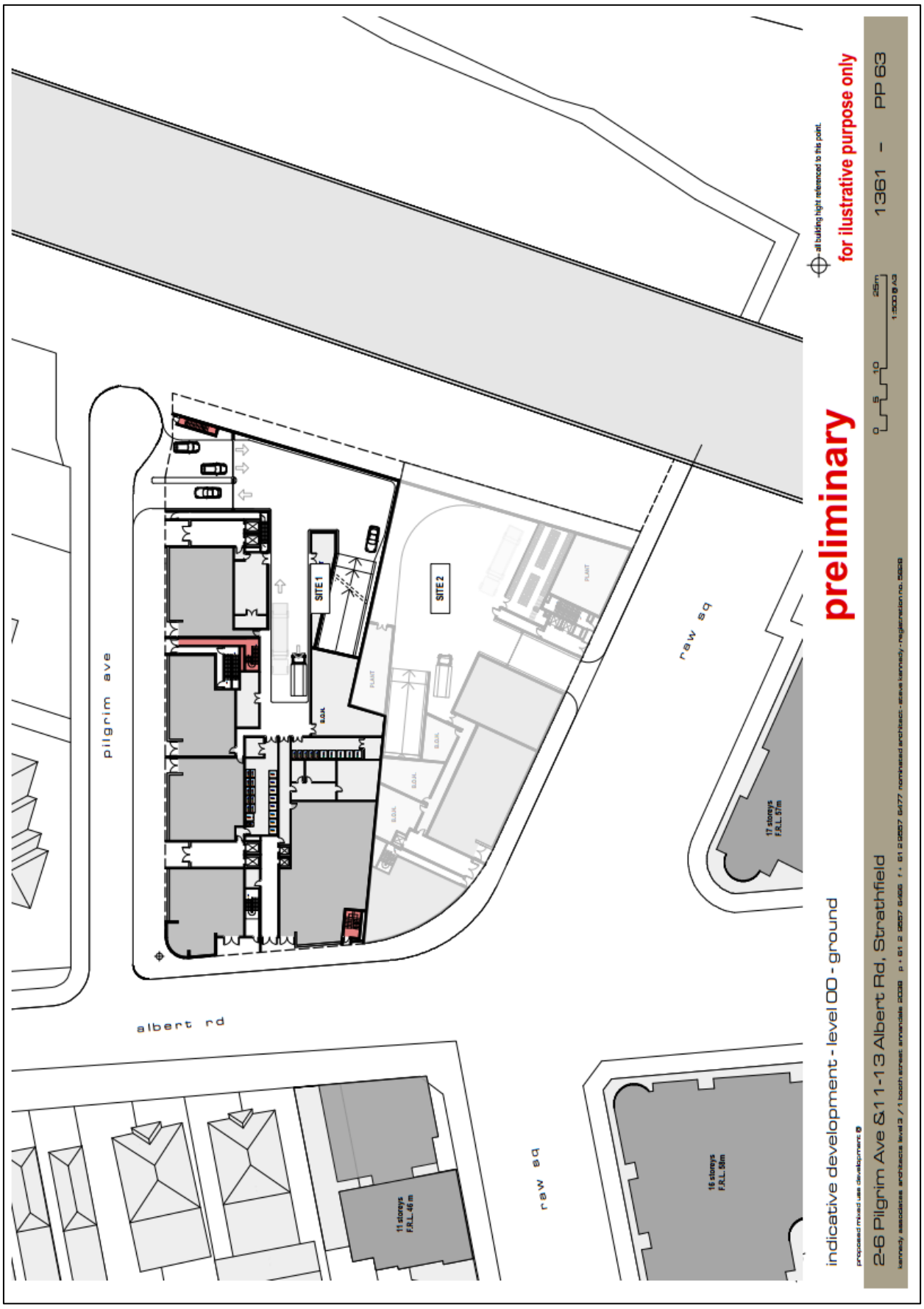
The traffic generation associated with the two sites, estimated at a total of 160 vehicle trips in the AM and 149 vehicle trips in the PM (AM – 79 inbound and 81 outbound; PM – 72 inbound and 77 outbound) has been shown to have no noticeable impact on the surrounding road network in terms of intersection delays or queue lengths.

In view of the foregoing, the planning proposal for high-density residential with ground floor retail on the two subject sites is fully supported in terms of traffic and parking impacts.

ANNEXURE A: PROPOSED PLANS
(SHEET 1 OF 2)



ANNEXURE A: PROPOSED PLAN
(SHEET 2 OF 2)



ANNEXURE B: TRAFFIC, PARKING AND SPEED SURVEYS
(SHEET 1 OF 3)

BVY TRAFFIC SURVEY
ABN 18 434 565 435
3 Hepburn Way * Caroline Springs * Victoria * 3023 * Australia
Quality data services proven since 2000 Phone: 1300 883 936 * Fax: 1300 882 932

QUALITY ENDORSED COMPANY BY AS/NZS ISO 9001:2008
OH&S SYSTEM CERTIFIED TO AS/NZS ISO 4801:2001

TURNING MOVEMENT SURVEY
Pilgrim Ave and Albert Rd, Strathfield
Thursday, 28 May 2015

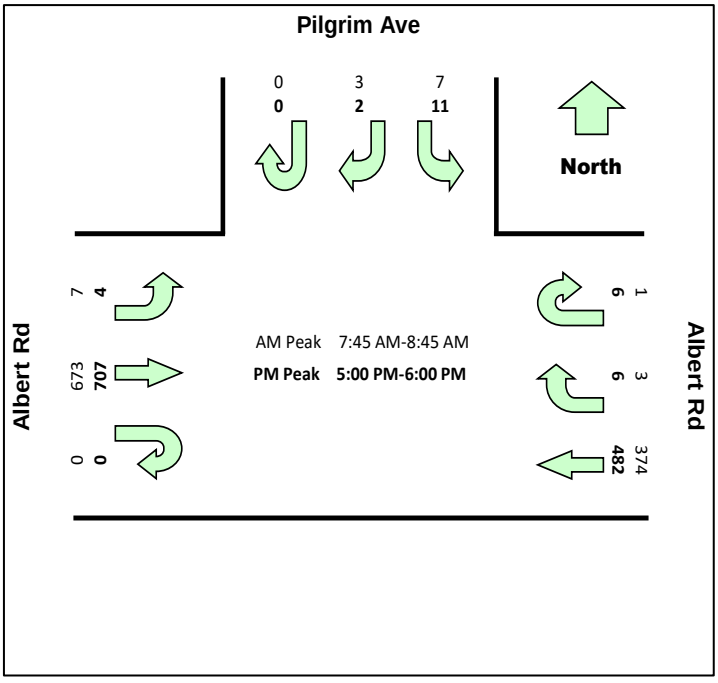
Weather:	Overcast
Suburban:	Strathfield
Customer:	McLaren

Survey Start	
AM:	7:00
PM:	16:00

Peakhour	
AM:	7:45 AM-8:45 AM
PM:	5:00 PM-6:00 PM

Time		North Approach Pilgrim Ave			East Approach Albert Rd			West Approach Albert Rd			Hourly Total	
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	Hour	Peak
7:00	7:15	0	2	3	0	1	59	0	98	2	790	
7:15	7:30	0	0	1	1	0	65	0	121	0	901	
7:30	7:45	0	1	0	0	0	75	0	132	0	1012	
7:45	8:00	0	1	1	1	1	71	0	152	2	1068	Peak
8:00	8:15	0	0	3	0	0	101	0	171	1	839	
8:15	8:30	0	0	3	0	2	105	0	186	3		
8:30	8:45	0	2	0	0	0	97	0	164	1		
8:45	9:00	0	0	2	0	0	71	0	159	0		
16:00	16:15	0	1	0	2	2	103	0	133	1	1011	
16:15	16:30	0	0	2	1	3	124	0	117	1	1068	
16:30	16:45	0	2	4	1	3	112	0	125	0	1118	
16:45	17:00	0	0	1	1	2	130	0	137	3	1181	
17:00	17:15	0	1	6	0	2	137	0	151	2	1218	Peak
17:15	17:30	0	1	4	1	2	108	0	182	0		
17:30	17:45	0	0	0	1	0	118	0	190	1		
17:45	18:00	0	0	1	4	2	119	0	184	1		

Peak Time		North Approach Pilgrim Ave			East Approach Albert Rd			West Approach Albert Rd			Peak
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	total
7:45	8:45	0	3	7	1	3	374	0	673	7	1068
17:00	18:00	0	2	11	6	6	482	0	707	4	1218



ANNEXURE B: TRAFFIC, PARKING AND SPEED SURVEYS
(SHEET 2 OF 3)

TRANS TRAFFIC SURVEY trafficsurvey.com.au

TURNING MOVEMENT SURVEY

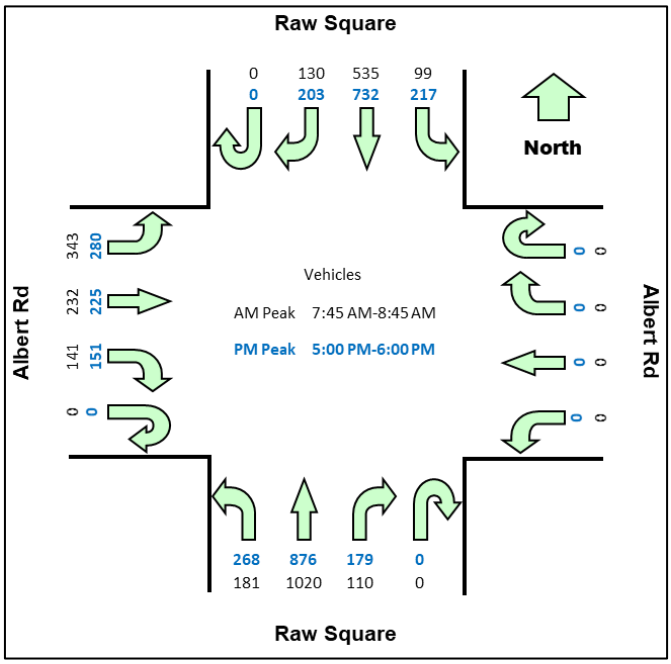
Intersection of Raw Square and Albert Rd, Strathfield

Date:	Fri 01/12/17	***North:***	Raw Square	**Survey Start**	AM:	7:00	PM: 16:00
Weather:	Overcast	***East:***	Albert Rd	**Vehicular Peakhour**		**Pedestrians Peakhour**	
Suburban:	Strathfield	***South:***	Raw Square	AM:	7:45 AM-8:45 AM	AM:	N/A
Customer:	McLaren	***West:***	Albert Rd	PM:	5:00 PM-6:00 PM	PM:	N/A

All Vehicles

Time		North Approach Raw Square				East Approach Albert Rd				South Approach Raw Square				West Approach Albert Rd				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	21	82	20	0	0	0	0	0	22	204	18	0	24	38	44	2373	
7:15	7:30	0	14	99	23	0	0	0	0	0	24	214	40	0	19	44	60	2547	
7:30	7:45	0	34	134	30	0	0	0	0	0	30	234	41	0	33	52	68	2727	
7:45	8:00	0	34	139	30	0	0	0	0	0	37	247	46	0	30	61	83	2791	Peak
8:00	8:15	0	30	104	24	0	0	0	0	0	19	267	37	0	30	51	85	2746	
8:15	8:30	0	31	135	15	0	0	0	0	0	37	269	40	0	45	57	88		
8:30	8:45	0	35	157	30	0	0	0	0	0	17	237	58	0	36	63	87		
8:45	9:00	0	39	131	49	0	0	0	0	0	16	219	34	0	41	47	86		
16:00	16:15	0	42	177	43	0	0	0	0	0	30	231	71	0	31	43	58	2910	
16:15	16:30	0	48	153	47	0	0	0	0	0	30	200	68	0	39	47	67	2995	
16:30	16:45	0	52	162	47	0	0	0	0	0	35	200	56	0	57	57	84	3087	
16:45	17:00	0	37	215	48	0	0	0	0	0	38	175	46	0	43	54	79	3109	
17:00	17:15	0	64	199	59	0	0	0	0	0	37	214	71	0	29	65	73	3131	Peak
17:15	17:30	0	45	183	51	0	0	0	0	0	42	228	78	0	39	58	67	3058	
17:30	17:45	0	41	188	52	0	0	0	0	0	57	226	60	0	33	56	59	3035	
17:45	18:00	0	53	162	55	0	0	0	0	0	43	208	59	0	50	46	81	3047	
18:00	18:15	0	40	179	57	0	0	0	0	0	55	219	59	0	38	42	49	3005	
18:15	18:30	0	59	192	59	0	0	0	0	0	48	204	61	0	40	44	61		
18:30	18:45	0	60	164	68	0	0	0	0	0	48	215	69	0	32	56	72		
18:45	19:00	0	39	134	77	0	0	0	0	0	43	206	60	0	32	52	72		

Peak Time		North Approach Raw Square				East Approach Albert Rd				South Approach Raw Square				West Approach Albert Rd				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
7:45	8:45	0	130	535	99	0	0	0	0	0	110	1020	181	0	141	232	343	2791
17:00	18:00	0	203	732	217	0	0	0	0	0	179	876	268	0	151	225	280	3131



ANNEXURE B: TRAFFIC, PARKING AND SPEED SURVEYS
(SHEET 3 OF 3)

TRANS TRAFFIC SURVEY trafficsurvey.com.au

TURNING MOVEMENT SURVEY

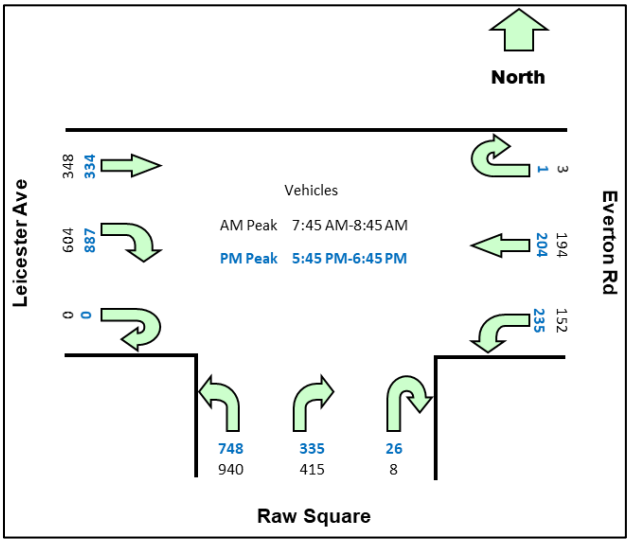
Intersection of Raw Square and Everton Rd, Strathfield

Date:	Fri 01/12/17	***North:***	N/A	**Survey Start**	AM:	7:00	PM: 16:00
Weather:	Overcast	***East:***	Everton Rd	**Vehicular Peakhour**		**Pedestrians Peakhour**	
Suburban:	Strathfield	***South:***	Raw Square	AM:	7:45 AM-8:45 AM	AM:	N/A
Customer:		***West:***	Leicester Ave	PM:	5:45 PM-6:45 PM	PM:	N/A

All Vehicles

Time		East Approach Everton Rd			outh Approach Raw Squar			est Approach Leicester Av			Hourly Total	
Period Star	Period End	U	WB	L	U	R	L	U	R	EB	Hour	Peak
7:00	7:15	0	34	19	8	64	176	0	96	66	2252	
7:15	7:30	0	34	18	3	69	202	0	115	68	2423	
7:30	7:45	1	37	42	3	73	226	0	153	86	2600	
7:45	8:00	0	47	35	4	92	234	0	164	83	2664	Peak
8:00	8:15	2	39	32	2	109	241	0	124	85	2650	
8:15	8:30	1	54	54	1	105	251	0	126	94		
8:30	8:45	0	54	31	1	109	214	0	190	86		
8:45	9:00	1	44	29	3	111	204	0	175	78		
16:00	16:15	0	34	57	2	86	201	0	203	59	2571	
16:15	16:30	2	57	62	9	87	171	0	177	37	2640	
16:30	16:45	2	54	45	4	90	190	0	212	52	2728	
16:45	17:00	0	54	37	4	65	185	0	259	74	2742	
17:00	17:15	0	51	54	8	89	190	0	260	59	2746	
17:15	17:30	0	42	63	3	86	206	0	213	77	2694	
17:30	17:45	0	47	56	6	82	197	0	219	56	2715	
17:45	18:00	0	43	55	6	110	173	0	209	86	2770	Peak
18:00	18:15	0	41	47	4	79	185	0	225	78	2726	
18:15	18:30	1	55	62	6	69	190	0	242	86		
18:30	18:45	0	65	71	10	77	200	0	211	84		
18:45	19:00	2	40	61	4	85	189	0	185	72		

Peak Time		East Approach Everton Rd			outh Approach Raw Squar			est Approach Leicester Av			Peak
Period Star	Period End	U	WB	L	U	R	L	U	R	EB	total
7:45	8:45	3	194	152	8	415	940	0	604	348	2664
17:45	18:45	1	204	235	26	335	748	0	887	334	2770



MOVEMENT SUMMARY

Site: 1 [EX AM - ALB / RAW]

Network: N101 [Network1 AM EX]

Albert Road / Raw Square
AM Peak Period
Existing Conditions
Signals - Fixed Time Coordinated Cycle Time = 50 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Raw Square (S)													
1	L2	191	0.0	191	0.0	0.842	23.0	LOS B	15.9	111.6	0.91	0.94	37.4
2	T1	1074	0.0	1074	0.0	0.842	18.7	LOS B	15.9	111.6	0.92	0.94	13.1
3	R2	116	0.0	116	0.0	0.520	28.9	LOS C	2.8	19.8	0.96	0.78	31.7
Approach		1380	0.0	1380	0.0	0.842	20.1	LOS B	15.9	111.6	0.92	0.93	22.1
North: Raw Square (N)													
7	L2	104	0.0	104	0.0	0.056	5.6	LOS A	0.0	0.0	0.00	0.53	52.3
8	T1	563	0.0	563	0.0	0.443	12.5	LOS A	6.1	42.9	0.77	0.65	29.8
9	R2	137	0.0	137	0.0	0.614	30.6	LOS C	3.5	24.6	0.99	0.83	32.6
Approach		804	0.0	804	0.0	0.614	14.7	LOS B	6.1	42.9	0.71	0.66	34.5
West: Albert Road (W)													
10	L2	361	0.0	361	0.0	0.512	17.7	LOS B	6.0	42.3	0.71	0.77	38.4
11	T1	244	0.0	244	0.0	0.733	25.2	LOS B	5.2	36.1	0.99	0.87	42.2
12	R2	148	0.0	148	0.0	0.733	30.8	LOS C	5.0	34.8	0.99	0.87	31.5
Approach		754	0.0	754	0.0	0.733	22.7	LOS B	6.0	42.3	0.86	0.82	38.6
All Vehicles		2938	0.0	2938	0.0	0.842	19.3	LOS B	15.9	111.6	0.84	0.83	31.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 102 [EX AM - EVRT / RAW]

Network: N101 [Network1 AM EX]

Everton Rd / Raw Square
AM Peak Period
Existing Conditions
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Raw Square (S)													
1	L2	989	0.0	989	0.0	0.647	7.0	LOS A	5.6	39.4	0.48	0.65	47.0
3	R2	437	0.0	437	0.0	0.647	9.9	LOS A	5.6	39.4	0.48	0.68	33.9
3u	U	8	0.0	8	0.0	0.647	11.6	LOS A	5.6	39.4	0.48	0.68	28.9
Approach		1435	0.0	1435	0.0	0.647	7.9	LOS A	5.6	39.4	0.48	0.66	44.2
East: Everton Rd (E)													
4	L2	160	0.0	160	0.0	0.526	9.2	LOS A	3.4	24.1	0.75	0.93	27.5
5	T1	204	0.0	204	0.0	0.526	9.4	LOS A	3.4	24.1	0.75	0.93	46.7
6u	U	3	0.0	3	0.0	0.526	14.4	LOS A	3.4	24.1	0.75	0.93	31.7
Approach		367	0.0	367	0.0	0.526	9.4	LOS A	3.4	24.1	0.75	0.93	42.2
West: Leicester (W)													
11	T1	366	0.0	366	0.0	0.550	8.9	LOS A	5.2	36.5	0.80	0.76	46.4
12	R2	636	0.0	636	0.0	0.550	12.3	LOS A	5.2	36.5	0.80	0.78	42.6
Approach		1002	0.0	1002	0.0	0.550	11.0	LOS A	5.2	36.5	0.80	0.78	44.1
All Vehicles		2804	0.0	2804	0.0	0.647	9.2	LOS A	5.6	39.4	0.63	0.74	43.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 1 [EX PM - ALB / RAW]

Network: N102 [Network2 PM EX]

Albert Road / Raw Square
PM Peak Period
Existing Conditions
Signals - Fixed Time Coordinated Cycle Time = 80 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Raw Square (S)													
1	L2	282	0.0	282	0.0	0.628	16.0	LOS B	13.2	92.1	0.60	0.64	41.9
2	T1	922	0.0	922	0.0	0.628	12.3	LOS A	13.8	96.5	0.62	0.59	17.4
3	R2	188	0.0	188	0.0	0.451	20.6	LOS B	3.8	26.7	0.85	0.77	36.3
Approach		1393	0.0	1393	0.0	0.628	14.2	LOS A	13.8	96.5	0.65	0.63	30.6
North: Raw Square (N)													
7	L2	228	0.0	228	0.0	0.123	5.6	LOS A	0.0	0.0	0.00	0.53	52.3
8	T1	771	0.0	771	0.0	0.909	43.9	LOS D	20.8	145.4	0.92	1.06	13.1
9	R2	214	0.0	214	0.0	0.920	58.1	LOS E	10.4	73.1	1.00	1.08	23.4
Approach		1213	0.0	1213	0.0	0.920	39.2	LOS C	20.8	145.4	0.76	0.96	21.4
West: Albert Road (W)													
10	L2	295	0.0	295	0.0	0.438	25.2	LOS B	7.6	53.3	0.70	0.76	33.3
11	T1	237	0.0	237	0.0	0.637	35.3	LOS C	7.5	52.5	0.96	0.80	37.8
12	R2	159	0.0	159	0.0	0.637	41.0	LOS C	7.2	50.6	0.96	0.82	27.3
Approach		691	0.0	691	0.0	0.637	32.3	LOS C	7.6	53.3	0.85	0.79	33.9
All Vehicles		3296	0.0	3296	0.0	0.920	27.2	LOS B	20.8	145.4	0.73	0.78	27.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 2.9 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 102 [EX PM - EVRT / RAW]

Network: N102 [Network2 PM EX]

Everton Rd / Raw Square
PM Peak Period
Existing Conditions
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Raw Square (S)													
1	L2	787	0.0	787	0.0	0.547	6.7	LOS A	4.1	29.0	0.50	0.65	47.0
3	R2	353	0.0	353	0.0	0.547	9.6	LOS A	4.0	28.0	0.50	0.68	33.9
3u	U	27	0.0	27	0.0	0.547	11.3	LOS A	4.0	28.0	0.50	0.68	29.0
Approach		1167	0.0	1167	0.0	0.547	7.7	LOS A	4.1	29.0	0.50	0.66	44.0
East: Everton Rd (E)													
4	L2	247	0.0	247	0.0	0.822	16.5	LOS B	7.4	52.1	0.92	1.17	19.3
5	T1	215	0.0	215	0.0	0.822	16.7	LOS B	7.4	52.1	0.92	1.17	40.2
6u	U	1	0.0	1	0.0	0.822	21.6	LOS B	7.4	52.1	0.92	1.17	25.2
Approach		463	0.0	463	0.0	0.822	16.6	LOS B	7.4	52.1	0.92	1.17	32.9
West: Leicester (W)													
11	T1	352	0.0	352	0.0	0.795	13.2	LOS A	13.3	93.0	0.97	0.94	41.7
12	R2	934	0.0	934	0.0	0.795	17.2	LOS B	13.3	93.0	0.87	0.95	38.1
Approach		1285	0.0	1285	0.0	0.795	16.1	LOS B	13.3	93.0	0.90	0.95	39.2
All Vehicles		2916	0.0	2916	0.0	0.822	12.8	LOS A	13.3	93.0	0.74	0.87	40.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 2.9 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 1 [FUT AM - ALB / RAW]

Network: N101 [Network1 AM FUT]

Albert Road / Raw Square
AM Peak Period
Future Conditions
Signals - Fixed Time Coordinated Cycle Time = 50 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Raw Square (S)													
1	L2	241	0.0	241	0.0	0.871	24.6	LOS B	17.9	125.1	0.92	1.00	36.2
2	T1	1074	0.0	1074	0.0	0.871	20.6	LOS B	17.9	125.1	0.94	1.00	12.0
3	R2	116	0.0	116	0.0	0.520	28.9	LOS C	2.8	19.8	0.96	0.78	31.7
Approach		1431	0.0	1431	0.0	0.871	22.0	LOS B	17.9	125.1	0.94	0.98	21.8
North: Raw Square (N)													
7	L2	104	0.0	104	0.0	0.056	5.6	LOS A	0.0	0.0	0.00	0.53	52.3
8	T1	563	0.0	563	0.0	0.443	12.5	LOS A	6.1	42.9	0.77	0.65	29.8
9	R2	172	0.0	172	0.0	0.770	32.9	LOS C	4.7	33.0	1.00	0.92	31.5
Approach		839	0.0	839	0.0	0.770	15.8	LOS B	6.1	42.9	0.72	0.69	33.9
West: Albert Road (W)													
10	L2	420	0.0	420	0.0	0.595	18.2	LOS B	7.5	52.3	0.75	0.78	38.0
11	T1	244	0.0	244	0.0	0.789	26.3	LOS B	5.7	40.2	1.00	0.91	41.7
12	R2	178	0.0	178	0.0	0.789	32.0	LOS C	5.5	38.6	1.00	0.92	30.7
Approach		842	0.0	842	0.0	0.789	23.5	LOS B	7.5	52.3	0.88	0.85	37.8
All Vehicles		3112	0.0	3112	0.0	0.871	20.7	LOS B	17.9	125.1	0.86	0.87	31.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 102 [FUT AM - EVRT / RAW]

Network: N101 [Network1 AM FUT]

Everton Rd / Raw Square
AM Peak Period
Future Conditions
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Raw Square (S)													
1	L2	1031	0.0	1031	0.0	0.673	7.2	LOS A	6.3	44.1	0.49	0.66	46.7
3	R2	455	0.0	455	0.0	0.673	10.1	LOS A	6.3	44.0	0.49	0.68	33.6
3u	U	8	0.0	8	0.0	0.673	11.8	LOS A	6.3	44.0	0.49	0.68	28.6
Approach		1494	0.0	1494	0.0	0.673	8.1	LOS A	6.3	44.1	0.49	0.66	43.9
East: Everton Rd (E)													
4	L2	171	0.0	171	0.0	0.553	9.6	LOS A	3.7	26.2	0.78	0.95	26.8
5	T1	204	0.0	204	0.0	0.553	9.9	LOS A	3.7	26.2	0.78	0.95	46.3
6u	U	3	0.0	3	0.0	0.553	14.8	LOS B	3.7	26.2	0.78	0.95	31.3
Approach		378	0.0	378	0.0	0.553	9.8	LOS A	3.7	26.2	0.78	0.95	41.4
West: Leicester (W)													
11	T1	366	0.0	366	0.0	0.573	9.5	LOS A	5.8	40.8	0.84	0.79	45.7
12	R2	660	0.0	660	0.0	0.573	13.0	LOS A	5.8	40.8	0.84	0.81	41.9
Approach		1026	0.0	1026	0.0	0.573	11.8	LOS A	5.8	40.8	0.84	0.80	43.4
All Vehicles		2898	0.0	2898	0.0	0.673	9.6	LOS A	6.3	44.1	0.65	0.75	43.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 1 [FUT PM - ALB / RAW]

Network: N101 [Network1 PM FUT]

Albert Road / Raw Square
PM Peak Period
Future Conditions
Signals - Fixed Time Coordinated Cycle Time = 80 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Raw Square (S)													
1	L2	329	0.0	329	0.0	0.667	16.4	LOS B	14.4	101.0	0.63	0.67	41.4
2	T1	922	0.0	922	0.0	0.667	13.2	LOS A	15.3	107.3	0.66	0.63	16.6
3	R2	188	0.0	188	0.0	0.427	20.3	LOS B	3.8	26.8	0.83	0.77	36.5
Approach		1440	0.0	1440	0.0	0.667	14.9	LOS B	15.3	107.3	0.68	0.66	30.5
North: Raw Square (N)													
7	L2	228	0.0	228	0.0	0.123	5.6	LOS A	0.0	0.0	0.00	0.53	52.3
8	T1	771	0.0	771	0.0	0.919	46.3	LOS D	21.0	147.2	0.92	1.08	12.6
9	R2	245	0.0	245	0.0	0.880	51.9	LOS D	11.3	78.9	1.00	1.01	25.0
Approach		1244	0.0	1244	0.0	0.919	39.9	LOS C	21.0	147.2	0.77	0.97	21.4
West: Albert Road (W)													
10	L2	351	0.0	351	0.0	0.503	24.9	LOS B	9.2	64.6	0.71	0.77	33.5
11	T1	237	0.0	237	0.0	0.739	38.0	LOS C	8.5	59.7	0.99	0.87	36.9
12	R2	186	0.0	186	0.0	0.739	43.7	LOS D	8.2	57.3	0.99	0.87	26.2
Approach		774	0.0	774	0.0	0.739	33.4	LOS C	9.2	64.6	0.86	0.82	33.0
All Vehicles		3458	0.0	3458	0.0	0.919	28.0	LOS B	21.0	147.2	0.75	0.81	27.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 102 [FUT PM - EVRT / RAW]

Network: N101 [Network1 PM FUT]

Everton Rd / Raw Square
PM Peak Period
Future Conditions
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Raw Square (S)													
1	L2	826	0.0	826	0.0	0.582	6.8	LOS A	4.6	32.5	0.51	0.65	46.9
3	R2	391	0.0	391	0.0	0.582	9.7	LOS A	4.5	31.3	0.51	0.68	33.8
3u	U	27	0.0	27	0.0	0.582	11.4	LOS A	4.5	31.3	0.51	0.68	28.9
Approach		1244	0.0	1244	0.0	0.582	7.8	LOS A	4.6	32.5	0.51	0.66	43.9
East: Everton Rd (E)													
4	L2	257	0.0	257	0.0	0.863	19.0	LOS B	8.6	60.0	0.95	1.23	17.5
5	T1	215	0.0	215	0.0	0.863	19.2	LOS B	8.6	60.0	0.95	1.23	38.4
6u	U	1	0.0	1	0.0	0.863	24.1	LOS B	8.6	60.0	0.95	1.23	23.5
Approach		473	0.0	473	0.0	0.863	19.1	LOS B	8.6	60.0	0.95	1.23	30.6
West: Leicester (W)													
11	T1	352	0.0	352	0.0	0.845	16.9	LOS B	17.2	120.2	1.00	1.05	38.8
12	R2	956	0.0	956	0.0	0.845	21.4	LOS B	17.2	120.2	0.91	1.06	34.9
Approach		1307	0.0	1307	0.0	0.845	20.2	LOS B	17.2	120.2	0.93	1.06	36.1
All Vehicles		3024	0.0	3024	0.0	0.863	14.9	LOS B	17.2	120.2	0.76	0.92	38.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)