

Proposed s.96 Application for the Redevelopment of
Old Darby & Joan Precinct

**RSL Anzac Village
Veterans Parade, Narrabeen**

TRAFFIC AND PARKING ASSESSMENT REPORT

18 July 2013

Ref 13093

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants 

Suite 6, 20 Young Street, Neutral Bay NSW 2089 - PO Box 1868, Neutral Bay NSW 2089
Ph: 9904 3224 Fax: 9904 3228, Email: varga@vtp.net.au

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1. INTRODUCTION

This report has been prepared to accompany a s.96 Application to Warringah Council for the proposed redevelopment of the Old Darby & Joan residential precinct which forms part of the RSL Anzac Village, located on Veterans Parade, Narrabeen (Figures 1 and 2).

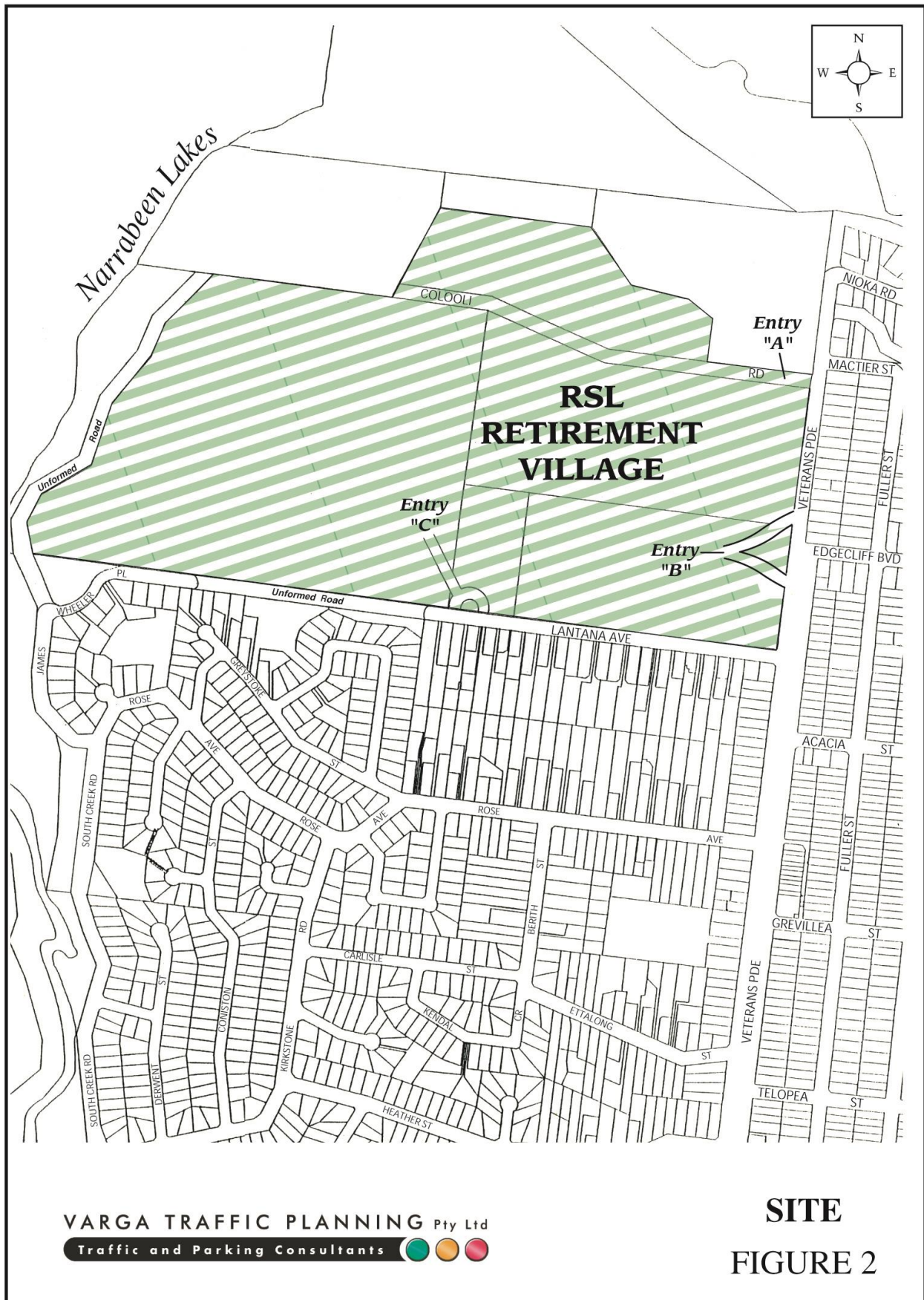
Council have previously approved the demolition of the majority of the existing self-contained dwellings on the site and the construction of 67 new, predominantly “over/under” self-contained dwellings (DA2009/1693). Off-street parking was approved for a total of 89 spaces for residents and their visitors.

The proposed alterations to the previously approved scheme involve the deletion of 3 dwellings and the construction of a new undercover car parking area.

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

- describes the site and provides details of the development proposal
- reviews the road network in the vicinity of the site, and the traffic conditions on that road network
- estimates the traffic generation potential of the development proposal, and assigns that traffic generation to the road network serving the site
- assesses the traffic implications of the development proposal in terms of road network capacity
- review the geometric design features of the proposed car parking facilities for compliance with the relevant codes and standards
- assesses the adequacy and suitability of the quantum of off-street car parking provided on the site.





2. PROPOSED DEVELOPMENT

Site

The RSL Village site is located on the western side of Veterans Parade in between Lantana Avenue and Colooli Road. The site has a street frontage approximately 370m in length to Veterans Parade and occupies a total area of approximately 43.6ha.

The RSL Village as a whole comprises 561 independent living units and 496 aged-care beds, as well as various other ancillary community buildings and services.

There are a total of approximately 860 carparking spaces located within the RSL Village site, including a substantial proportion of publicly accessible “on-street” car parking spaces. The main vehicular accesses to the site is provided via Colooli Road and Edmondson Drive (off Veterans Parade) and to a lesser extent via Lakeshore Drive off Lantana Avenue.

The Old Darby & Joan precinct is located in the south-eastern part of the village and fronts the northern side of Lantana Avenue. The precinct currently comprises 30 single-storey self-contained dwellings, in the form of duplexes, and associated carports and pathways.

Vehicular access to the Old Darby & Joan precinct is currently provided via Edmondson Drive, First Avenue and Second Avenue internal roadways.

Previously Approved Development

Council have previously approved the demolition of the majority of the existing self-contained dwellings on the site and the construction of a series of new, predominantly “over/under” self-contained dwellings (DA2009/1693). A total of 67 new dwellings were approved as follows:

1 bedroom dwelling:	2
2 bedroom dwelling:	14
2 bedroom + study dwelling:	51
TOTAL APARTMENTS:	67

In essence, the previously approved development on the Old Darby & Joan precinct resulted in a *nett increase* of 45 additional dwellings.

Dwelling No.1 & 2 were to be retained as part of the village, whilst dwellings No.25-30 were to form part of the redevelopment of the New Darby & Joan precinct, and were the subject of a separate Development Application.

Off-street parking was approved for a total of 89 cars, comprising 67 single car garages or car spaces plus off-street parking for a further 22 cars which could be used by visitors, most of which are located on the driveway immediately in front of the proposed garages.

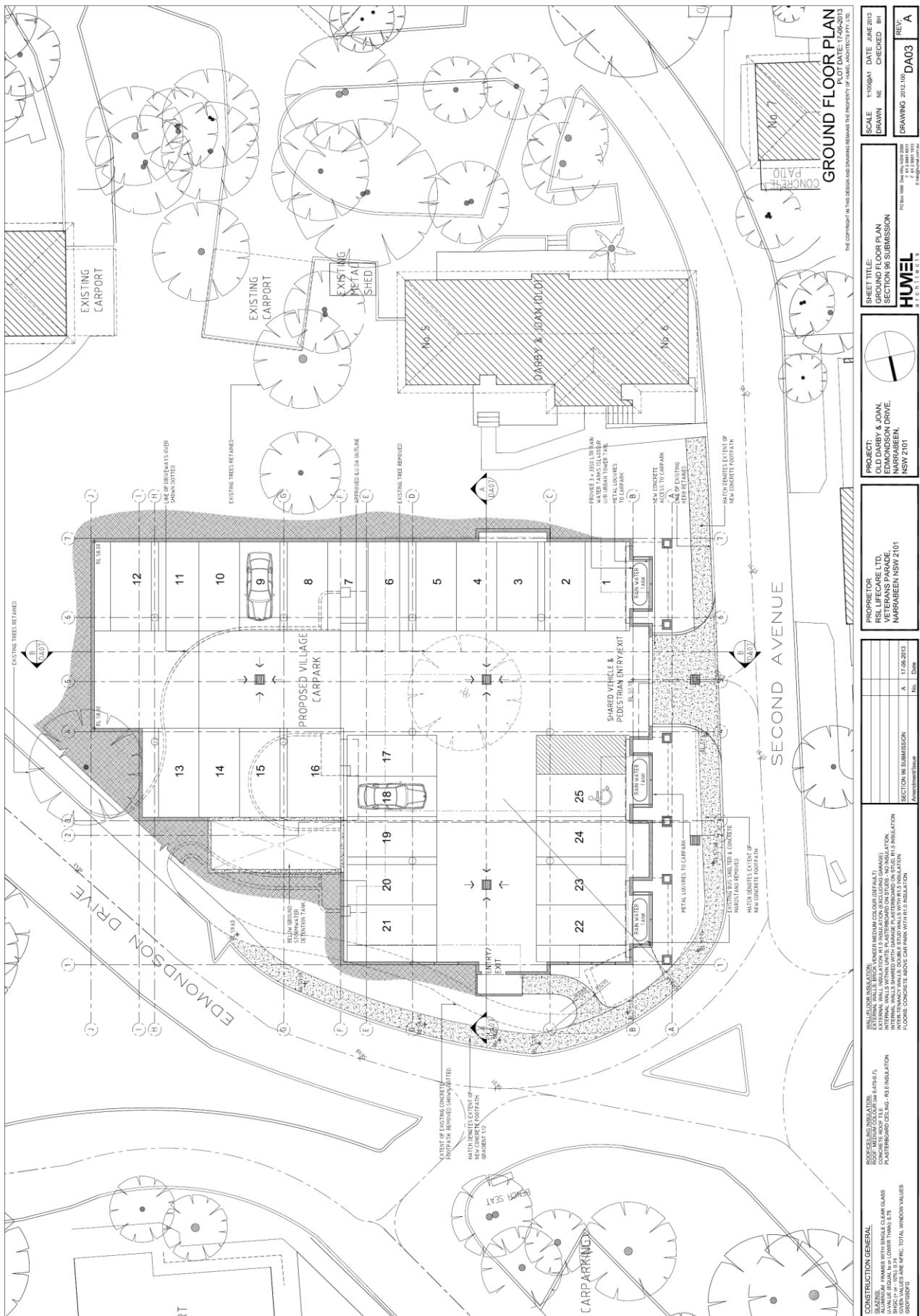
A number of internal roadways (i.e. James Wheeler Place, First Avenue and Second Avenue) were approved to be widened to 5.5m in width to cater for two-way traffic flows. A new site access road was also approved, off Lantana Avenue, to provide improved accessibility for residents of the Old Darby & Joan Precinct

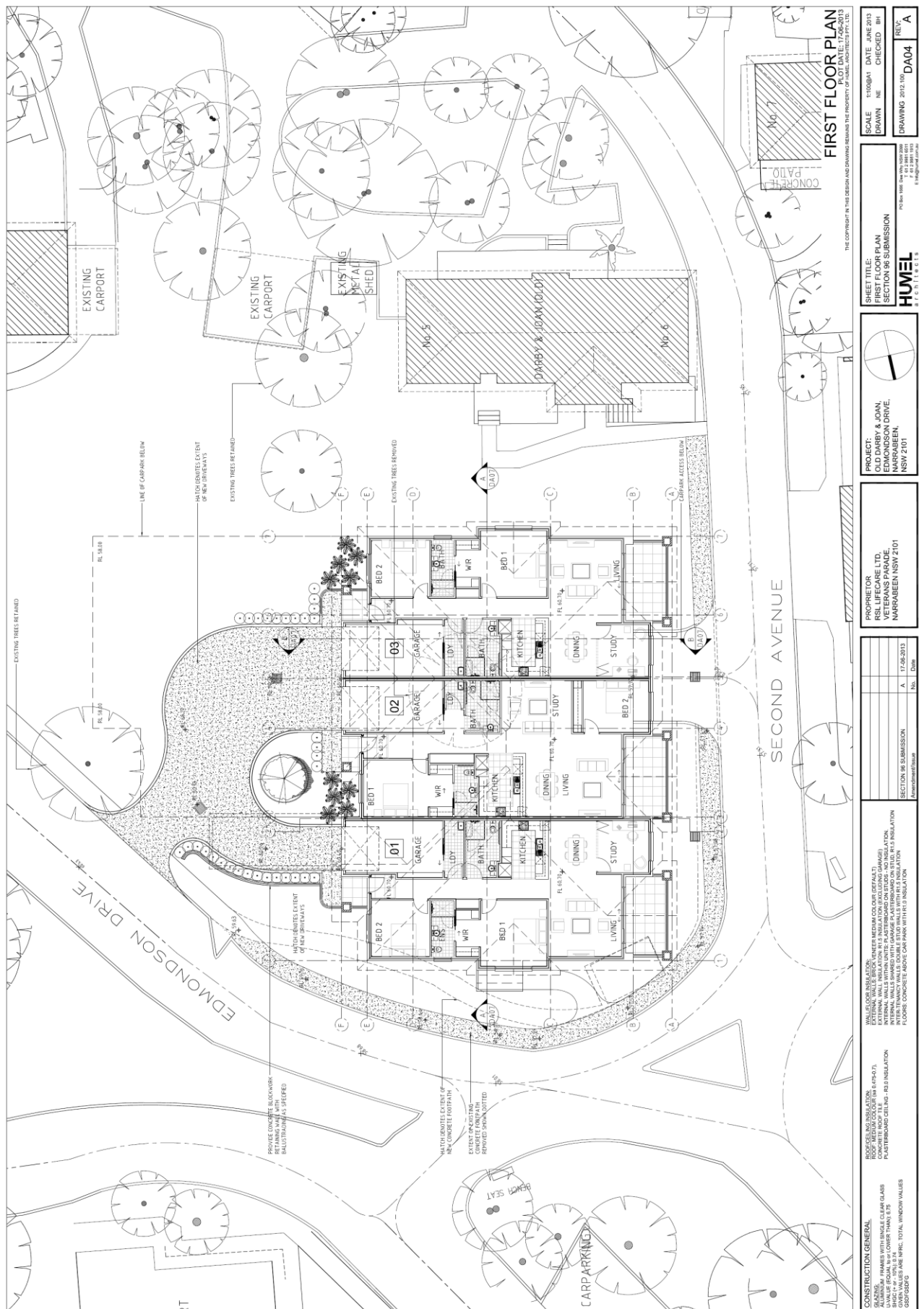
Proposed Development

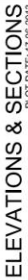
The proposed alterations to the previously approved scheme involve the deletion of 3 lower-level dwellings, resulting in a total of 64 new self-contained dwellings.

Off-street parking is also proposed for an additional 25 cars in a new single-level undercover car parking area in place of the 3 deleted dwellings. Vehicular access to the undercover car parking area is to be provided via a new entry/exit driveway located towards the northern end of Second Avenue.

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







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.

Pittwater Road is classified by the RMS as a *State Road* and provides the key north-south road link in the Northern Beaches area, linking North Manly to Church Point. It typically carries three traffic lanes in each direction in the vicinity of the site, with opposing traffic flows separated by a centre median island. Kerbside parking is permitted at selected locations outside of commuter peak periods.

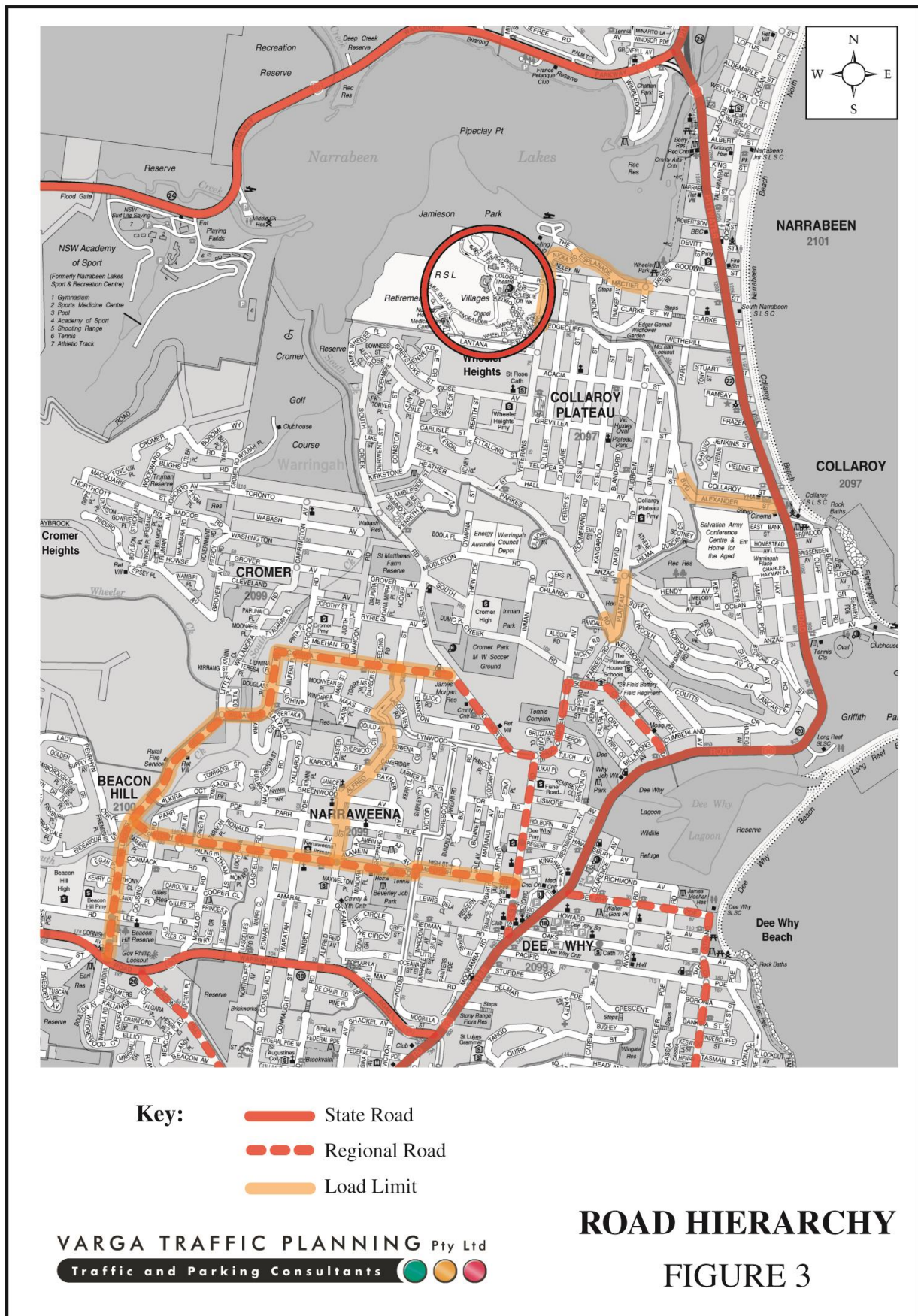
Wakehurst Parkway is also classified by the RMS as a *State Road* and provides another key north-south road link in the area, linking North Narrabeen to North Balgowlah. It typically carries one traffic lane in each direction in the vicinity of the site with turning bays provided at key locations.

Veterans Parade, Nioka Road, The Esplanade, Mactier Street, Telopea Street and Alexander Street are all local, unclassified roads that form part of a *collector route* which connects Pittwater Road to the local area. The *collector route* caters for medium levels of traffic generally and typically carries one traffic lane in each direction, with kerbside parking generally permitted.

Lantana Avenue is a local, unclassified road which is primarily used to provide vehicular and pedestrian access to frontage properties. It typically carries one traffic lane in each direction with kerbside parking permitted on both sides of the road.

Existing Traffic Controls

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



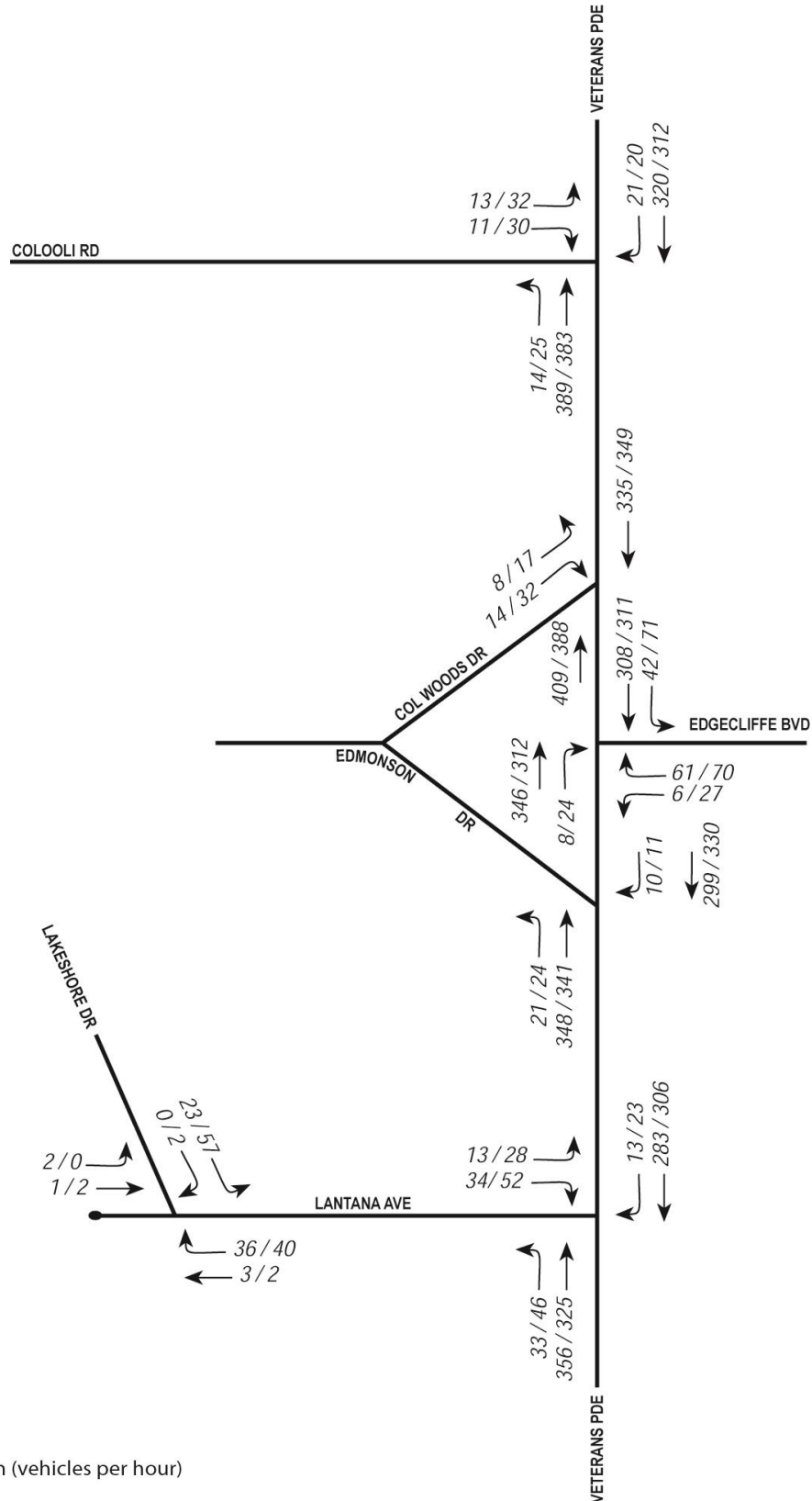
- a 50 km/h SPEED LIMIT which applies to Veterans Parade and all other local roads in the area
- a 40km/h SCHOOL ZONE which applies to the road network in the vicinity of the Veterans Parade and Rose Avenue intersection
- a 10km/h SPEED LIMIT which applies to within the RSL Village
- ROUNDABOUTS in Veterans Parade at its intersection Lantana Avenue, Edgecliff Boulevarde and also Colooli Road
- MARKED FOOTCROSSINGS across Veterans Parade, south of Edgecliff Boulevarde and north of Rose Avenue.

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 as part of the previously approved traffic study. The results of the traffic surveys are reproduced in full in Appendix A and reveal that:

- two-way traffic flows in Veterans Parade past the site frontage are typically in the order of 800 vehicles per hour (vph) during commuter peak periods
- two-way traffic flows in Lantana Avenue are significantly lower, typically in the order of 100-150 vph during commuter peak periods
- the two-way traffic flows generated by the existing developments on the RSL Village site were 161 vph during the AM commuter peak period and 290 vph during the PM commuter peak period.

Those existing peak hour traffic flows are illustrated on Figure 5.



EXISTING TRAFFIC VOLUMES
FIGURE 5

Projected Traffic Generation

An indication of the traffic generation potential of the development proposal is provided by reference to the former Roads and Traffic Authority's publication *Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation (October 2002)*.

The RTA *Guidelines* are based on extensive surveys of a wide range of land uses and nominates the following traffic generation rates which are applicable to the development proposal:

Housing for Aged and Disabled Persons

0.1-0.2 peak hour vehicle trips per dwelling

The RTA *Guidelines* also make the following observation in respect of housing for aged and disabled persons:

Definition

Residential accommodation which may take any building form, which is to be intended to be used permanently as housing for the accommodation of aged or disabled persons. The hostel may consist of residencies or a grouping of 2 or more self-contained dwellings and include facilities such as staff accommodation, chapels, medical rooms, recreation facilities, shops and/or therapy rooms.

Factors

These figures at the lower end of the above rates concentrates on *subsidised* developments (often run by religious organisations). Generation rates of *resident funded* developments are often greater, as indicated at the higher end of the range.

Application of the above traffic generation rates to the *nett reduction* of 3 dwellings as outlined in the s.96 Application yields a *nett decrease* in traffic generation potential of the site of approximately 1 vehicle trip per hour during commuter peak periods when compared to the previously approved scheme.

That projected *decrease* in the traffic generation potential of the site as a consequence of the development proposals will clearly not have any unacceptable traffic implications in terms of road network capacity.

4. PARKING IMPLICATIONS

Existing Kerbside Parking Restrictions

The existing parking restrictions which apply to the road network in the vicinity of the site are illustrated on Figure 6. Key features of those parking restrictions are:

- BUS ZONES at regular intervals on both sides of Veterans Parade, and on both sides of Lantana Avenue
- NO STANDING restrictions at each of the intersections on Veterans Parade in the vicinity of the site
- UNRESTRICTED kerbside parking elsewhere on the surrounding road network.

Off-Street Parking Provisions

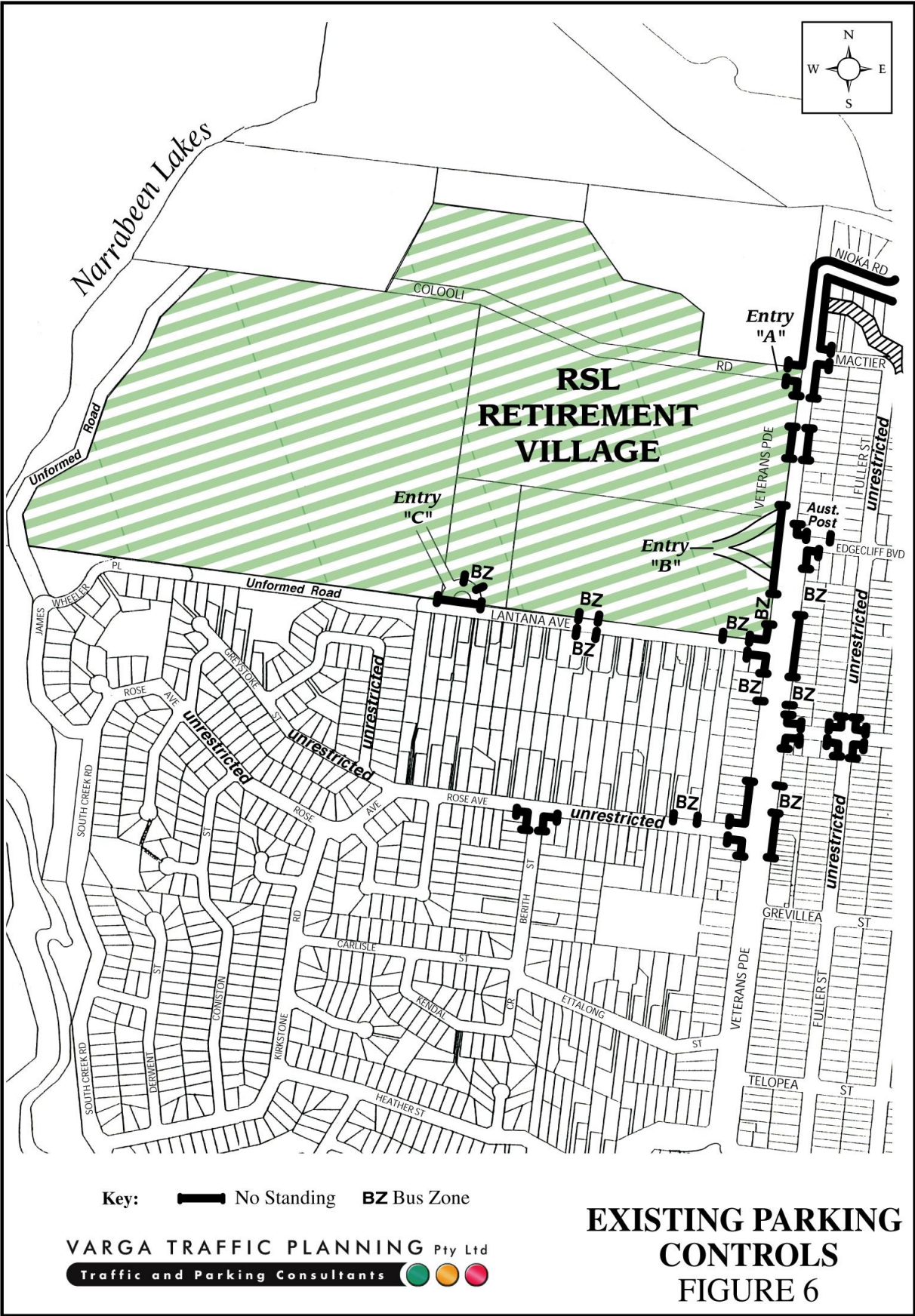
The off-street parking requirements applicable to most development types within the Warringah LGA are specified in Council's *Development Control Plan 2011, Appendix 1 – Car Parking Requirements* document. However *DCP 2011* does not specify an off-street parking requirement for "Housing for Older People or People with a Disability".

Reference is therefore made to the previously approved traffic study from December 2009, which referred to Warringah *LEP 2000*.

Clause 29 (1) of the now superseded Warringah *LEP 2000* specifically excluded the B6 War Veterans locality from the parking provisions nominated in Schedule 17 for "Housing for Older People with a Disability" and, for the purposes of that previously approved assessment, the parking requirements were assessed against the parking rates nominated in Schedule 17 for *Apartment Style Housing* as set out below:

Apartment Style Housing:

1 bedroom unit:	1.0 space per dwelling
1 bedroom unit:	1.2 spaces per dwelling
Visitors:	1.0 space per 5 dwellings



Similarly, the off-street parking requirements specified in *DCP 2011* for Multi Dwelling Housing are the same as those specified in *LEP 2000* for Apartment Style Housing.

Therefore, application of the above parking rates to the 2 x one-bedroom dwellings and 62 x two-bedroom dwellings outlined in the s.96 Application yields an off-street parking requirement of 89 parking spaces as set out below:

Residents:	76.4 spaces
Visitors:	12.8 spaces
TOTAL:	89.2 spaces

The above requirements are satisfied by the proposed parking provision of 115 spaces, comprising 67 resident spaces (i.e. 64 single-car garages and 3 at-grade spaces) plus 22 spaces which could be used by visitors (i.e. 20 spaces located on the driveways in front of the proposed garages and 2 non-resident associated at-grade spaces), plus a further 25 spaces in a new undercover car parking area for residents of the Anzac Village and/or visitors to the site.

By way of comparison, if the *SEPP Seniors Living* parking rates of “0.5 spaces per bedroom” was applied to the s.96 Application, the development would require the provision of 63 parking spaces in total, and would also be satisfied by the proposed provision of 115 off-street parking spaces.

The geometric design layout of the proposed undercover car parking facilities have been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 1 - Off-Street Car Parking AS2890.1* in respect of parking bay dimensions and aisle widths.

In summary, the proposed parking facilities satisfy the relevant requirements specified in the Warringah *LEP 2000*, *DCP 2011* and *AS2890.1* requirements and it is therefore concluded that the proposed development will not have any unacceptable parking implications.

APPENDIX A

TRAFFIC SURVEY DATA



R.O.A.R. DATA

Reliable, Original & Authentic Results

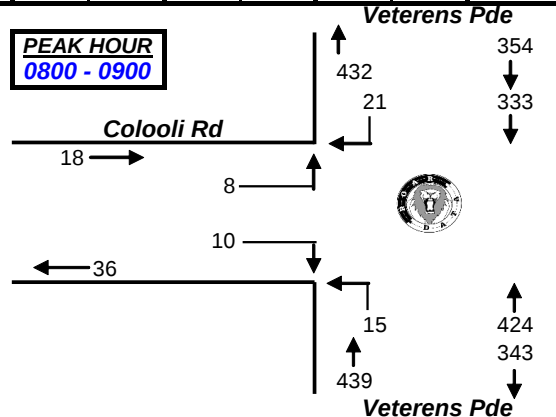
Ph.88196847, Fax 88196849, Mob.0418-239019

All Vehicles

All Vehicles	NORTH		WEST		SOUTH		
	Veterens Pde		Colooli Rd		Veterens Pde		
Time Per	<u>R</u>	<u>L</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>L</u>	TOTAL
0630 - 0645	1	26	1	0	2	39	69
0645 - 0700	6	44	0	1	6	53	110
0700 - 0715	3	36	0	3	0	36	78
0715 - 0730	4	48	0	2	11	51	116
0730 - 0745	6	41	2	1	2	87	139
0745 - 0800	5	57	0	1	5	79	147
0800 - 0815	5	82	1	2	7	124	221
0815 - 0830	5	78	2	1	2	95	183
0830 - 0845	8	80	2	3	2	103	198
0845 - 0900	3	93	3	4	4	102	209
0900 - 0915	5	69	6	3	6	89	178
0915 - 0930	1	53	4	4	4	100	166
Period End	52	707	21	25	51	958	1814

	NORTH		WEST		SOUTH		
	Veterens Pde		Colooli Rd		Veterens Pde		
Peak Per	<u>R</u>	<u>L</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>L</u>	TOTAL
0630 - 0730	14	154	1	6	19	179	373
0645 - 0745	19	169	2	7	19	227	443
0700 - 0800	18	182	2	7	18	253	480
0715 - 0815	20	228	3	6	25	341	623
0730 - 0830	21	258	5	5	16	385	690
0745 - 0845	23	297	5	7	16	401	749
0800 - 0900	21	333	8	10	15	424	811
0815 - 0915	21	320	13	11	14	389	768
0830 - 0930	17	295	15	14	16	394	751

PEAK HR	21	333	8	10	15	424	811
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Client : Varga Traffic Planning

Job No/Name : 2773 NARRABEEN Traffic Counts

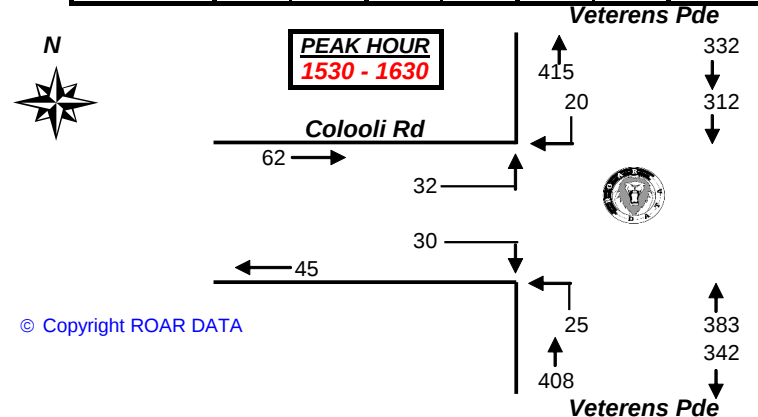
Day/Date : Wednesday 5th August 09

All Vehicles

All Vehicles	NORTH		WEST		SOUTH		TOTAL
	Veterens Pde		Colooli Rd		Veterens Pde		
Time Per	<u>R</u>	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	
1530 - 1545	6	84	7	6	6	90	199
1545 - 1600	7	70	6	6	10	82	181
1600 - 1615	3	70	9	12	5	120	219
1615 - 1630	4	88	10	6	4	91	203
1630 - 1645	5	90	4	3	4	75	181
1645 - 1700	3	106	2	6	5	71	193
1700 - 1715	4	71	5	9	6	85	180
1715 - 1730	2	115	4	3	0	88	212
1730 - 1745	2	100	1	2	1	76	182
1745 - 1800	2	96	0	3	2	86	189
1800 - 1815	1	78	5	0	1	86	171
1815 - 1830	0	62	2	2	5	66	137
Period End	39	1030	55	58	49	1016	2247

	NORTH		WEST		SOUTH		
	Veterens Pde		Colooli Rd		Veterens Pde		
Peak Per	<u>R</u>	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	TOTAL
1530 - 1630	20	312	32	30	25	383	802
1545 - 1645	19	318	29	27	23	368	784
1600 - 1700	15	354	25	27	18	357	796
1615 - 1715	16	355	21	24	19	322	757
1630 - 1730	14	382	15	21	15	319	766
1645 - 1745	11	392	12	20	12	320	767
1700 - 1800	10	382	10	17	9	335	763
1715 - 1815	7	389	10	8	4	336	754
1730 - 1830	5	336	8	7	9	314	679

PEAK HR	20	312	32	30	25	383	802
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Reliable, Original & Authentic Results

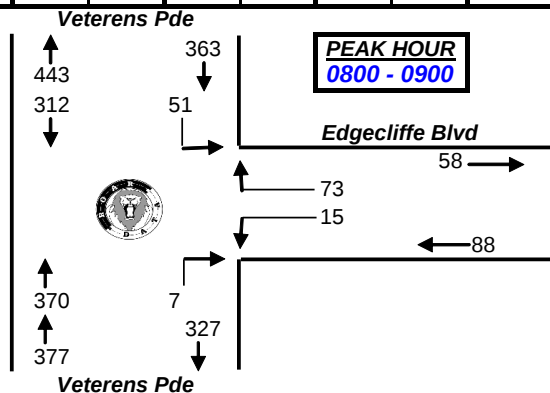
Ph.88196847, Fax 88196849, Mob.0418-239019

All Vehicles

All Vehicles	NORTH		EAST		SOUTH		TOTAL
	Veterens Pde		Edgecliffe		Veterens Pde		
Time Per	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>I</u>	
0630 - 0645	22	7	4	7	1	35	76
0645 - 0700	37	7	13	4	2	42	105
0700 - 0715	42	3	7	0	2	28	82
0715 - 0730	45	5	8	3	1	52	114
0730 - 0745	48	3	21	4	4	64	144
0745 - 0800	54	9	15	7	2	67	154
0800 - 0815	68	19	22	9	2	101	221
0815 - 0830	69	9	19	1	1	77	176
0830 - 0845	86	10	18	5	3	88	210
0845 - 0900	89	13	14	0	1	104	221
0900 - 0915	64	10	10	0	3	77	164
0915 - 0930	55	8	23	4	1	79	170
Period End	679	103	174	44	23	814	1837

	NORTH		EAST		SOUTH		
	Veterens Pde		Edgecliffe		Veterens Pde		
Peak Per	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>I</u>	TOTAL
0630 - 0730	146	22	32	14	6	157	377
0645 - 0745	172	18	49	11	9	186	445
0700 - 0800	189	20	51	14	9	211	494
0715 - 0815	215	36	66	23	9	284	633
0730 - 0830	239	40	77	21	9	309	695
0745 - 0845	277	47	74	22	8	333	761
0800 - 0900	312	51	73	15	7	370	828
0815 - 0915	308	42	61	6	8	346	771
0830 - 0930	294	41	65	9	8	348	765

PEAK HR	312	51	73	15	7	370	828
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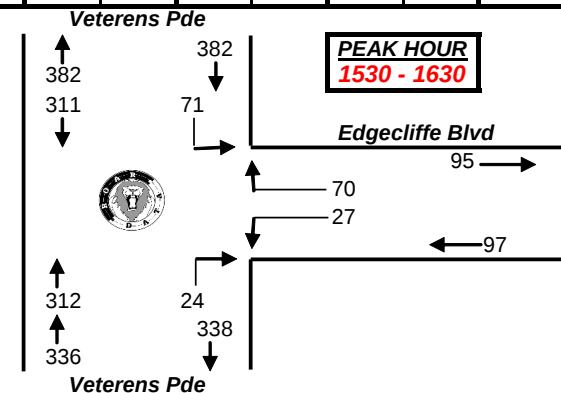
Client : Varga Traffic Planning
 Job No/Name : 2773 NARRABEEN Traffic Counts
 Day/Date : Wednesday 5th August 09

All Vehicles

All Vehicles	NORTH		EAST		SOUTH		TOTAL
	Veterens Pde		Edgecliffe		Veterens Pde		
Time Per	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>I</u>	
1530 - 1545	82	22	13	4	5	76	202
1545 - 1600	69	17	22	9	6	68	191
1600 - 1615	75	15	18	8	7	101	224
1615 - 1630	85	17	17	6	6	67	198
1630 - 1645	80	16	15	5	2	74	192
1645 - 1700	92	17	11	5	8	63	196
1700 - 1715	73	15	12	0	3	81	184
1715 - 1730	110	14	14	1	3	70	212
1730 - 1745	86	24	9	4	4	70	197
1745 - 1800	90	20	15	6	4	68	203
1800 - 1815	66	15	12	5	4	72	174
1815 - 1830	60	9	10	3	6	61	149
Period End	968	201	168	56	58	871	2322

	NORTH		EAST		SOUTH		
	Veterens Pde		Edgecliffe		Veterens Pde		
Peak Per	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>R</u>	<u>I</u>	TOTAL
1530 - 1630	311	71	70	27	24	312	815
1545 - 1645	309	65	72	28	21	310	805
1600 - 1700	332	65	61	24	23	305	810
1615 - 1715	330	65	55	16	19	285	770
1630 - 1730	355	62	52	11	16	288	784
1645 - 1745	361	70	46	10	18	284	789
1700 - 1800	359	73	50	11	14	289	796
1715 - 1815	352	73	50	16	15	280	786
1730 - 1830	302	68	46	18	18	271	723

PEAK HR	311	71	70	27	24	312	815
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Reliable, Original & Authentic Results

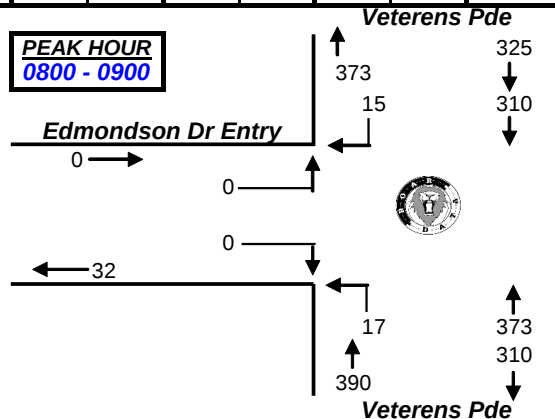
Ph.88196847, Fax 88196849, Mob.0418-239019

All Vehicles

All Vehicles	NORTH		WEST		SOUTH		
	Veterens Pde		Edmondson Dr		Veterens Pde		
Time Per	<u>R</u>	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	TOTAL
0630 - 0645	1	25	0	0	4	40	70
0645 - 0700	0	44	0	0	9	40	93
0700 - 0715	1	41	0	0	3	32	77
0715 - 0730	0	51	0	0	3	53	107
0730 - 0745	2	48	0	0	3	69	122
0745 - 0800	3	59	0	0	6	66	134
0800 - 0815	7	70	0	0	4	106	187
0815 - 0830	2	75	0	0	4	74	155
0830 - 0845	4	80	0	0	1	91	176
0845 - 0900	2	85	0	0	8	102	197
0900 - 0915	2	59	0	0	8	81	150
0915 - 0930	1	60	0	0	4	80	145
Period End	25	697	0	0	57	834	1613

	NORTH		WEST		SOUTH		
	Veterens Pde		Edmondson Dr		Veterens Pde		
Peak Per	<u>R</u>	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	TOTAL
0630 - 0730	2	161	0	0	19	165	347
0645 - 0745	3	184	0	0	18	194	399
0700 - 0800	6	199	0	0	15	220	440
0715 - 0815	12	228	0	0	16	294	550
0730 - 0830	14	252	0	0	17	315	598
0745 - 0845	16	284	0	0	15	337	652
0800 - 0900	15	310	0	0	17	373	715
0815 - 0915	10	299	0	0	21	348	678
0830 - 0930	9	284	0	0	21	354	668

PEAK HR	15	310	0	0	17	373	715
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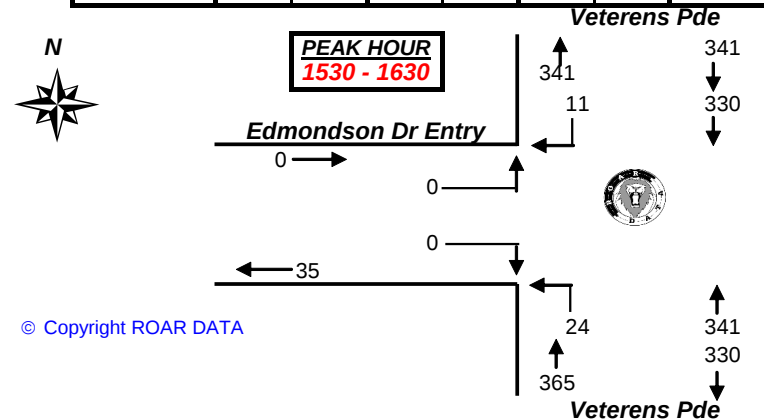
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Day/Date : Wednesday 5th August 09

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All Vehicles	NORTH		WEST		SOUTH		
	Veterens Pde		Edmondson Dr		Veterens Pde		
Time Per	<u>R</u>	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	TOTAL
1530 - 1545	4	81	0	0	7	85	177
1545 - 1600	4	74	0	0	6	75	159
1600 - 1615	1	85	0	0	8	106	200
1615 - 1630	2	90	0	0	3	75	170
1630 - 1645	1	82	0	0	4	75	162
1645 - 1700	1	99	0	0	4	70	174
1700 - 1715	0	73	0	0	3	86	162
1715 - 1730	1	110	0	0	1	72	184
1730 - 1745	2	86	0	0	5	73	166
1745 - 1800	1	92	0	0	3	71	167
1800 - 1815	1	72	0	0	0	75	148
1815 - 1830	1	59	0	0	2	66	128
Period End	19	1003	0	0	46	929	1997

	NORTH		WEST		SOUTH		
	Veterens Pde		Edmondson Dr		Veterens Pde		
Peak Per	<u>R</u>	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	TOTAL
1530 - 1630	11	330	0	0	24	341	706
1545 - 1645	8	331	0	0	21	331	691
1600 - 1700	5	356	0	0	19	326	706
1615 - 1715	4	344	0	0	14	306	668
1630 - 1730	3	364	0	0	12	303	682
1645 - 1745	4	368	0	0	13	301	686
1700 - 1800	4	361	0	0	12	302	679
1715 - 1815	5	360	0	0	9	291	665
1730 - 1830	5	309	0	0	10	285	609

PEAK HR	11	330	0	0	24	341	706
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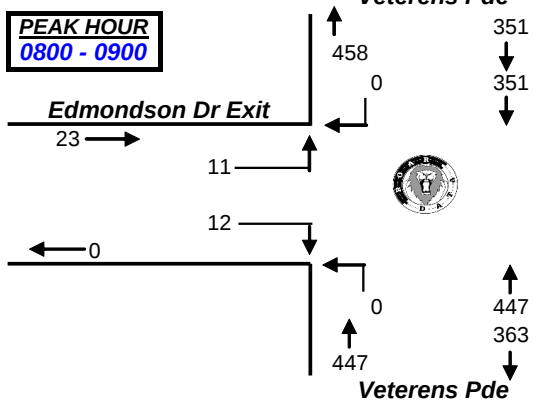
Ph.88196847, Fax 88196849, Mob.0418-239019

All Vehicles

All Vehicles	NORTH		WEST		SOUTH		
	Veterens Pde		Edmondson Dr		Veterens Pde		
Time Per	<u>R</u>	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	TOTAL
0630 - 0645	0	28	1	2	0	41	72
0645 - 0700	0	43	2	1	0	55	101
0700 - 0715	0	43	0	2	0	35	80
0715 - 0730	0	46	1	4	0	60	111
0730 - 0745	0	47	2	3	0	84	136
0745 - 0800	0	63	1	1	0	79	144
0800 - 0815	0	86	4	2	0	123	215
0815 - 0830	0	74	1	3	0	97	175
0830 - 0845	0	92	2	4	0	105	203
0845 - 0900	0	99	4	3	0	122	228
0900 - 0915	0	70	1	4	0	85	160
0915 - 0930	0	58	2	5	0	102	167
Period End	0	749	21	34	0	988	1792

	NORTH		WEST		SOUTH		
	Veterens Pde		Edmondson Dr		Veterens Pde		
Peak Per	<u>R</u>	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	TOTAL
0630 - 0730	0	160	4	9	0	191	364
0645 - 0745	0	179	5	10	0	234	428
0700 - 0800	0	199	4	10	0	258	471
0715 - 0815	0	242	8	10	0	346	606
0730 - 0830	0	270	8	9	0	383	670
0745 - 0845	0	315	8	10	0	404	737
0800 - 0900	0	351	11	12	0	447	821
0815 - 0915	0	335	8	14	0	409	766
0830 - 0930	0	319	9	16	0	414	758

PEAK HR	0	351	11	12	0	447	821
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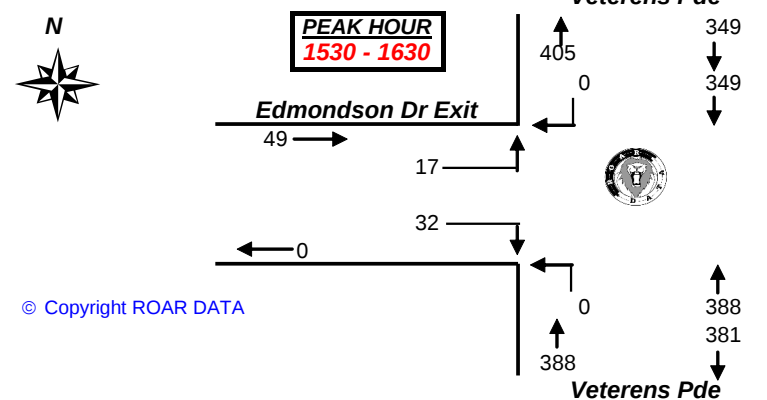
Client : Varga Traffic Planning
 Job No/Name : 2773 NARRABEEN Traffic Counts
 Day/Date : Wednesday 5th August 09

All Vehicles

All Vehicles	NORTH		WEST		SOUTH		
	Veterens Pde		Edmondson Dr		Veterens Pde		
Time Per	<u>R</u>	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	TOTAL
1530 - 1545	0	94	6	10	0	88	198
1545 - 1600	0	77	4	9	0	91	181
1600 - 1615	0	81	6	7	0	122	216
1615 - 1630	0	97	1	6	0	87	191
1630 - 1645	0	94	3	3	0	87	187
1645 - 1700	0	103	4	6	0	73	186
1700 - 1715	0	83	2	5	0	93	183
1715 - 1730	0	117	1	7	0	85	210
1730 - 1745	0	106	1	4	0	76	187
1745 - 1800	0	104	2	6	0	82	194
1800 - 1815	0	76	3	4	0	85	168
1815 - 1830	0	67	4	2	0	70	143
Period End	0	1099	37	69	0	1039	2244

	NORTH		WEST		SOUTH		
	Veterens Pde		Edmondson Dr		Veterens Pde		
Peak Per	<u>R</u>	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	TOTAL
1530 - 1630	0	349	17	32	0	388	786
1545 - 1645	0	349	14	25	0	387	775
1600 - 1700	0	375	14	22	0	369	780
1615 - 1715	0	377	10	20	0	340	747
1630 - 1730	0	397	10	21	0	338	766
1645 - 1745	0	409	8	22	0	327	766
1700 - 1800	0	410	6	22	0	336	774
1715 - 1815	0	403	7	21	0	328	759
1730 - 1830	0	353	10	16	0	313	692

PEAK HR	0	349	17	32	0	388	786
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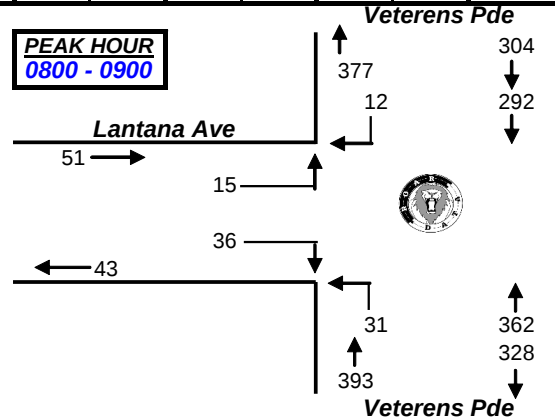
Ph.88196847, Fax 88196849, Mob.0418-239019

All Vehicles

All Vehicles	NORTH		WEST		SOUTH		
	Veterens Pde		Lantana Ave		Veterens Pde		
Time Per	<u>R</u>	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	TOTAL
0630 - 0645	0	25	2	6	4	37	74
0645 - 0700	5	38	4	13	7	45	112
0700 - 0715	4	35	2	8	6	31	86
0715 - 0730	3	51	1	7	3	55	120
0730 - 0745	1	47	3	6	7	72	136
0745 - 0800	3	55	1	5	9	67	140
0800 - 0815	1	69	4	12	7	93	186
0815 - 0830	2	70	1	8	8	83	172
0830 - 0845	5	72	5	5	7	86	180
0845 - 0900	4	81	5	11	9	100	210
0900 - 0915	2	60	2	10	9	87	170
0915 - 0930	4	57	3	5	13	83	165
Period End	34	660	33	96	89	839	1751

	NORTH		WEST		SOUTH		
	Veterens Pde		Lantana Ave		Veterens Pde		
Peak Per	<u>R</u>	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	TOTAL
0630 - 0730	12	149	9	34	20	168	392
0645 - 0745	13	171	10	34	23	203	454
0700 - 0800	11	188	7	26	25	225	482
0715 - 0815	8	222	9	30	26	287	582
0730 - 0830	7	241	9	31	31	315	634
0745 - 0845	11	266	11	30	31	329	678
0800 - 0900	12	292	15	36	31	362	748
0815 - 0915	13	283	13	34	33	356	732
0830 - 0930	15	270	15	31	38	356	725

PEAK HR	12	292	15	36	31	362	748
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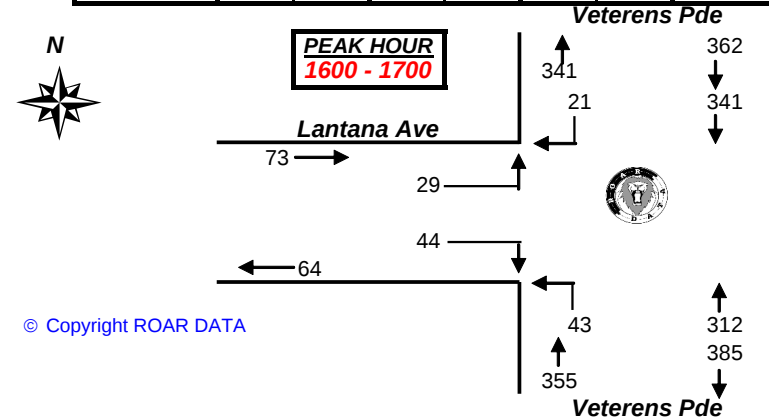
Client : Varga Traffic Planning
Job No/Name : 2773 NARRABEEN Traffic Counts
Day/Date : Wednesday 5th August 09

All Vehicles

All Vehicles	NORTH		WEST		SOUTH		
	Veterens Pde		Lantana Ave		Veterens Pde		
Time Per	<u>R</u>	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	TOTAL
1530 - 1545	6	73	6	18	13	75	191
1545 - 1600	4	66	4	9	13	79	175
1600 - 1615	6	81	10	19	10	108	234
1615 - 1630	7	86	8	6	10	63	180
1630 - 1645	3	76	7	10	15	71	182
1645 - 1700	5	98	4	9	8	70	194
1700 - 1715	2	67	5	6	13	81	174
1715 - 1730	7	102	2	7	10	73	201
1730 - 1745	3	88	4	9	7	70	181
1745 - 1800	5	89	3	2	12	69	180
1800 - 1815	5	71	8	6	13	68	171
1815 - 1830	3	56	2	9	13	69	152
Period End	56	953	63	110	137	896	2215

	NORTH		WEST		SOUTH		
	Veterens Pde		Lantana Ave		Veterens Pde		
Peak Per	<u>R</u>	<u>I</u>	<u>L</u>	<u>R</u>	<u>L</u>	<u>I</u>	TOTAL
1530 - 1630	23	306	28	52	46	325	780
1545 - 1645	20	309	29	44	48	321	771
1600 - 1700	21	341	29	44	43	312	790
1615 - 1715	17	327	24	31	46	285	730
1630 - 1730	17	343	18	32	46	295	751
1645 - 1745	17	355	15	31	38	294	750
1700 - 1800	17	346	14	24	42	293	736
1715 - 1815	20	350	17	24	42	280	733
1730 - 1830	16	304	17	26	45	276	684

PEAK HR	21	341	29	44	43	312	790
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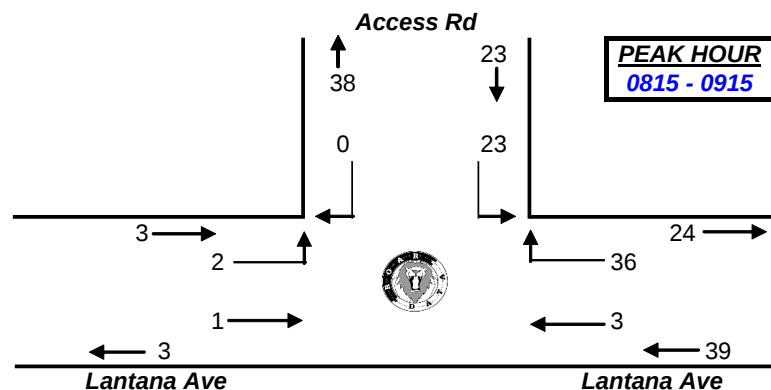
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Ph.88196847, Fax 88196849, Mob.0418-239019

All Vehicles

All Vehicles	WEST		NORTH		EAST		
	Lantana Ave		Access Rd		Lantana Ave		
Time Per	<u>L</u>	<u>T</u>	<u>R</u>	<u>L</u>	<u>T</u>	<u>R</u>	TOTAL
0630 - 0645	0	0	0	3	0	3	6
0645 - 0700	0	2	0	5	1	5	13
0700 - 0715	0	2	1	3	1	5	12
0715 - 0730	0	0	0	4	0	6	10
0730 - 0745	1	0	0	4	2	6	13
0745 - 0800	0	0	0	4	0	7	11
0800 - 0815	0	1	0	3	1	4	9
0815 - 0830	0	1	0	6	1	12	20
0830 - 0845	0	0	0	5	0	8	13
0845 - 0900	0	0	0	6	0	8	14
0900 - 0915	2	0	0	6	2	8	18
0915 - 0930	0	0	0	5	0	8	13
Period End	3	6	1	54	8	80	152

	WEST		NORTH		EAST		
	Lantana Ave		Access Rd		Lantana Ave		
Peak Per	<u>L</u>	<u>T</u>	<u>R</u>	<u>L</u>	<u>T</u>	<u>R</u>	TOTAL
0630 - 0730	0	4	1	15	2	19	41
0645 - 0745	1	4	1	16	4	22	48
0700 - 0800	1	2	1	15	3	24	46
0715 - 0815	1	1	0	15	3	23	43
0730 - 0830	1	2	0	17	4	29	53
0745 - 0845	0	2	0	18	2	31	53
0800 - 0900	0	2	0	20	2	32	56
0815 - 0915	2	1	0	23	3	36	65
0830 - 0930	2	0	0	22	2	32	58
PEAK HR	2	1	0	23	3	36	65

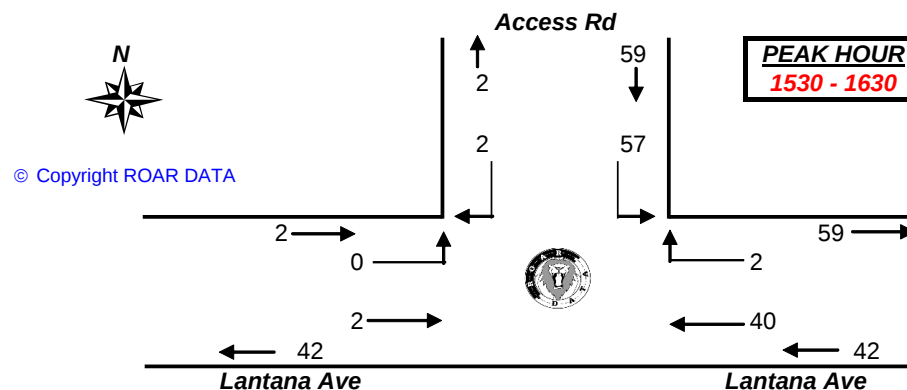


Client : Varga Traffic Planning
 Job No/Name : 2773 NARRABEEN Traffic Counts
 Day/Date : Wednesday 5th August 09

All Vehicles

All Vehicles	WEST		NORTH		EAST		
	Lantana Ave		Access Rd		Lantana Ave		
Time Per	<u>L</u>	<u>T</u>	<u>R</u>	<u>L</u>	<u>T</u>	<u>R</u>	TOTAL
1530 - 1545	0	0	1	23	14	0	38
1545 - 1600	0	0	0	8	8	1	17
1600 - 1615	0	1	1	18	8	0	28
1615 - 1630	0	1	0	8	10	1	20
1630 - 1645	0	2	0	14	8	2	26
1645 - 1700	1	0	1	11	8	0	21
1700 - 1715	2	0	0	9	5	1	17
1715 - 1730	0	0	0	5	7	0	12
1730 - 1745	0	0	0	3	3	1	7
1745 - 1800	0	0	0	4	6	0	10
1800 - 1815	0	1	0	14	11	1	27
1815 - 1830	0	0	0	0	1	0	1
Period End	3	5	3	117	89	7	224

	WEST		NORTH		EAST		
	Lantana Ave		Access Rd		Lantana Ave		
Peak Per	<u>L</u>	<u>T</u>	<u>R</u>	<u>L</u>	<u>T</u>	<u>R</u>	TOTAL
1530 - 1630	0	2	2	57	40	2	103
1545 - 1645	0	4	1	48	34	4	91
1600 - 1700	1	4	2	51	34	3	95
1615 - 1715	3	3	1	42	31	4	84
1630 - 1730	3	2	1	39	28	3	76
1645 - 1745	3	0	1	28	23	2	57
1700 - 1800	2	0	0	21	21	2	46
1715 - 1815	0	1	0	26	27	2	56
1730 - 1830	0	1	0	21	21	2	45
PEAK HR	0	2	2	57	40	2	103



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