



**REZONE PRECINCT 1 BLOOMFIELD PRIVATE HOSPITAL SITE FROM
R1 GENERAL RESIDENTIAL TO B2 LOCAL CENTRE
1517 FOREST ROAD, ORANGE**

Traffic and Parking Assessment Report

10th December 2018

Ref: 14016

Prepared by

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1. INTRODUCTION

This report has been prepared to accompany an application to rezone Precinct 1 of the Bloomfield Private Hospital development on the site known part of Lot 1 DP 549856 and Lot 100 DP 1147525, at 1517 Forest Road, Orange (Figures 1 and 2).

The site is located on the western side of Forest Road opposite the Orange Base Hospital. It has a frontage of approximately 260m to Forest Road and has an area of approximately 6 hectares. The site was formerly used as an outdoor drive-in cinema, but has been unused for approximately 17 years.

This report will adopt the traffic and parking generation rates adopted in the Traffic and Parking Assessment prepared by TerraTraffic Pty Ltd for the approved development. This report was dated 19th May 2017.

Approved Development

The current approval on the site (Major Project No.07_0072) comprises 4 precincts that include the following components:

Precinct 1 – Health Facilities, Restaurant and Retail precinct

- Health facilities with a combined floor area of 3,062m² and 24 practitioners
- a 293m² restaurant
- 11 x specialty stores with a combined floor area of 1,498m²

Precinct 2 – Private Hospital and Medi-Motel precinct

- a 12,630m² private hospital including 104 beds and 130 staff
- an 82-room Medi-Motel including a 130m² restaurant and 140m² function room

Precinct 3 - Community/child care and Residential precinct

- 7,500m² residential floor space (59 x 2 bedroom residential flats)
- a Child Care Centre with a capacity for 100 children

Precinct 4 - Residential precinct

- 17,000m² residential floor space (157 x 2 bedroom residential units)



The approved development is served by a total of 803 off-street parking spaces as follows:

<i>Precinct 1 (227 spaces)</i>	86 spaces serving the health facilities 91 spaces serving the ancillary retail shops 50 spaces serving the restaurant
<i>Precinct 2 (248 spaces)</i>	165 spaces serving the hospital 83 spaces serving the medi-motel
<i>Precinct 3 (108 spaces)</i>	83 spaces serving the 59 residential units 25 spaces serving the 100 place Child Care Centre
<i>Precinct 4 (220 spaces)</i>	220 spaces serving the 157 residential units
<i>Total</i>	<i>803 spaces</i>

In addition to the approved parking provision are 41 parallel parking spaces on the internal road network. Once these roads are constructed to provide access to Precincts 3 and 4, these on-street parking spaces will be available as surplus parking for the overall development.

The approved access arrangements serving the site off Forest Road comprise:

- A new 4-way signalised intersection (currently under construction) that will connect the site to the main access driveway serving the Orange Base Hospital which is located on the eastern side of Forest Road. The new signals will include pedestrian crossings on each leg of the intersection to enhance pedestrian safety.
- Left turn **exit only** movements from a northern access driveway that accommodates all vehicle types

Proposed Precinct 1 Rezoning

The proposed rezoning of Precinct 1 is to enable the currently approved retail complex to be anchored by an appropriately sized supermarket. The proposal will increase the retail area from 1,791m² to 2,910m² and reduce the area of the health facilities from 3,062m² to 1,882m². While the floor area of the health facilities will reduce, this assessment will assume that the floor space will continue to accommodate 24 practitioners.



The proposed modifications to Precinct 1 will comprise the following:

Small supermarket	1,649m ²
Specialty stores	968m ²
<i>Sub-total Retail</i>	<i>2,617m²</i>
Restaurant (as approved)	293m ²
Total Retail	2,910m²
Health Consulting Rooms	1,882m ²

The Precinct 1 proposal will be served by 225 off-street parking spaces that will continue to gain vehicular access from the new Forest Road traffic signals. Due to its close proximity to Precinct 2, it is anticipated visitors to Precinct 1 will also utilise the surplus parking spaces provided in the Precinct 2 (Hospital) carpark. The combined total number of parking spaces available to Precinct 1 and 2 users will be 483 spaces as follows:

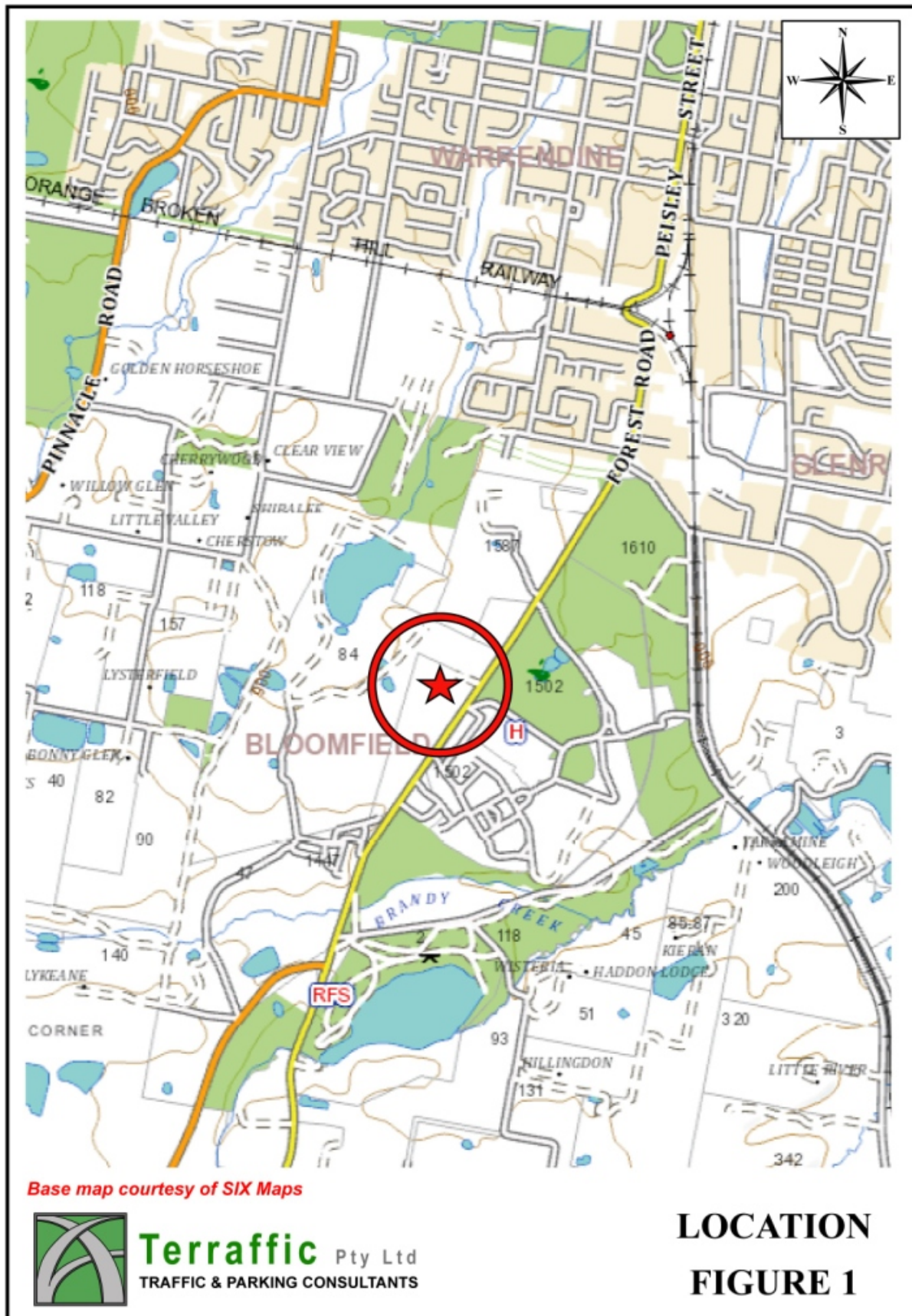
Precinct 1	225 spaces
Precinct 2	258 spaces
Total	483 spaces

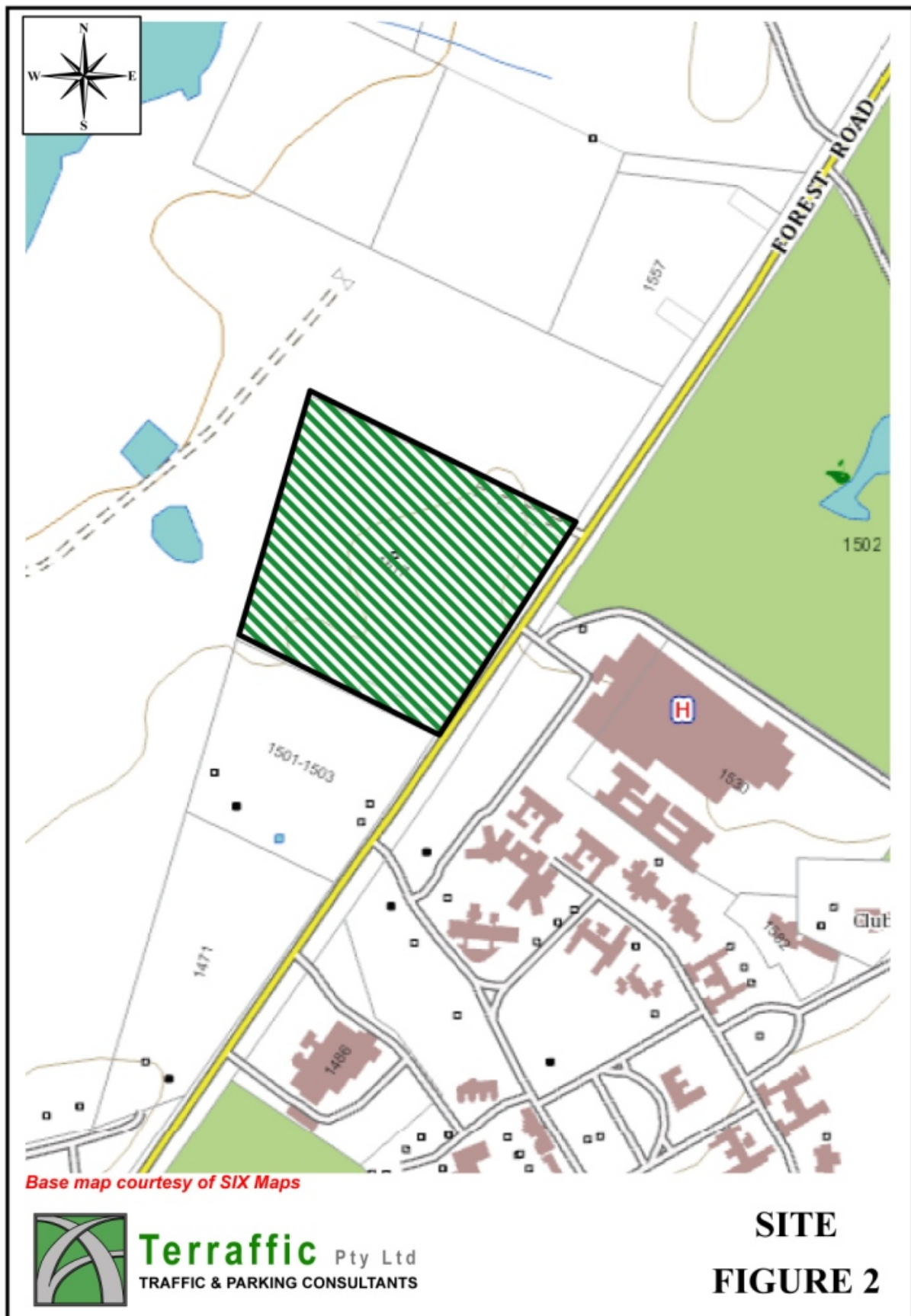
In addition, Precinct 1 will be served by a 32 space surplus carpark/loading area located at the rear of shops. The layout and final parking provision in this area will be formalised during the Construction Certificate phase of the development. It is anticipated that up to 10 spaces may be removed in order to provide sufficient manoeuvring space for articulated vehicles making deliveries to the supermarket.

In addition to the main vehicular access off Forest Road, the proposal will retain the approved left turn exit only driveway adjacent to the northern site boundary.

Plans of the proposed Precinct 1 re-configuration are reproduced in Appendix A. As can be seen, the floor space utilised by health facilities have been earmarked for a future Stage 2 development. Should this go ahead, the health facilities may relocate to the private hospital in Precinct 2.

The purpose of this report is to assess the traffic and parking implications of the development proposal.







2. PARKING ASSESSMENT

Car Parking Requirements

Orange Development Control Plan 2004 (30 June 2007) specifies the following parking requirements which are relevant to the proposed development:

Precinct 1 Uses

Health Consulting Rooms	2 spaces for every 1 practitioner with spaces being available for customer and staff use.
Shops and Shopping Centres	6.1 spaces per 100m ² GLFA
Restaurants	1 space per 10m ² GFA or 1 space for every 3 seats, whichever is greater

Precinct 2 Uses

Hospital	1 space for every 3 beds + 1 space each resident doctor and 1 space for every 2 visiting doctor + 1 space for every 2 employees.
Motel	1 space per unit + 1 space for each resident manager + 1 space for every 2 employees + 1 space for every 3 seats in a restaurant + 1 space per 10m ² of entertainment or function room areas

Dual and Complimentary Use of Parking

The approved parking provisions took into account the *dual and complimentary use* of parking that is available for staff and visitors accessing both Precinct 1 and Precinct 2. *Dual use* of parking spaces occurs when patrons of one component of a development also patronise another. For example, a proportion of staff and visitors to the hospital (Precinct 2) can also be expected to patronise the supermarket and small retail shops (Precinct 1).

Complementary use of parking spaces occurs when the peak parking demand of one component of a development does not coincide with the peak parking demand of another. In this case, the peak parking demand of the restaurant or function centre is likely to be at night



after 6pm, whereas the peak parking demand of the hospital, retail shops and health facilities is throughout the day.

Approved Modifications to DCP Parking Requirements

The parking rates adopted in the Traffic and Parking Assessment prepared by Terra Traffic in May 2017 took into account the *dual and complimentary use* of carparking expected on the site as follows:

1. The DCP parking rate for motel rooms (1 space per room) was considered excessive as 12 of the rooms are to be medical suites occupied by persons who are bedridden. Notwithstanding, the approved development provided 83 parking spaces by applying the DCP requirement to the remaining 70 standard motel rooms plus 13 additional staff/visitor spaces. The proposal will retain the 83 spaces serving the motel use.
2. The parking requirement for the motel restaurant was considered excessive as a substantial proportion of restaurant patronage, if not all of it, will be drawn from motel guests and patients. Any additional motel restaurant patrons (who are not already in the area) would utilise the vacant parking spaces allocated to the health facility and retail shops that will be closed at night (*complementary use*). The proposed development will retain this approach.
3. The approved development did not provide any additional parking for the motel function room as it is expected to only operate at nights when the health facilities and retail shops are closed. While function guests can utilise these vacant spaces, it is expected that some of the function guests will also be motel guests who have already parked on the site (*dual use*). The proposed development will retain this approach.

DCP Parking Requirements

Application of Council's DCP parking rates to the proposed development yields a parking requirement of 441 spaces over Precincts 1 and 2 as follows:

**Precinct 1 Parking Demand**

Retail	2,617m ² @ 6.1 spaces per 100m ²	160 spaces
Restaurant	150 seats @ 1 space per 3 seats	50 spaces
Health Consulting Rooms	24 practitioners @ 2 spaces per practitioner	48 spaces
Total Parking Requirement		258 spaces

Precinct 2 Parking Demand

Hospital (as approved)	103 Beds @ 1 space per 3 beds	35 spaces
	130 staff @ 1 space per 2 staff	65 spaces
Motel (as approved)		83 spaces
Total Parking Requirement		183 spaces

Combined Total Parking Requirement **441 spaces**

As noted in the foregoing, the combined total number of parking spaces available to Precinct 1 and 2 users will be 483 spaces as follows:

Precinct 1	225 spaces
Precinct 2	258 spaces
Total	483 spaces

In the circumstances, it can be concluded that the parking provision incorporated in the development proposal is adequate such that the proposed development has no unacceptable parking implications.



3. TRAFFIC ASSESSMENT

Existing Road Network

Forest Rd is classified by the RMS as a Regional Road performing a sub-arterial road function. It is generally constructed to a two-lane rural road standard with a sealed carriageway approximately 6.5m wide between edge lines with a 500mm bitumen shoulder on each side.

As can be seen in the aerial photograph reproduced on Figure 3, construction of the hospital building in Precinct 2 has begun. In addition, Forest Road has been upgraded along the site frontage to accommodate 4 travel lanes (2 in each direction) and the future traffic signals that will serve Orange Base Hospital and the subject site.

Existing Traffic Conditions

An indication of the existing traffic conditions on the road network in the vicinity of the site is provided by peak period traffic surveys undertaken at the intersection of Forest Road and Base Hospital main access driveway between 7.00-10.00am and 3.30-6.00pm on Wednesday 27th June and Thursday 28th June 2018. The results of the traffic surveys are reproduced in full in Appendix B and reveal that:

- the morning peak period occurs between 7.45-8.45am. At that time, the traffic flow on Forest Road to the north of the access driveway was 670 vehicles per hour (vph), while to the south of the driveway there were only 376vph
- during the morning peak, the Base Hospital generates in the order of 302vph with 99% of that traffic approaching from the north and departing to the north
- the evening peak period occurs between 4.15-5.15pm. At that time, the traffic flow on Forest Road to the north of the access driveway was 864vph, while to the south of the driveway there were 559vph



Aerial photograph taken Sunday 4th November 2018



TerraTraffic Pty Ltd
TRAFFIC & PARKING CONSULTANTS

AERIAL PHOTOGRAPH FIGURE 3



- during the evening peak period, the Base Hospital generates in the order of 323vph with 97% of that traffic approaching from the north and departing to the north

It should be noted that in comparison to the traffic counts conducted in 2014, traffic flows on Forest Road have remained constant with no significant change over that 4 year period as follows:

	AM Peak	PM Peak
2014 flows north of driveway	792vph	845vph
2018 flows north of driveway	670vph	864vph

Traffic Generating of Approved Development

The Traffic and Parking Assessment for the approved development calculated the following traffic generation potential based on the RMS generic traffic generation rates and first principle assumptions:

AM PEAK PERIOD TRAFFIC GENERATION – APPROVED DEVELOPMENT			
Use	Inbound	Outbound	Total
Private Hospital	36	10	46
Health Facilities	72	24	96
Specialty Shops	49	20	69
Restaurant	0	0	0
Medi-Motel	8	20	28
Motel Restaurant	0	0	0
Child Care Centre	45	35	80
Precinct 3 Residential	6	18	24
Precinct 4 Residential	13	50	63
Total Development	229	177	406



PM PEAK PERIOD TRAFFIC GENERATION – APPROVED DEVELOPMENT			
Use	Inbound	Outbound	Total
Private Hospital	15	60	75
Health Facilities	24	72	96
Specialty Shops	20	49	69
Restaurant	12	3	15
Medi-Motel	20	8	28
Motel Restaurant	5	2	7
Child Care Centre	35	45	80
Precinct 3 Residential	18	6	24
Precinct 4 Residential	50	13	63
Total Development	199	258	457

That traffic was assigned to the road network serving the site generally reflecting the origin/destination characteristics of the surveyed traffic generation of the existing Base Hospital as follows:

To/from North 98%

To/from South 2%

Traffic Generating of Approved and Proposed Precinct 1 Retail Use

As noted in the Introduction of this report, the proposed development will increase the retail floor space with the introduction of a small supermarket while reducing the area of the health facilities in Precinct 1 only. While the floor area of the health facilities will reduce, this assessment will assume that the floor space will continue to accommodate 24 practitioners and there will be no change to the traffic generating potential of this use.

Section 3.11 of the RMS publication “*Guide to Traffic Generating Developments*” (October 2002) specifies the following traffic generating rates for supermarkets and specialty retail stores

Supermarkets	15.5vtph per 100m ²
Specialty Stores	4.6vtph per 100m ²



Application of these rates to the approved and proposed retail floorspace yields an increase of 231vtph in peak periods as follows:

Approved Retail

1,498m² specialty stores @ 4.6vtph per 100m² 69vtph

Proposed Development

1,649m² supermarket @ 15.5vtph per 100m² 256vtph

968m² specialty stores @ 4.6vtph per 100m² 44vtph

Total Proposed Retail 300vtph

Based on these generic traffic generation rates, the development site will generate in the order of 609vph during the AM peak and 653vph during the PM peak as follows:

AM PEAK PERIOD TRAFFIC GENERATION – PROPOSED DEVELOPMENT			
Use	Inbound	Outbound	Total
Private Hospital	36	10	46
Health Facilities	72	24	96
Supermarket	156	100	256
Specialty Shops	24	20	44
Restaurant	0	0	0
Child Care Centre	45	35	80
Precinct 3 Residential	6	18	24
Precinct 4 Residential	13	50	63
Total Development	352	257	609

PM PEAK PERIOD TRAFFIC GENERATION – PROPOSED DEVELOPMENT			
Use	Inbound	Outbound	Total
Private Hospital	15	60	75
Health Facilities	24	72	96
Supermarket	100	156	256
Specialty Shops	20	24	44
Restaurant	12	3	15



Child Care Centre	35	45	80
Precinct 3 Residential	18	6	24
Precinct 4 Residential	50	13	63
Total Development	274	379	653

Traffic Implications of Proposed Development

The main traffic implications of the proposed development concern the ability of traffic that it generates to access the site via the new Forest Rd traffic signals serving the site and Base Hospital.

The ability of this intersection to accommodate the projected post-development traffic demand can be assessed using the SIDRA traffic model, and criteria for interpreting the results of SIDRA analysis are set out on the schedule reproduced in the following pages.

The results of that SIDRA analysis are set out in Table 3.1 revealing that the intersection will operate satisfactorily under projected traffic demand.

**TABLE 3.1 – RESULTS OF SIDRA ANALYSIS OF FOREST ROAD AND
BASE HOSPITAL / MAIN SITE ACCESS INTERSECTION**

	Level of Service	Degree of Saturation	Total Average Vehicle Delay (sec)
AM Peak	A	0.730	13.7
PM Peak	B	0.784	19.2

The Sidra Movement Summary Sheets for the Forest Road/Base Hospital/Subject Site Main Access are reproduced in Appendix C.

In the circumstances, it can be concluded that the proposed development has no unacceptable traffic implications.



Criteria for Interpreting Results of SIDRA Analysis

1. *Level of Service (LOS)*

LOS	Traffic Signals and Roundabouts	Give Way and Stop Signs
'A'	Good operation.	Good operation.
'B'	Good with acceptable delays and spare capacity.	Acceptable delays and spare capacity.
'C'	Satisfactory.	Satisfactory but accident study required.
'D'	Operating near capacity.	Near capacity and accident study required.
'E'	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode.	At capacity and requires other control mode.
'F'	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode.

2. *Average Vehicle Delay (AVD)*

The AVD provides a measure of the operational performance of an intersection as indicated on the table below which relates AVD to LOS. The AVD=s listed in the table should be taken as a guide only as longer delays could be tolerated in some locations (ie inner city conditions) and on some roads (ie minor side street intersecting with a major arterial route).

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	less than 14	Good operation.	Good operation.
B	15 to 28	Good with acceptable delays and spare capacity.	Acceptable delays and spare capacity.
C	29 to 42	Satisfactory.	Satisfactory but accident study required.
D	43 to 56	Operating near capacity.	Near capacity and accident study required.
E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode.	At capacity and requires other control mode.

3. *Degree of Saturation (DS)*

The DS is another measure of the operational performance of individual intersections.

For intersections controlled by traffic signals¹ both queue length and delay increase rapidly as DS approaches 1, and it is usual to attempt to keep DS to less than 0.9. Values of DS in the order of 0.7 generally represent satisfactory intersection operation. When DS exceeds 0.9 queues can be anticipated.

For intersections controlled by a roundabout or GIVE WAY or STOP signs, satisfactory intersection operation is indicated by a DS of 0.8 or less.

¹

The values of DS for intersections under traffic signal control are only valid for cycle length of 120 secs.



APPENDIX A

PLANS OF PROPOSED DEVELOPMENT





APPENDIX B

TRAFFIC COUNT DATA



Traffic Count

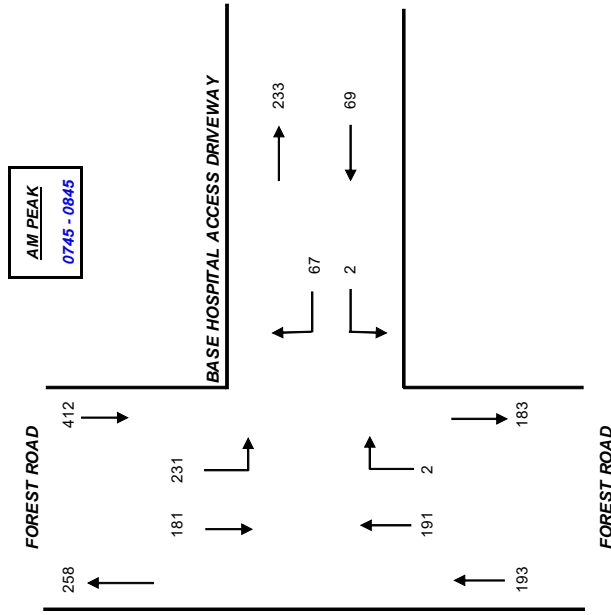
Forest Road and Base Hospital Access Driveway

Thursday 28th June 2018

Time Period	A	B	C	D	E	F	Total
	Northbound	Right In	Southbound	Left In	Right Out	Left Out	
0715 - 0730	38	0	41	36	31	2	148
0730 - 0745	39	2	43	54	21	0	159
0745 - 0800	47	0	41	70	22	1	181
0800 - 0815	48	1	41	60	9	0	159
0815 - 0830	45	0	53	54	20	0	172
0830 - 0845	51	1	46	47	16	1	162
0845 - 0900	60	0	50	46	19	1	176
0900 - 0915	34	1	46	41	8	0	130
0915 - 0930	36	2	40	34	17	3	132
0930 - 0945	19	1	16	30	15	0	81
0945 - 1000	26	2	30	27	21	0	106
Total	443	10	447	499	199	8	1606

Time Period	A	B	C	D	E	F		Total
	Northbound	Right In	Southbound	Left In	Right Out	Left Out		
0715 - 0815	172	3	166	220	83	3		647
0730 - 0830	179	3	178	238	72	1		671
0745 - 0845	191	2	181	231	67	2		674
0800 - 0900	204	2	190	207	64	2		669
0815 - 0915	190	2	195	188	63	2		640
0830 - 0930	181	4	182	168	60	5		600
0845 - 0945	149	4	152	151	59	4		519
0900 - 1000	115	6	132	132	61	3		449

Peak	191	2	181	231	67	2	674
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Traffic Count

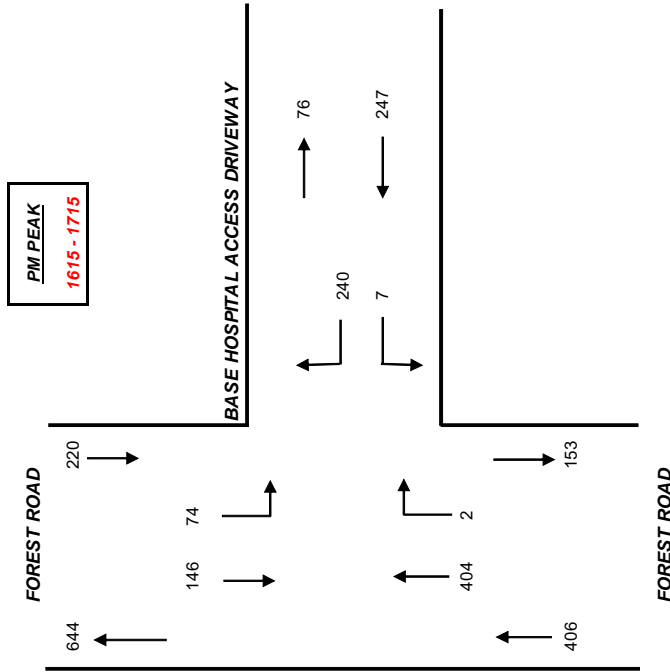
Forest Road and Base Hospital Access Driveway

Wednesday 27th June 2018

Time Period	A		B		C		D		E		F		Total
	Northbound	Southbound	Right In	Left In	Right In	Left In	Right Out	Left Out	Right Out	Left Out	Right Out	Left Out	
1530 - 1545	59	40	0	18	41	1	41	1	159				159
1545 - 1600	67	37	1	14	33	0	33	0	152				152
1600 - 1615	50	26	0	8	38	0	38	0	122				122
1615 - 1630	116	51	0	17	35	1	35	1	220				220
1630 - 1645	98	37	1	23	65	3	65	3	227				227
1645 - 1700	110	30	1	20	66	1	66	1	228				228
1700 - 1715	80	28	0	14	74	2	74	2	198				198
1715 - 1730	66	37	1	9	45	1	45	1	159				159
1730 - 1745	76	56	0	11	46	0	46	0	189				189
1745 - 1800	40	42	1	7	23	1	23	1	114				114
Total	762	384	5	141	466	10	466	10	1768				1768

Time Period	A		B		C		D		E		F		Total
	Northbound	Southbound	Right In	Left In	Right In	Left In	Right Out	Left Out	Right Out	Left Out	Right Out	Left Out	
1530 - 1630	292	154	1	57	147	2	147	2	653				653
1545 - 1645	331	151	2	62	171	4	171	4	721				721
1600 - 1700	374	144	2	68	204	5	204	5	797				797
1615 - 1715	404	146	2	74	240	7	240	7	873				873
1630 - 1730	354	132	3	66	250	7	250	7	812				812
1645 - 1745	332	151	2	54	231	4	231	4	774				774
1700 - 1800	262	163	2	41	188	4	188	4	660				660

Peak	404	2	146	74	240	7	873
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APPENDIX C

SIDRA MOVEMENT SUMMARY SHEETS FOR THE FOREST ROAD/BASE HOSPITAL/SUBJECT SITE MAIN ACCESS DRIVEWAY



MOVEMENT SUMMARY

Site: 1 [Forest Road Traffic Signals - AM Peak - 2018 Proposal]

2018 Proposal - AM Peak

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Forest Road												
1	L2	5	0.0	0.041	10.4	LOS A	0.6	4.0	0.41	0.35	0.41	44.9
2	T1	191	5.0	0.125	5.0	LOS A	1.8	13.0	0.43	0.36	0.43	55.3
3	R2	2	0.0	0.003	11.2	LOS A	0.0	0.2	0.43	0.61	0.43	27.7
Approach		198	4.8	0.125	5.2	LOS A	1.8	13.0	0.43	0.36	0.43	54.6
East: Base Hospital												
4	L2	2	0.0	0.006	21.7	LOS B	0.0	0.3	0.83	0.52	0.83	25.0
6	R2	67	0.0	0.479	32.0	LOS C	2.1	14.6	1.00	0.75	1.00	23.4
Approach		69	0.0	0.479	31.7	LOS C	2.1	14.6	1.00	0.74	1.00	23.4
North: Forest Road												
7	L2	231	0.0	0.145	7.8	LOS A	0.8	5.6	0.12	0.66	0.12	28.7
8	T1	181	5.0	0.145	4.9	LOS A	2.1	15.3	0.43	0.38	0.43	55.2
9	R2	345	0.0	0.464	13.0	LOS A	5.7	40.0	0.59	0.76	0.59	38.5
Approach		757	1.2	0.464	9.5	LOS A	5.7	40.0	0.41	0.64	0.41	36.9
West: Development Site												
10	L2	251	0.0	0.730	28.0	LOS B	7.7	53.6	1.00	0.98	1.16	28.5
12	R2	6	0.0	0.019	22.1	LOS B	0.1	1.0	0.84	0.56	0.84	31.0
Approach		257	0.0	0.730	27.8	LOS B	7.7	53.6	0.99	0.97	1.15	28.5
All Vehicles		1281	1.5	0.730	13.7	LOS A	7.7	53.6	0.56	0.67	0.59	36.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	10	24.3	LOS C	0.0	0.0	0.90	0.90
P2	East Full Crossing	10	9.6	LOS A	0.0	0.0	0.57	0.57
P3	North Full Crossing	10	24.3	LOS C	0.0	0.0	0.90	0.90
P4	West Full Crossing	10	9.6	LOS A	0.0	0.0	0.57	0.57
All Pedestrians		40	17.0	LOS B			0.73	0.73

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.



MOVEMENT SUMMARY

Site: 1 [Forest Road Traffic Signals - PM Peak - 2018 Proposal]

2018 Proposal - PM Peak

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Average Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Forest Road												
1	L2	5	0.0	0.134	17.9	LOS B	1.9	13.9	0.67	0.54	0.67	38.8
2	T1	406	5.0	0.405	13.7	LOS A	6.6	48.1	0.74	0.62	0.74	49.0
3	R2	2	0.0	0.004	18.6	LOS B	0.0	0.3	0.65	0.62	0.65	26.2
Approach		413	4.9	0.405	13.8	LOS A	6.6	48.1	0.74	0.62	0.74	48.7
East: Base Hospital												
4	L2	7	0.0	0.009	11.5	LOS A	0.1	0.9	0.62	0.42	0.62	26.9
6	R2	240	0.0	0.745	26.2	LOS B	7.4	52.0	0.97	1.03	1.18	24.3
Approach		247	0.0	0.745	25.8	LOS B	7.4	52.0	0.96	1.01	1.17	24.3
North: Forest Road												
7	L2	74	0.0	0.136	17.3	LOS B	1.9	13.9	0.60	0.66	0.60	27.1
8	T1	146	5.0	0.136	11.6	LOS A	1.9	13.9	0.65	0.57	0.65	49.5
9	R2	269	0.0	0.784	32.7	LOS C	8.7	60.7	0.97	0.96	1.25	28.1
Approach		489	1.5	0.784	24.1	LOS B	8.7	60.7	0.82	0.80	0.97	33.6
West: Development Site												
10	L2	371	0.0	0.494	14.8	LOS B	8.3	57.9	0.80	0.68	0.80	34.9
12	R2	8	0.0	0.013	11.7	LOS A	0.1	1.0	0.62	0.43	0.62	36.8
Approach		379	0.0	0.494	14.7	LOS B	8.3	57.9	0.79	0.68	0.79	35.0
All Vehicles		1528	1.8	0.784	19.2	LOS B	8.7	60.7	0.81	0.76	0.90	34.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	10	20.8	LOS C	0.0	0.0	0.83	0.83	
P2	East Full Crossing	10	18.4	LOS B	0.0	0.0	0.78	0.78	
P3	North Full Crossing	10	20.8	LOS C	0.0	0.0	0.83	0.83	
P4	West Full Crossing	10	18.4	LOS B	0.0	0.0	0.78	0.78	
All Pedestrians		40	19.6	LOS B			0.81	0.81	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.