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Proposed Residential Subdivision
Bilambil Road, Hogans Road & Urliup Road, Bilambil

**TRANSPORT IMPACT
ASSESSMENT**

Prepared For

Jackson International

26 November 2009

crgref: 08219t



DOCUMENT REGISTER

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1 INTRODUCTION

CRG Traffic & Acoustics has been engaged by Jackson International to undertake a traffic impact assessment of its proposal to develop a residential estate at Bilambil.

It is intended that this report will form part of a Major Project Application to the Department of Planning.

The following issues have been addressed as part of the assessment:

- Traffic impact;
- Road network & access design;
- Pedestrian provisions;
- Public transport access.

2 PROPOSED DEVELOPMENT

2.1 Subject Site

As shown in Figure 2.1, the subject site has frontage to Hogans Road, Bilambil Road and Uriup Road.

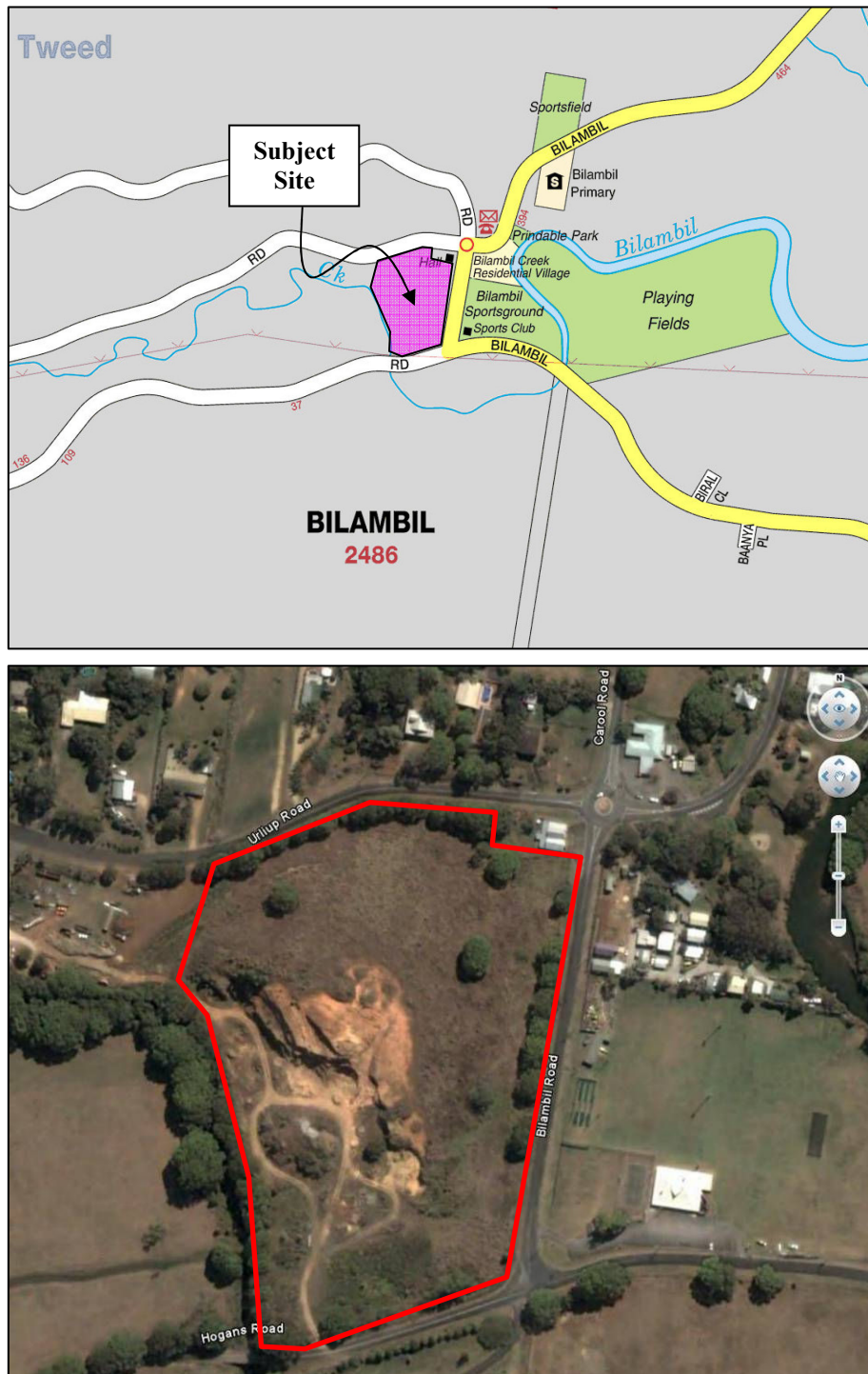


Figure 2.1 – Location of Subject Site

2.2 Plan of Development

The proposed plan of development includes a total of 53 lots including 49 detached dwelling allotments.

It is intended that a child care centre be provided on Lot 53 in the north east corner of the site, however consent is not sought for this at this time.

Access to the development is proposed to occur via a new intersection with Urliup Road and another with Hogans Road. Direct access to Lot 53 will be provided via Bilambil Road.

Plans of the proposed development are shown in Figure 2.2 and Figure 2.3.

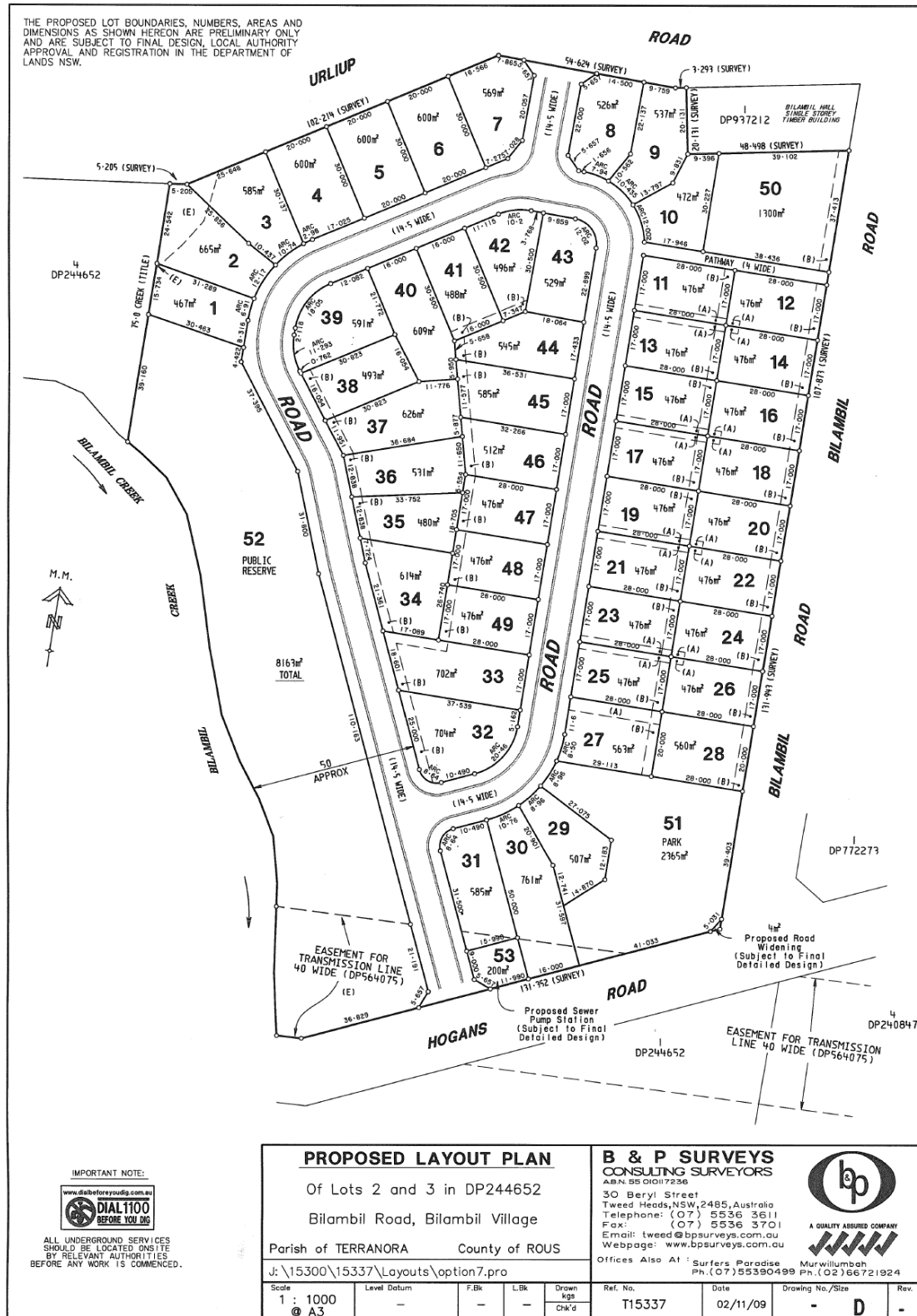


Figure 2.2 - Proposed Plan of Development

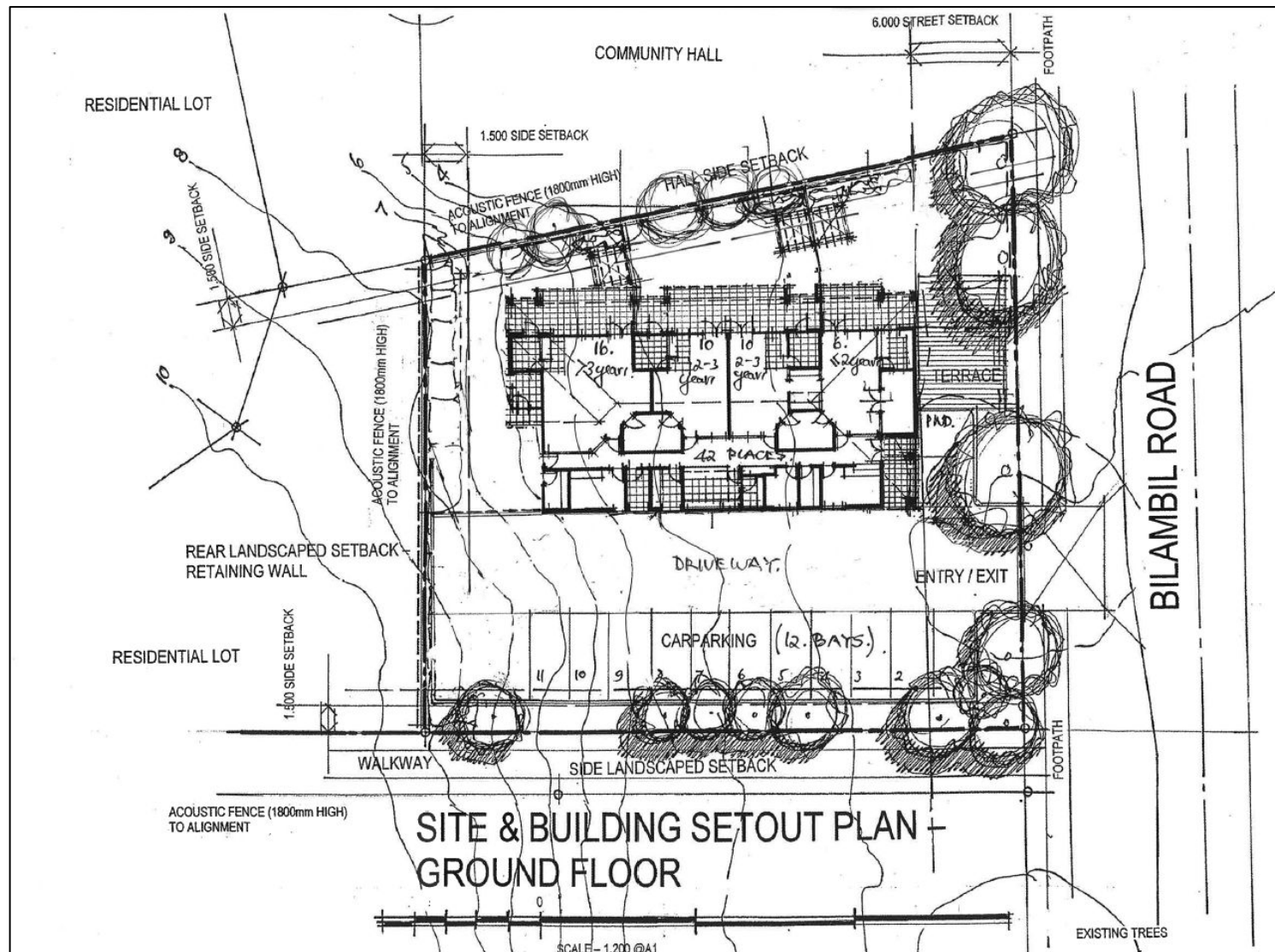


Figure 2.3: Proposed Child Care Centre

3 LOCAL ROAD & TRAFFIC CONDITIONS

Images of the local road network in the vicinity of the subject site are shown in Figure 3.1.



Urliup Road – Looking west



Urliup Road – Looking west from Bilambil Road



Bilambil Road – Looking south from Urliup Road



Bilambil Road – Looking south



Bilambil Road / Urliup Road Roundabout



Bilambil Road – Looking north

Figure 3.1: Images of the Local Road Network

The road network adjacent to the subject site is subject to a 'Local Traffic Area' speed limit of 50km/hr. Urliup Road, Bilambil Road and Hogans Road are all two-way, two-lane roads with unsealed road shoulders.

The intersection of Urliup Road & Bilambil Road is controlled by a single lane roundabout, while the intersection of Hogans Road & Bilambil Road is a priority controlled T-junction.

CRG conducted peak period traffic counts at the intersection of Urliup Road / Bilambil Road and Hogans Road / Bilambil Road on Thursday 5 June 2008. The results of the survey are presented in full in Appendix A and are summarised in Figure 3.2.

CRG also conducted tube count surveys on Bilambil Road adjacent to the site frontage from Monday 9 June 2008 to Sunday 15 June 2008. The results of the survey are presented in full in Appendix B, and are summarised in Figure 3.3, revealing that Bilambil Road currently carries in the order of 1,800 vehicles per day adjacent to the subject site.

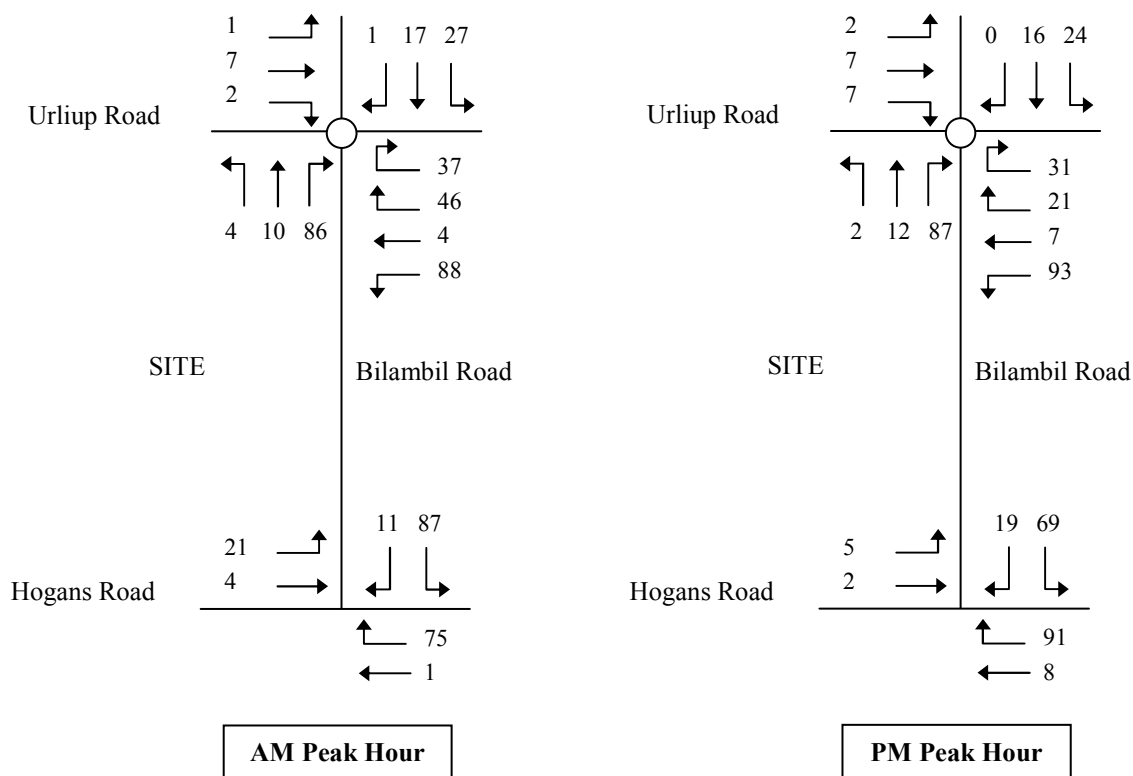


Figure 3.2: Existing Traffic Volumes

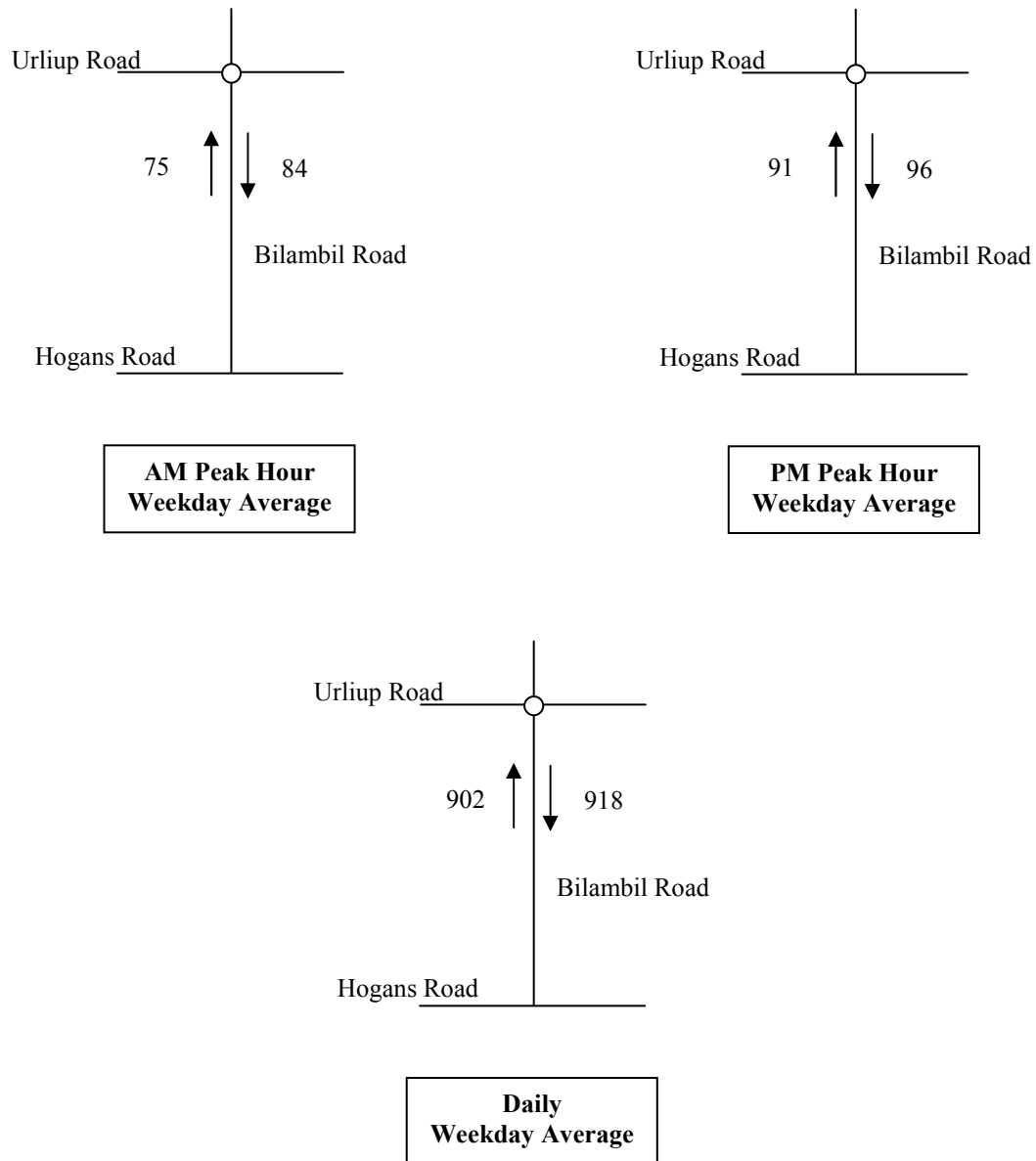


Figure 3.3: Existing Traffic Volumes

4 DEVELOPMENT TRAFFIC

4.1 Trip Generation

It is noted that the Tweed Shire Council's 'Tweed Road Contribution Plan' (TRCP) specifies a traffic generation rate of 6.5 trips per day for detached dwellings. However, the following rates have been adopted for traffic impact assessment purposes in accordance with the requirements specified in the Roads and Traffic Authority's *Guide to Traffic Generating Developments*:

Detached Dwellings

Peak hour: 0.85 trips per dwelling
Daily: 9 trips per dwelling

Child Care Centre

Peak hour: 0.8 trips per child
Daily: 2 trips per child

It is expected most trips generated by the child care centre will be drop in trips, rather than primary trips. In this case, it has been assumed that 80% will be drop in trips.

Application of the above rates to the proposed development plan yields a traffic generation potential of 816 daily vehicle trips and 81 peak hour vehicle trips.

The estimated directional distribution of proposed development traffic is provided in Table 4.1.

Table 4.1 – Estimated Development Traffic Generation

Component	Daily	Morning Peak Hour			Afternoon Peak Hour		
		In	Out	Total	In	Out	Total
Detached dwellings (49)	441	8	34	42	25	17	42
Child Care Centre (42 children)	84	17	17	34	17	17	34
TOTAL	525	25	51	76	42	34	76

4.2 Trip Distribution

For the purposes of this assessment, it has been assumed that the development traffic will distribute through the local road network in proportion to existing traffic volumes, as presented in Section 3.

The estimated trip distribution is shown in Figure 4.1. Resultant estimates of peak period traffic development volumes are presented in Figure 4.2.

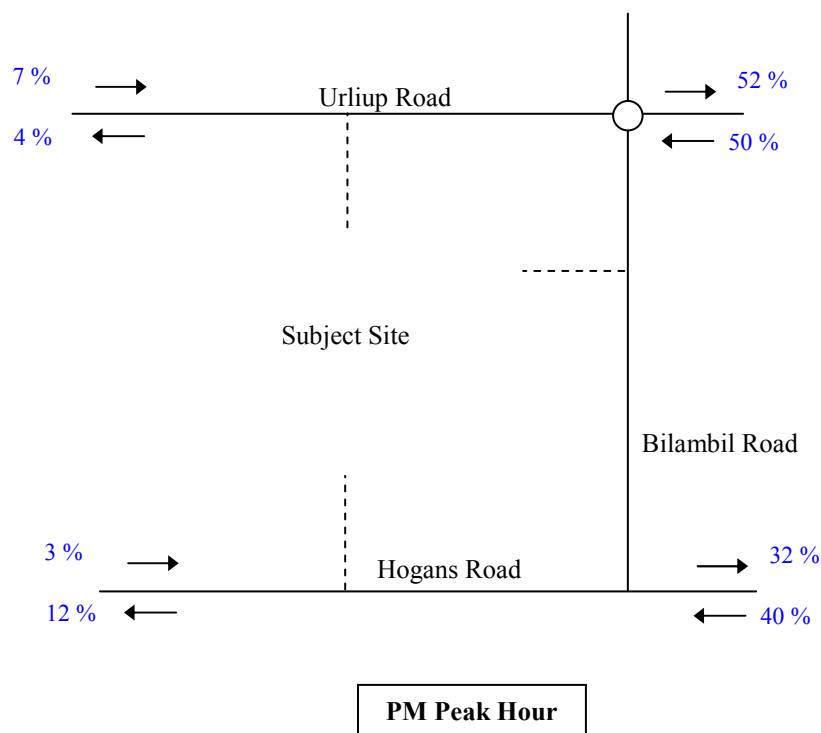
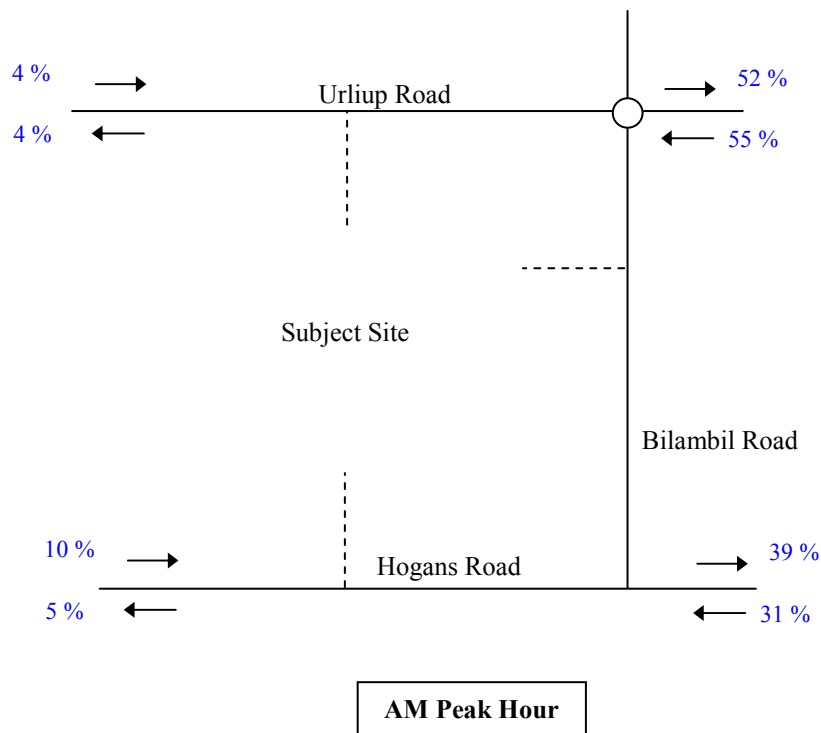


Figure 4.1: Estimated Development Traffic Distribution

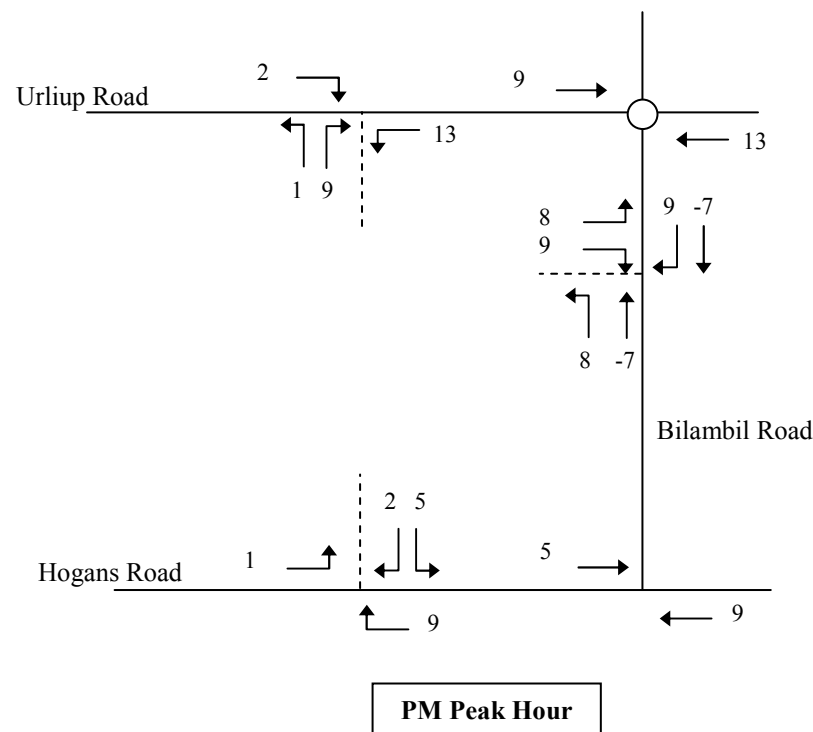
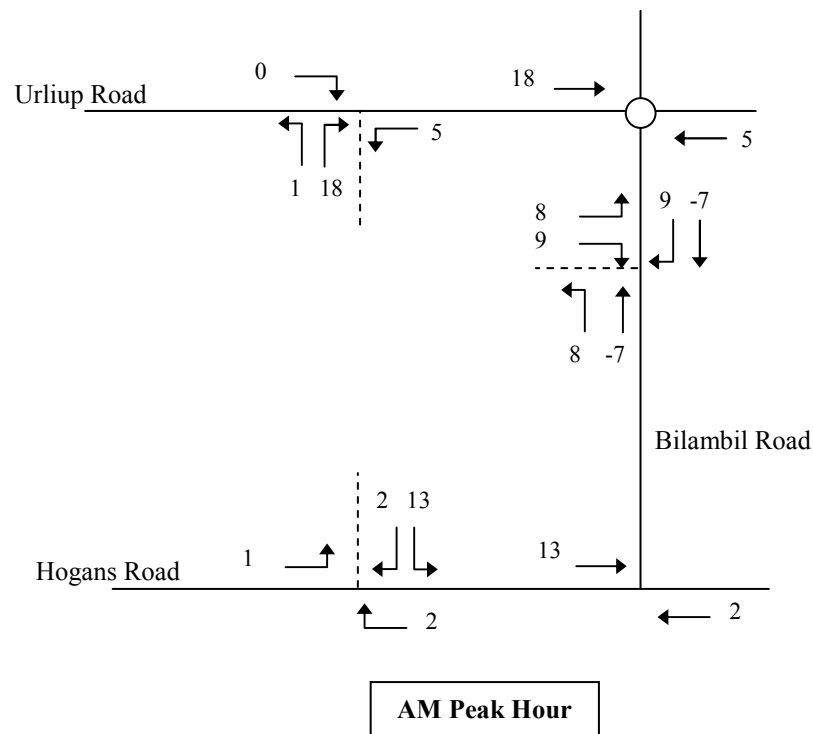


Figure 4.2 – Estimated Development Traffic Volumes

4.3 Traffic Impact

In accordance with Table 4.1 of the Austroads publication 'Guide to Traffic Engineering Practice – Part 5: Intersections at Grade' the capacity of an intersection should be analysed when the major road flow exceeds 400 vehicles per hour and the minor road flow exceeds 250 vehicles per hour.

Table 4.1 — Intersection Capacity - Uninterrupted Flow Conditions

Major Road Type ¹	Major Road Flow (vph) ²	Minor Road Flow (vph) ³
Two-lane	400	250
	500	200
	650	100
Four-lane	1000	100
	1500	50
	2000	25

Notes:

1. Major road is through road (i.e. has priority).
2. Major road design volumes include through and turning movements.
3. Minor road design volumes include through and turning volumes.

The existing traffic volumes at the Bilambil Road / Urliup Road and the Bilambil Road / Hogans Road intersections are well below the above criteria.

With regard to the capacity of Kennedy Drive, Council at its meeting on 9 June 2007 considered a report in relation to this issue and resolved as follows:

1. Council adopts the revised Level of Service D equating to 24,650 vehicles per day on Cobaki Bridge at Kennedy Drive.
2. The current remaining spare capacity (being 1506 vehicle trips per day) to be provided to the future development west of Cobaki Bridge on a first in / first served basis.
3. No development is approved west of Cobaki Bridge when the remaining spare traffic capacity of 1506 vehicle trips per day is consumed.
4. With respect to Items 2 and 3 above, a review of traffic generation and development approvals to be undertaken in twelve months time.

On 26 March 2008 Tweed Shire Council confirmed by email that Major Project Application No. 08-0034 has been allocated capacity within the remaining Kennedy Drive capacity and therefore the project is consistent with Council's resolution.

5 ACCESS & INTERSECTION DESIGN

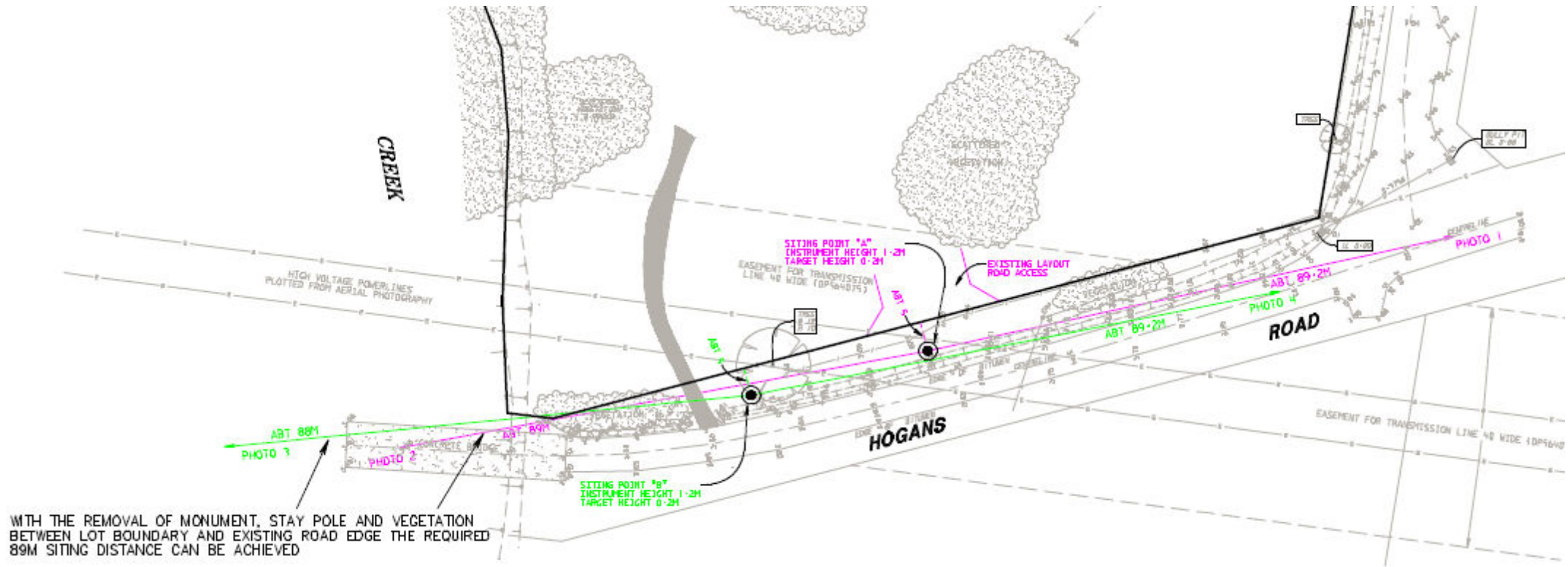
5.1 Sight Distance Requirements

The sight distance requirements for an intersection are presented in Table 6.3 of Austroads Part 5. Safe Intersection Sight Distance (SISD) is the minimum standard which should be provided on the major road at any intersection. It provides sufficient distance for a driver of a vehicle on the major road to observe a vehicle on a minor approach moving into a collision situation, and to decelerate to a stop before reaching the collision point.

In accordance with Table 6.3 of Austroads Part 5, the minimum SISD requirement for a speed environment of 50km/hr is 89 metres.

Detailed survey carried out by B & P Surveys has confirmed that the proposed intersection with Hogan's Road would comply with Austroads required for a 50 Km / Hr speed environment if some vegetation clearing is undertaken within the road reserve to the west of the intersection. This is shown in Figure 5.1.

Detailed engineering drawings prepared by CLA Consultants indicate that the proposed intersection with Urliup Road will comply with Austroads requirements with respect to sight distance subject to works being undertaken on Urliup Road to reduce the height of the existing vertical curve located just to the west of the proposed new intersection. This is detailed in an accompanying report prepared by CLA Consultants. A copy of the proposed intersection design is shown in Figure 5.2.



**FIGURE 5.1 – DETAILED SURVEY OF SIGHT DISTANCE AT THE PROPOSED NEW INTERSECTION WITH HOGAN'S ROAD
(EXTRACTED FROM B & P SURVEYS DRAWING 17397D)**

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5.2 Warrants for Turning Lanes

Urliup Road and Hogans Road

As shown in Figure 4.2, the proposed development will generate a maximum of 2 right turn ingress movements per hour at the Urliup Road intersection and 9 movements per hour at the Hogans Road intersection. The associated volume of through-traffic on Urliup Road and Hogans Road is also very minor.

While this level of right turn activity will not cause any significant queuing, it is recommended that the each intersection be constructed to satisfy a typical basic rural layout (type BA) as defined in Austroads Part 5. The shoulder in Urliup Road and Hogans Road through the intersection should be widened to provide a 6 metre width so that through-traffic can safely pass right turning traffic.

A type BA intersection layout is shown in Figure 5.3 below.

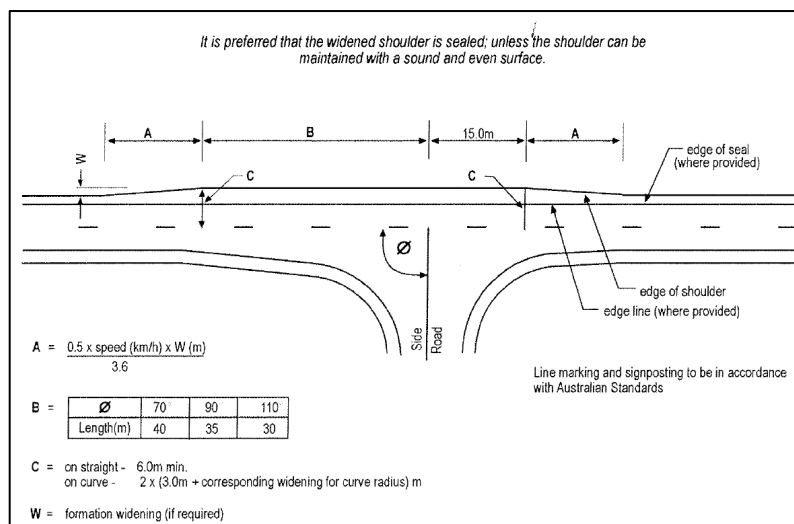


Figure 5.3: Type BAR Right Turn Treatment
(Figure 6.37 from Austroads Part 5)

Bilambil Road - Access to the Retail Development

It is estimated that the proposed child care centre development will generate up to 9 right turn ingress movements per hour during peak periods.

Again, this level of right turn activity is minor and does not warrant the provision of a dedicated right turn lane in Bilambil Road. Instead, it is recommended that a Type BA right turn treatment be provided in Bilambil Road as shown in Figure 5.3.

6 PROPOSED INTERNAL ROAD NETWORK

The proposed road network provides a high level of connectivity with no cul-de-sac streets proposed.

Vehicle speeds will be controlled by the minimal length of straight street lengths. Four way intersections have been avoided in the design, and intersection spacing complies with Austroads requirements.

The proposed roads within the subdivision have been designed with a 14.5 metre wide reserve. In accordance with Table D.1.7 of Council's Development Design Specification D1 – Road Design, an Access Street with a minimum reserve width of 13 metres and pavement width of 6 metres may carry up to 1,000 vehicles per day.

The traffic counts presented in Section 3 that Hogan's Road currently carries in the order of 300 vehicles per day and Urliup Road about 150 vehicles per day. Furthermore, it is estimated that the proposed residential development will generate in the order of 441 vehicles per day which will distribute to two intersections with the existing road network. It is estimated that roads within the estate will carry a maximum of 300 vehicles per day.

The proposed road alignment within the estate does not provide any benefit to through-traffic between Hogan's Road and Urliup Road. Northbound traffic originating from Hogan's Road will turn left into Bilambil Road rather than entering the estate.

There would be some benefit for traffic originating from the west on Hogan's Road and destined for Urliup Road, west of the subject site, to use the proposed new through road instead of Bilambil Road, and vice versa. However, the demand for these movements will be very low and inconsequential. Even if 25% of traffic on Hogan's Road diverted through the site, this would only increase the volume on the main internal road to approximately 400 vehicles per day which is well within the nominated capacity for a 14.5 metre wide Access Street.

The issue of roadway capacity aside, the promotion of the proposed internal road as a 'through' route would be undesirable and not in accordance with good road network hierarchy planning principles. The proposed road through the site will have an 'access' function and therefore 'through' or non-local traffic should be encouraged to stay on the sub-arterial / arterial road network.

It is noted that the road connection to Hogan's Road has been provided at Council's request so as to provide connectivity through the site. This connection is not considered to be necessary by the Applicant given the number of lots proposed and the layout of the surrounding road network. Having a single point of access to the site at Urliup Road would not adversely impact upon the surrounding road network and would eliminate any concern that Council may have in relation to the intrusion of non-local traffic through the site. Although a pedestrian / cycle link to Hogan's Road should be provided.

7 PUBLIC TRANSPORT ACCESS

As shown in Figure 8.1, all of the proposed lots will be located less than 200 metres walk from Bilambil Road. Safe and efficient pedestrian access to Bilambil Road will be facilitated via the proposed street network and dedicated pedestrian links. It is concluded, therefore, that the proposed road network is not required to facilitate public bus access.



Figure 8.1: Access to Public Transport

8 PEDESTRIAN PROVISIONS

The proposed road network and open space provisions facilitate safe and efficient travel paths for pedestrians and cyclists. Connectivity is optimized through the avoidance of using cul-de-sac streets.

A dedicated pedestrian path is proposed adjacent to the proposed retail development to provide convenient pedestrian access for residents.

Passive surveillance of off-street pedestrian paths and open space is achieved by providing frontage housing adjacent to those facilities as shown in Figure 9.1.



Figure 9.1 – Passive Surveillance of Pedestrian Paths & Open Space Areas

9 SUMMARY OF CONCLUSIONS & RECOMMENDATIONS

- As shown in Figure 2.1, the subject site has frontage to Hogans Road, Bilambil Road and Urliup Road. The proposed plan of development includes a total of 53 lots including 49 detached dwelling allotments. It is intended that a child care centre be provided on Lot 53 in the north east corner of the site, however consent is not sought for this at this time.
- Access to the development is proposed to occur via a new intersection with Urliup Road and another with Hogans Road. Direct access to the retail facility is proposed off Bilambil Road. It is recommended that a Type BA right turning treatment be provided at each of these access locations in accordance with Austroads design standards. Some vegetation clearing will be required in order to achieve satisfactory levels of sight distance at each intersection point with Urliup Road and Hogans Road.
- Application of trip generation rates contained in the RTA *Guide to Traffic Generating Developments* indicate that the proposed development will not have any adverse impact upon the performance of the surrounding road network. With respect to impacts on Kennedy Drive, the Tweed Shire Council has confirmed that Major Project Application No. 08-0034 has been allocated capacity within the remaining Kennedy Drive capacity and therefore the project is consistent with Council's resolution.
- The proposed internal road network complies with all relevant requirements with respect to layout and geometry. The road network layout provides a "calm" traffic environment by minimizing straight street sections and well spaced intersections.
- The proposed road network and open space provisions facilitate safe and efficient travel paths for pedestrians and cyclists. Connectivity is optimized through avoiding the use of cul-de-sac streets. Passive surveillance of off-street pedestrian paths and open space areas is achieved by frontage housing adjacent to those facilities. The proposed road reserve width of 14.5 metres complies with Council requirements for Access Roads that carry up to 1,000 vehicles per day. It is estimated that the proposed roads will carry no more than 300 vehicles per day.
- All of the proposed lots will be located within 200 metres walk of Bilambil Road. Safe and efficient pedestrian access to Bilambil Road will be facilitated via the proposed street network and dedicated pedestrian paths. It is concluded, therefore, that the proposed road network is not required to facilitate public bus access.

Appendix A

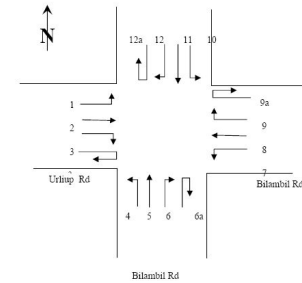
Traffic Surveys – Peak Period Intersection Counts



Traffic Survey

Date: Friday 6th June 2008
Address: Bilambil Rd / Uriup Rd, Bilambil
Name: Carly White
Intersection Type: 4 - way intersection
Job no: 08219

TIME	MOVEMENT																TOTAL
	1	2	3	3a	4	5	6	6a	7	8	9	9a	10	11	12	12a	
7:00 - 7:15	0	1	0	0	0	0	9	0	5	0	2	0	0	3	0	0	20
7:15 - 7:30	0	1	0	0	0	1	10	0	13	1	5	0	9	0	0	0	40
7:30 - 7:45	0	3	1	0	0	3	10	0	17	0	2	0	9	2	1	0	48
7:45 - 8:00	1	1	2	0	1	5	20	0	21	0	7	6	7	2	0	0	73
8:00 - 8:15	0	3	0	0	2	2	18	0	19	0	7	8	10	6	0	0	75
8:15 - 8:30	1	0	1	0	0	3	24	0	23	1	6	10	5	8	0	0	82
8:30 - 8:45	0	3	1	0	2	0	21	0	19	1	13	9	6	1	1	0	77
8:45 - 9:00	0	1	0	0	0	5	23	0	27	2	20	10	6	2	0	0	96
9:00 - 9:15	0	2	1	0	3	2	24	0	9	2	6	10	6	4	0	0	69
9:15 - 9:30	0	1	1	0	0	3	9	0	12	1	2	3	1	1	0	0	34
9:30 - 9:45	0	1	0	0	0	2	14	0	13	1	5	0	7	3	1	0	47
9:45 - 10:00	0	0	0	0	0	1	9	0	7	0	1	0	6	3	1	0	28
10:00 - 10:15	2	1	0	0	0	2	7	0	7	2	5	4	1	4	0	0	35
10:15 - 10:30	1	1	1	0	1	0	13	0	7	2	1	0	2	4	0	0	33
TIME	MOVEMENT																TOTAL
	2	1	3	3a	5	4	6	6a	8	7	9	9a	12	10	11	12a	
2:30 - 2:45	0	3	3	0	0	8	14	0	27	3	6	8	6	4	0	0	82
2:45 - 3:00	0	1	1	0	1	3	28	0	24	0	6	17	7	5	0	0	93
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3:45 - 4:00	0	1	2	0	0	4	29	0	17	2	11	1	1	1	0	0	69
4:00 - 4:15	0	1	1	0	1	3	22	0	21	3	7	0	8	4	1	0	72
4:15 - 4:30	2	0	0	0	0	0	21	0	17	4	6	0	4	7	0	0	61
4:30 - 4:45	1	1	2	0	1	0	27	0	19	1	4	1	5	3	0	0	65
4:45 - 5:00	0	2	0	0	0	1	12	0	15	2	5	1	3	2	0	0	43
5:00 - 5:15	0	3	0	0	0	0	29	0	27	1	2	0	2	3	0	0	67
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5:30 - 5:45	0	1	0	0	0	0	20	0	13	1	2	1	1	0	0	0	39
5:45 - 6:00	0	0	0	0	2	1	22	0	18	3	1	2	0	0	1	0	50



TIME	MOVEMENT																TOTAL
	1	2	3	3a	4	5	6	6a	7	8	9	9a	10	11	12	12a	
7:00 - 8:00	1	6	3	0	1	9	49	0	56	1	16	6	25	7	1	0	181
7:15 - 8:15	1	8	3	0	3	11	58	0	70	1	21	14	35	10	1	0	236
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8:30 - 9:30	0	7	3	0	5	10	77	0	67	6	41	32	19	8	1	0	276
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9:15 - 10:15	2	3	1	0	0	8	39	0	39	4	13	7	15	11	2	0	144
9:30 - 10:30	3	3	1	0	1	5	43	0	34	5	12	4	16	14	2	0	143
TIME	MOVEMENT																TOTAL
	1	2	3	3a	4	5	6	6a	7	8	9	9a	10	11	12	12a	
2:30 - 3:30	2	7	7	0	2	12	87	0	93	7	21	31	24	16	0	0	309
2:45 - 3:45	2	7	4	0	2	4	92	0	75	6	24	25	23	13	0	0	277
3:00 - 4:00	2	7	5	0	1	5	93	0	68	8	29	9	17	9	0	0	253
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3:30 - 4:30	2	5	3	0	1	7	91	0	64	11	33	3	18	13	1	0	252
3:45 - 4:45	3	3	5	0	2	7	99	0	74	10	28	2	18	15	1	0	267
4:00 - 5:00	3	4	3	0	2	4	82	0	72	10	22	2	20	16	1	0	241
4:15 - 5:15	3	6	2	0	1	1	89	0	78	8	17	2	14	15	0	0	236
4:30 - 5:30	1	6	2	0	2	2	93	0	78	4	15	2	10	9	0	0	224
4:45 - 5:45	0	6	0	0	1	2	86	0	72	4	13	2	6	6	0	0	198
5:00 - 6:00	0	4	0	0	3	2	96	0	75	5	9	3	3	4	1	0	205

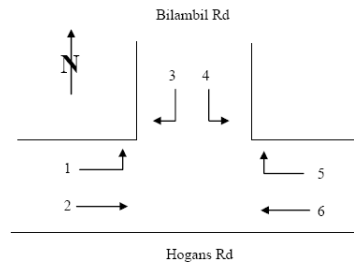


Traffic Survey

Date: Thursday 5th June 2008
Address: Bilambil Rd / Hogans Rd, Bilambil
Name: Carly White
Intersection Type: T - Junction
Job no: 08219



TIME (AM)	MOVEMENT						TOTAL
	1	2	3	4	5	6	
7:00 - 7:15	0	1	2	10	5	0	18
7:15 - 7:30	4	0	3	12	7	0	26
7:30 - 7:45	8	1	0	23	6	0	38
7:45 - 8:00	1	2	3	18	19	0	43
8:00 - 8:15	1	1	1	28	12	0	43
8:15 - 8:30	10	3	3	24	17	0	57
8:30 - 8:45	5	0	5	16	24	0	50
8:45 - 9:00	5	0	2	19	22	1	49
9:00 - 9:15	4	0	0	9	17	2	32
9:15 - 9:30	2	0	3	10	9	1	25
9:30 - 9:45	1	0	1	8	9	0	19
9:45 - 10:00	1	1	5	12	12	0	31
10:00 - 10:15	3	0	0	9	10	0	22
10:15 - 10:30	1	1	2	10	8	0	22
TIME (PM)	MOVEMENT						TOTAL
	1	2	3	4	5	6	
2:30 - 2:45	0	0	2	8	13	0	23
2:45 - 3:00	4	0	2	34	14	0	54
3:00 - 3:15	5	3	3	27	22	0	60
3:15 - 3:30	2	0	4	19	15	0	40
3:30 - 3:45	6	0	1	8	17	1	33
3:45 - 4:00	0	0	6	17	25	2	50
4:00 - 4:15	2	2	4	16	28	2	54
4:15 - 4:30	3	0	8	24	19	2	56
4:30 - 4:45	0	0	1	12	19	2	34
4:45 - 5:00	1	1	7	17	16	0	42
5:00 - 5:15	5	0	3	11	20	1	40
5:15 - 5:30	2	0	3	10	17	0	32
5:30 - 5:45	1	0	2	13	16	0	32
5:45 - 6:00	1	1	2	10	8	0	22



1 HOUR SUMMARY

TIME (AM)	MOVEMENT						TOTAL
	1	2	3	4	5	6	
7:00 - 8:00	13	4	8	63	37	0	125
7:15 - 8:15	14	4	7	81	44	0	150
7:30 - 8:30	20	7	7	93	54	0	181
7:45 - 8:45	17	6	12	86	72	0	193
8:00 - 9:00	21	4	11	87	75	1	199
8:15 - 9:15	24	3	10	68	80	3	188
8:30 - 9:30	16	0	10	54	72	4	156
8:45 - 9:45	12	0	6	46	57	4	125
9:00 - 10:00	8	1	9	39	47	3	107
9:15 - 10:15	7	1	9	39	40	1	97
9:30 - 10:30	6	2	8	39	39	0	94
TIME (PM)	MOVEMENT						TOTAL
	1	2	3	4	5	6	
2:30 - 3:30	11	3	11	88	64	0	177
2:45 - 3:45	17	3	10	88	68	1	187
3:00 - 4:00	13	3	14	71	79	3	183
3:15 - 4:15	10	2	15	60	85	5	177
3:30 - 4:30	11	2	19	65	89	7	193
3:45 - 4:45	5	2	19	69	91	8	194
4:00 - 5:00	6	3	20	69	82	6	186
4:15 - 5:15	9	1	19	64	74	5	172
4:30 - 5:30	8	1	14	50	72	3	148
4:45 - 5:45	9	1	15	51	69	1	146
5:00 - 6:00	9	1	10	44	61	1	126

Appendix B

Traffic Surveys – Bilambil Road Tube Counts

Weekly Vehicle Counts

WeeklyVehicle-166

Site: 08219.0SN
Description: Bilambil Rd, Bilambil (Between Uriup Rd and Hogans Rd)
Filter time: 0:00 Monday, 9 June 2008 => 0:00 Monday, 16 June 2008
Scheme: Vehicle classification (ARX)
Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12) Dir(N) Sp(10,160) Headway(>0)

	Mon 09 Jun	Tue 10 Jun	Wed 11 Jun	Thu 12 Jun	Fri 13 Jun	Sat 14 Jun	Sun 15 Jun	Averages 1 - 5	1 - 7
Hour									
0000-0100	3	1	0	0	1	1	7	1.0	1.9
0100-0200	1	0	0	2	0	2	4	0.6	1.3
0200-0300	1	0	1	0	0	1	2	0.4	0.7
0300-0400	2	0	0	1	0	7	2	0.6	1.7
0400-0500	1	3	3	1	1	4	1	1.8	2.0
0500-0600	2	21	22	20	20	11	4	17.0	14.3
0600-0700	10	30	38	28	29	14	11	27.0	22.9
0700-0800	10	44	56	58	49	16	27	43.4	37.1
0800-0900	24	91<	90<	80<	92<	51	47	75.4<	67.9<
0900-1000	38	55	63	56	60	71	47	54.4	55.7
1000-1100	61	43	45	54	46	120<	51<	49.8	60.0
1100-1200	66<	44	45	46	36	92	47	47.4	53.7
1200-1300	72<	50	43	43	74	93<	74<	56.4	64.1
1300-1400	52	49	51	40	47	80	50	47.8	52.7
1400-1500	64	64	59	47	69	73	54	60.6	61.4
1500-1600	56	95	88<	100	92	57	63	86.2	78.7
1600-1700	46	96	82	114<	117<	73	69	91.0<	85.3<
1700-1800	56	109<	78	95	94	71	64	86.4	81.0
1800-1900	20	69	33	90	58	57	25	54.0	50.3
1900-2000	13	47	31	60	34	66	13	37.0	37.7
2000-2100	11	51	13	19	51	33	15	29.0	27.6
2100-2200	5	11	17	31	20	22	9	16.8	16.4
2200-2300	2	5	23	18	20	11	3	13.6	11.7
2300-2400	2	1	7	2	10	2	1	4.4	3.6
Totals									
0700-1900	565	809	733	823	834	854	618	752.8	748.0
0600-2200	604	948	832	961	968	989	666	862.6	852.6
0600-0000	608	954	862	981	998	1002	670	880.6	867.9
0000-0000	618	979	888	1005	1020	1028	690	902.0	889.7
AM Peak	1100 66	0800 91	0800 90	0800 80	0800 92	1000 120	1000 51		
PM Peak	1200 72	1700 109	1500 88	1600 114	1600 117	1200 93	1200 74		

* - No data.

NORTHBOUND DATA

Weekly Vehicle Counts

WeeklyVehicle-167

Site: 08219.0SN
Description: Bilambil Rd, Bilambil (Between Uriup Rd and Hogans Rd)
Filter time: 0:00 Monday, 9 June 2008 => 0:00 Monday, 16 June 2008
Scheme: Vehicle classification (ARX)
Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12) Dir(S) Sp(10,160) Headway(>0)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
	09 Jun	10 Jun	11 Jun	12 Jun	13 Jun	14 Jun	15 Jun	1 - 5	1 - 7
Hour									
0000-0100	5	0	1	4	0	10	5	2.0	3.6
0100-0200	2	2	3	2	0	6	4	1.8	2.7
0200-0300	2	0	1	3	2	3	2	1.6	1.9
0300-0400	2	2	1	2	3	1	3	2.0	2.0
0400-0500	3	3	3	3	3	5	2	3.0	3.1
0500-0600	3	5	11	9	8	5	3	7.2	6.3
0600-0700	5	30	29	33	30	18	16	25.4	23.0
0700-0800	9	62	73	62	65	30	13	54.2	44.9
0800-0900	38	102<	102<	88<	92<	86	28	84.4<	76.6<
0900-1000	44	57	65	58	53	111<	76<	55.4	66.3
1000-1100	53	42	43	51	52	86	52	48.2	54.1
1100-1200	69<	41	50	38	62	69	72	52.0	57.3
1200-1300	59	50	49	52	45	94	83<	51.0	61.7
1300-1400	51	53	59	51	56	64	50	54.0	54.9
1400-1500	44	75	74	74	63	79	53	66.0	66.0
1500-1600	60<	80	79<	94	109	87	64	84.4	81.9
1600-1700	46	149<	76	131<	82	121<	49	96.8<	93.4<
1700-1800	46	98	76	107	111<	84	55	87.6	82.4
1800-1900	22	76	52	97	86	43	21	66.6	56.7
1900-2000	9	28	30	41	29	28	13	27.4	25.4
2000-2100	15	18	12	14	23	17	12	16.4	15.9
2100-2200	17	12	9	8	20	25	13	13.2	14.9
2200-2300	5	9	20	9	16	18	9	11.8	12.3
2300-2400	1	2	11	9	8	14	3	6.2	6.9
Totals									
0700-1900	541	885	798	903	876	954	616	800.6	796.1
0600-2200	587	973	878	999	978	1042	670	883.0	875.3
0600-0000	593	984	909	1017	1002	1074	682	901.0	894.4
0000-0000	610	996	929	1040	1018	1104	701	918.6	914.0
AM Peak	1100 69	0800 102	0800 102	0800 88	0800 92	0900 111	0900 76		
PM Peak	1500 60	1600 149	1500 79	1600 131	1700 111	1600 121	1200 83		

* - No data.

SOUTHBOUND DATA

Weekly Vehicle Counts

WeeklyVehicle-165

Site: 08219.0SN
Description: Bilambil Rd, Bilambil (Between Uriup Rd and Hogans Rd)
Filter time: 0:00 Monday, 9 June 2008 => 0:00 Monday, 16 June 2008
Scheme: Vehicle classification (ARX)
Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12) Dir(NS) Sp(10,160) Headway(>0)

	Mon 09 Jun	Tue 10 Jun	Wed 11 Jun	Thu 12 Jun	Fri 13 Jun	Sat 14 Jun	Sun 15 Jun	Averages 1 - 5	1 - 7
Hour									
0000-0100	8	1	1	4	1	11	12	3.0	5.4
0100-0200	3	2	3	4	0	8	8	2.4	4.0
0200-0300	3	0	2	3	2	4	4	2.0	2.6
0300-0400	4	2	1	3	3	8	5	2.6	3.7
0400-0500	4	6	6	4	4	9	3	4.8	5.1
0500-0600	5	26	33	29	28	16	7	24.2	20.6
0600-0700	15	60	67	61	59	32	27	52.4	45.9
0700-0800	19	106	129	120	114	46	40	97.6	82.0
0800-0900	62	193<	192<	168<	184<	137	75	159.8<	144.4<
0900-1000	82	112	128	114	113	182	123<	109.8	122.0
1000-1100	114	85	88	105	98	206<	103	98.0	114.1
1100-1200	135<	85	95	84	98	161	119	99.4	111.0
1200-1300	131<	100	92	95	119	187	157<	107.4	125.9
1300-1400	103	102	110	91	103	144	100	101.8	107.6
1400-1500	108	139	133	121	132	152	107	126.6	127.4
1500-1600	116	175	167<	194	201	144	127	170.6	160.6
1600-1700	92	245<	158	245<	199	194<	118	187.8<	178.7<
1700-1800	102	207	154	202	205<	155	119	174.0	163.4
1800-1900	42	145	85	187	144	100	46	120.6	107.0
1900-2000	22	75	61	101	63	94	26	64.4	63.1
2000-2100	26	69	25	33	74	50	27	45.4	43.4
2100-2200	22	23	26	39	40	47	22	30.0	31.3
2200-2300	7	14	43	27	36	29	12	25.4	24.0
2300-2400	3	3	18	11	18	16	4	10.6	10.4
Totals									
0700-1900	1106	1694	1531	1726	1710	1808	1234	1553.4	1544.1
0600-2200	1191	1921	1710	1960	1946	2031	1336	1745.6	1727.9
0600-0000	1201	1938	1771	1998	2000	2076	1352	1781.6	1762.3
0000-0000	1228	1975	1817	2045	2038	2132	1391	1820.6	1803.7
AM Peak	1100 135	0800 193	0800 192	0800 168	0800 184	1000 206	0900 123		
PM Peak	1200 131	1600 245	1500 167	1600 245	1700 205	1600 194	1200 157		

* - No data.

TOTAL VOLUMES