CHATSWOOD GOLF CLUB

PROPOSED GOLF CLUB REDVELOPEMENT & SEPP (SENIORS LIVING) RESIDENTIAL DEVELOPMENT

128 Beaconsfield Road, Chatswood

TRAFFIC AND PARKING IMPACT ASSESSMENT

29 June 2017

PROJECT NO. 1705

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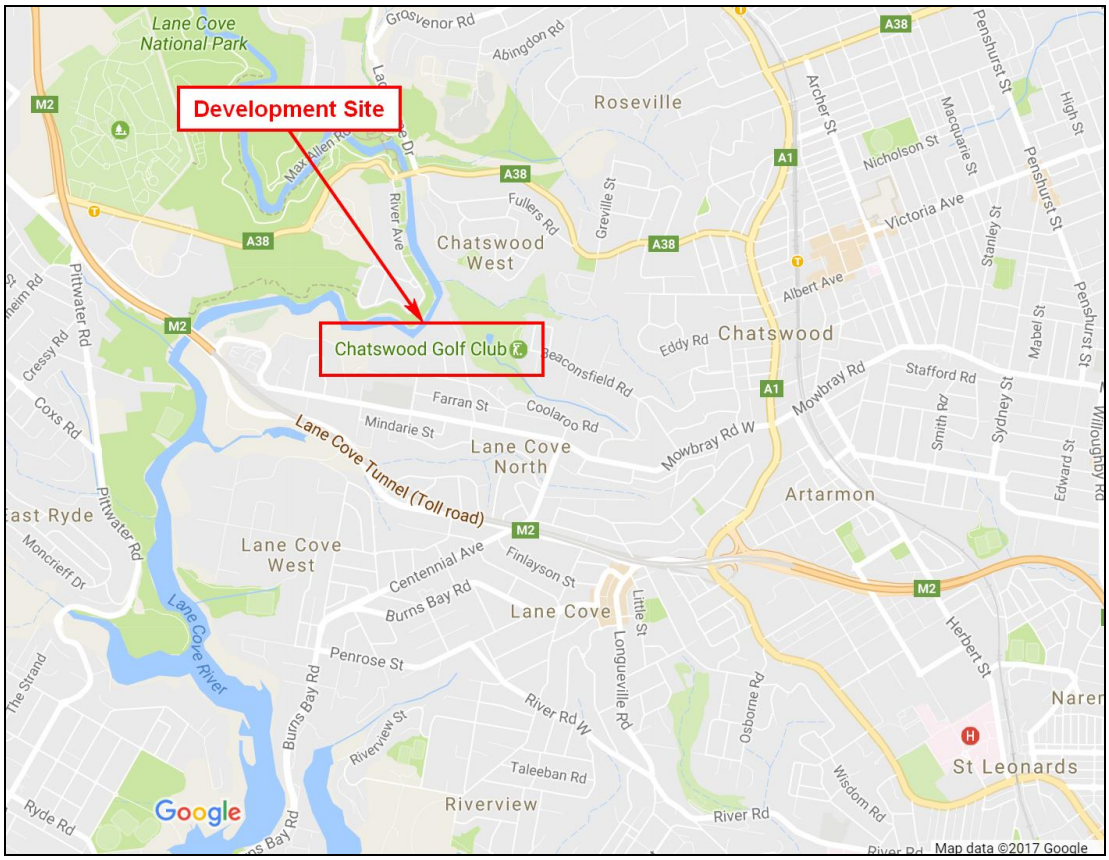
1.0 INTRODUCTION AND SITE LOCATION

This report has been prepared under instruction from Watermark Chatswood Pty Ltd to accompany an application for a Site Compatibility Certificate for redevelopment of the Chatswood Golf Club including construction of a SEPP (Seniors Living) residential development at 128 Beaconsfield Road, Chatswood (Figure 1).

DEVELOPMENT SITE LOCATION

Figure 1



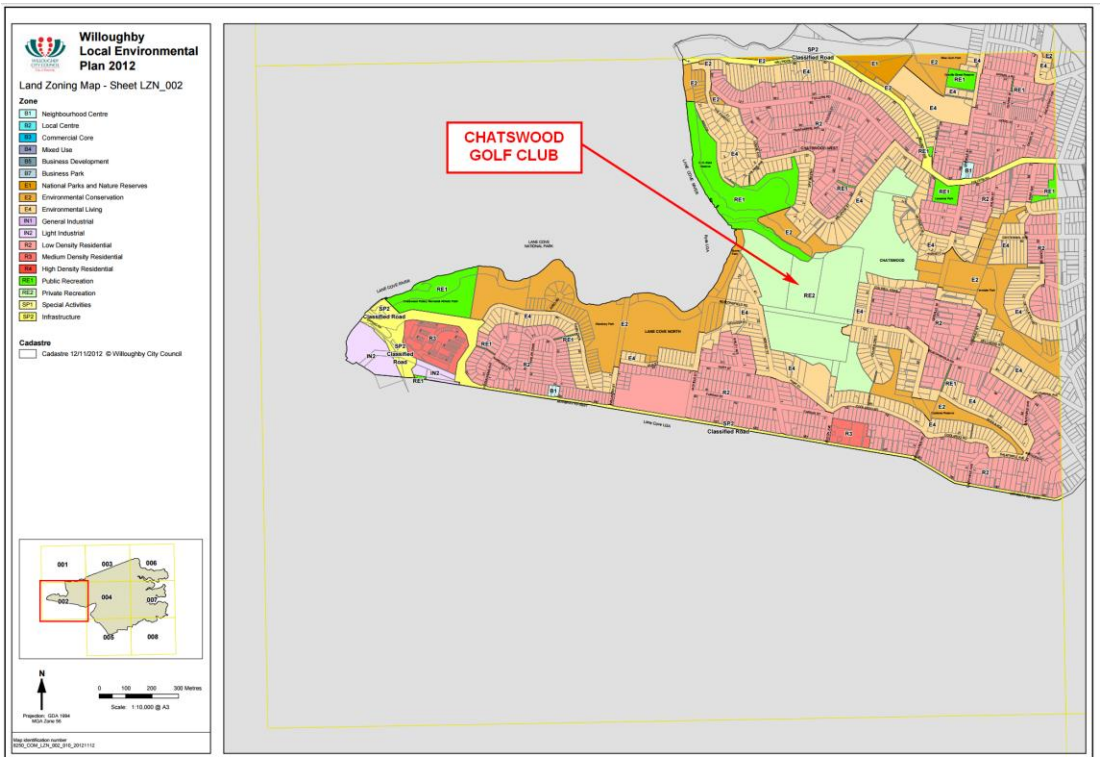
The format of this report has been structured to provide an assessment against relevant heads of consideration and standards including Council's *'Willoughby Development Control Plan (in force 21 August 2006)'*, *'SEPP (Housing for Seniors or People with a Disability) 2004'*, Australian Standards *'AS/NZS 2890.1:2004'*, *'AS/NZS 2890.6:2009'*, *'AS 2890.2-2002'* and the Roads and Maritime Services *'Guide to Traffic Generating Developments Version 2.2'*. The assessment is made in respect to the traffic and parking implications of the proposed development, particularly in regard to:-

- Adequacy and suitability of the off-street parking provisions
- Arrangements for vehicular access
- Traffic generation and impact

2.0 DESCRIPTION OF EXISTING AND PROPOSED DEVELOPMENT

The development site has a legal description of Part Lot 1 in DP 752067, Part Lot 1 in DP 651667, Part Lot 1 in DP 1124646, Part Lot 22 in DP 626634 known as Chatswood Golf Club, 128 Beaconsfield Road, Chatswood. The land is zoned RE 2 Private Recreation as shown on an extract from Councils zoning map (Figure 2).

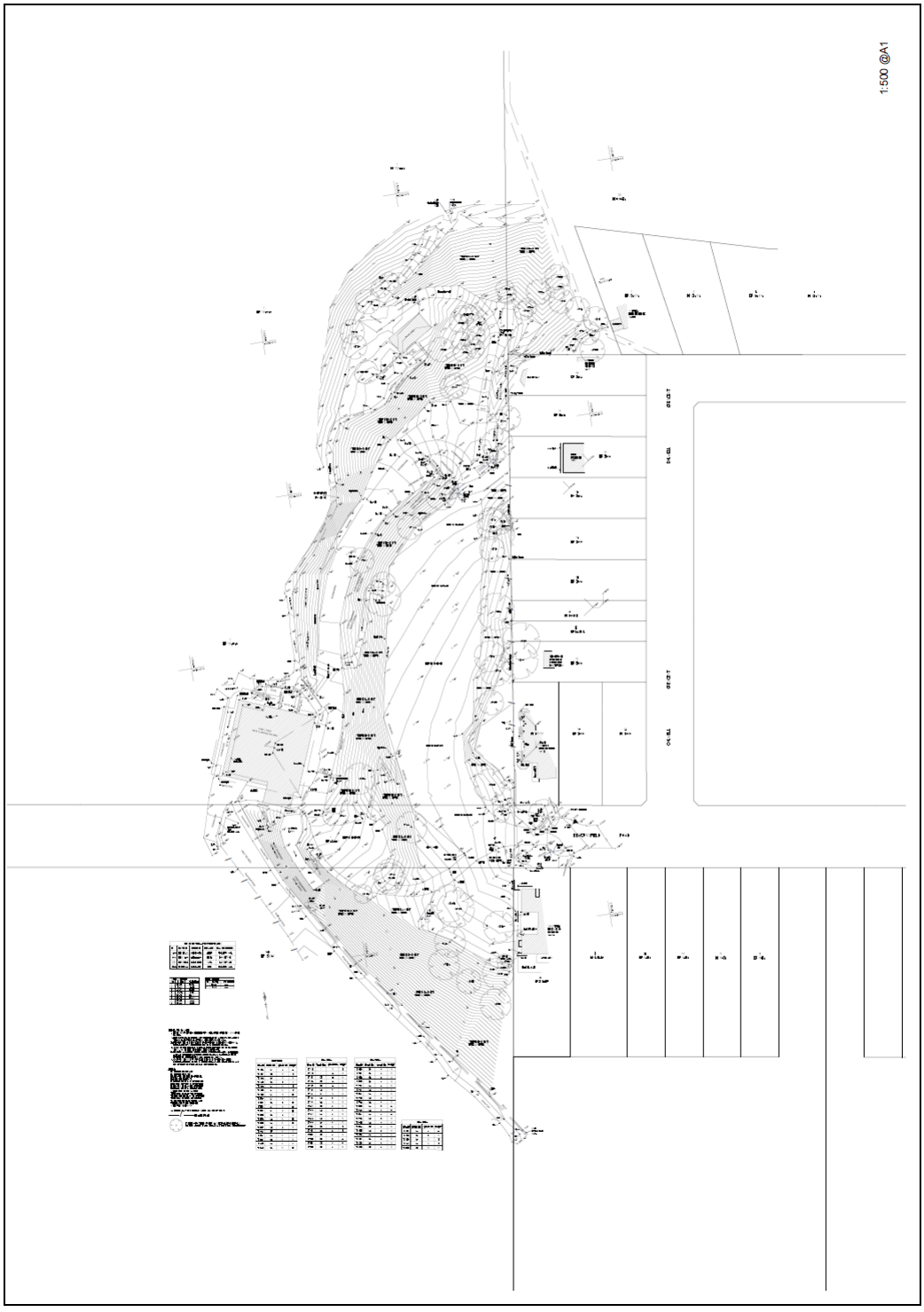
ZONING MAP
Figure 2



Current improvements on the site comprise an 18 hole golf course, some 1,139m² GFA of club house containing a pro-shop, lounge/dining/bar areas with ancillary facilities/storage and informal on-site parking for approximately 120 cars with vehicle access via Beaconsfield Road.

A partial site survey is reproduced in Figure 3 overleaf.

SITE SURVEY
Figure 3



The development schemes proposes the following works:-

- Demolition of the existing golf club buildings which comprises some 1,139m² GFA
- Construction two (2) x 5 storey buildings to accommodate 106 'Seniors Living' residential apartments above 2 levels of basement car parking for 150 vehicles
- Construction of a new 4 storey club house building above 2 levels of basement car parking for 145 cars. The club house will comprise a restaurant, function room, pro shop, golf preparation area, pool, gymnasium, cinema, meeting rooms and other ancillary facilities/storage for shared use between the residents, club members and visitors
- Undertake modifications to the existing maintenance facility for use as a temporary club house and provide a temporary car parking area on part of the 12th fairway for use during construction which is anticipated to take some 18 months. Vehicle access to these temporary facilities will be from Mooney Street via an existing access driveway and vehicle ramp (to be upgraded).
- On completion of construction activity the temporary clubhouse will be converted back to a maintenance facility, the temporary car parking area removed and reinstated into the 12th fairway
- Upgrade works to the golf course

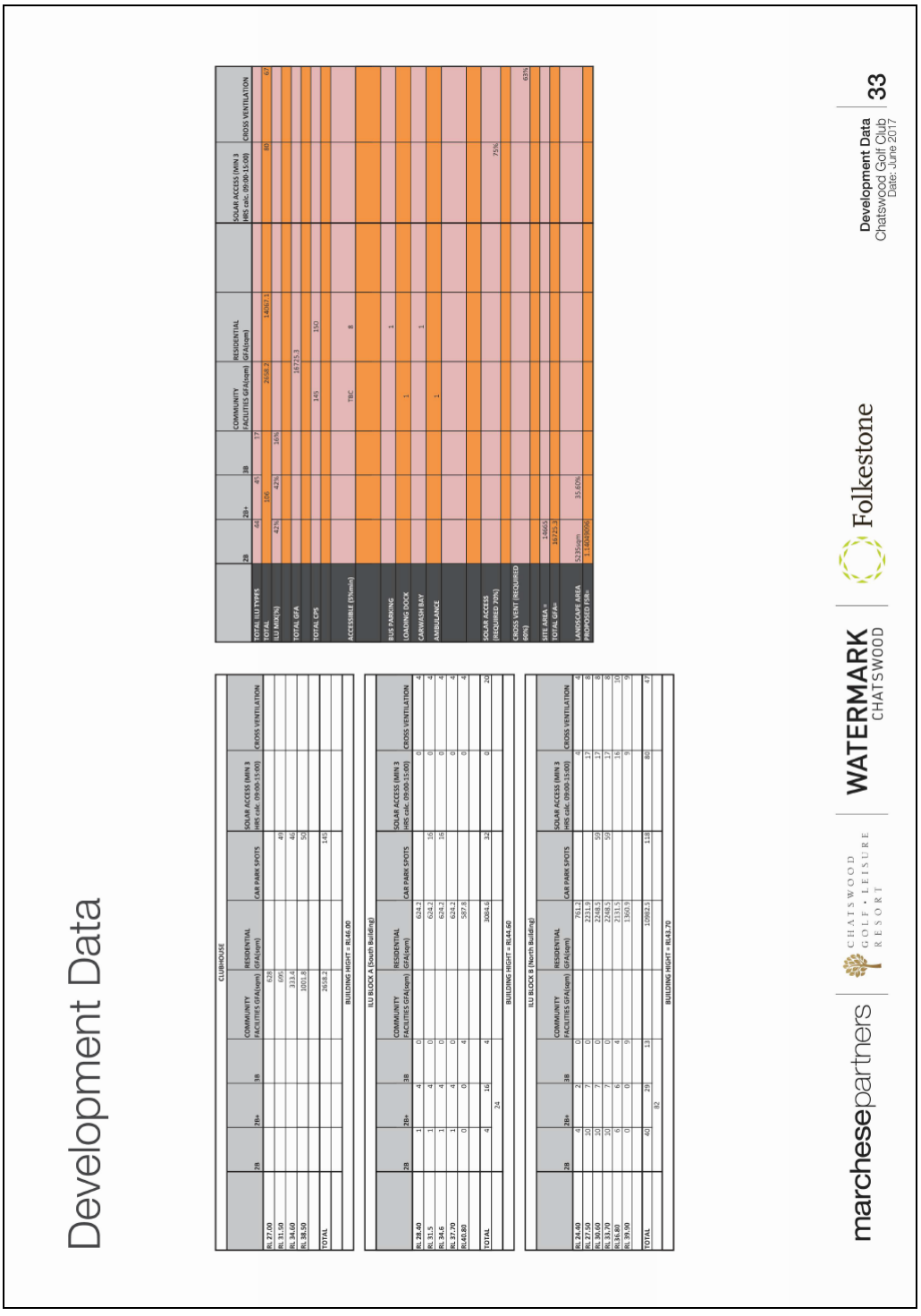
Development data for the proposed scheme is summarised in Table 2.1 overleaf with more detailed information on the proposal contained in the documents accompanying the application.

Surrounding development is primarily low density residential comprising a mix of one and two level detached residential dwellings. To the south of the site at 6 Hart Street is the Lane Cove Gardens Retirement Village comprising a number of multi-storey buildings with self-care housing.

The proposal is shown on plans prepared by Marchese Partners, Architects, submitted with the application and which have reproduced, in part, in Figures 5-10 on subsequent pages.

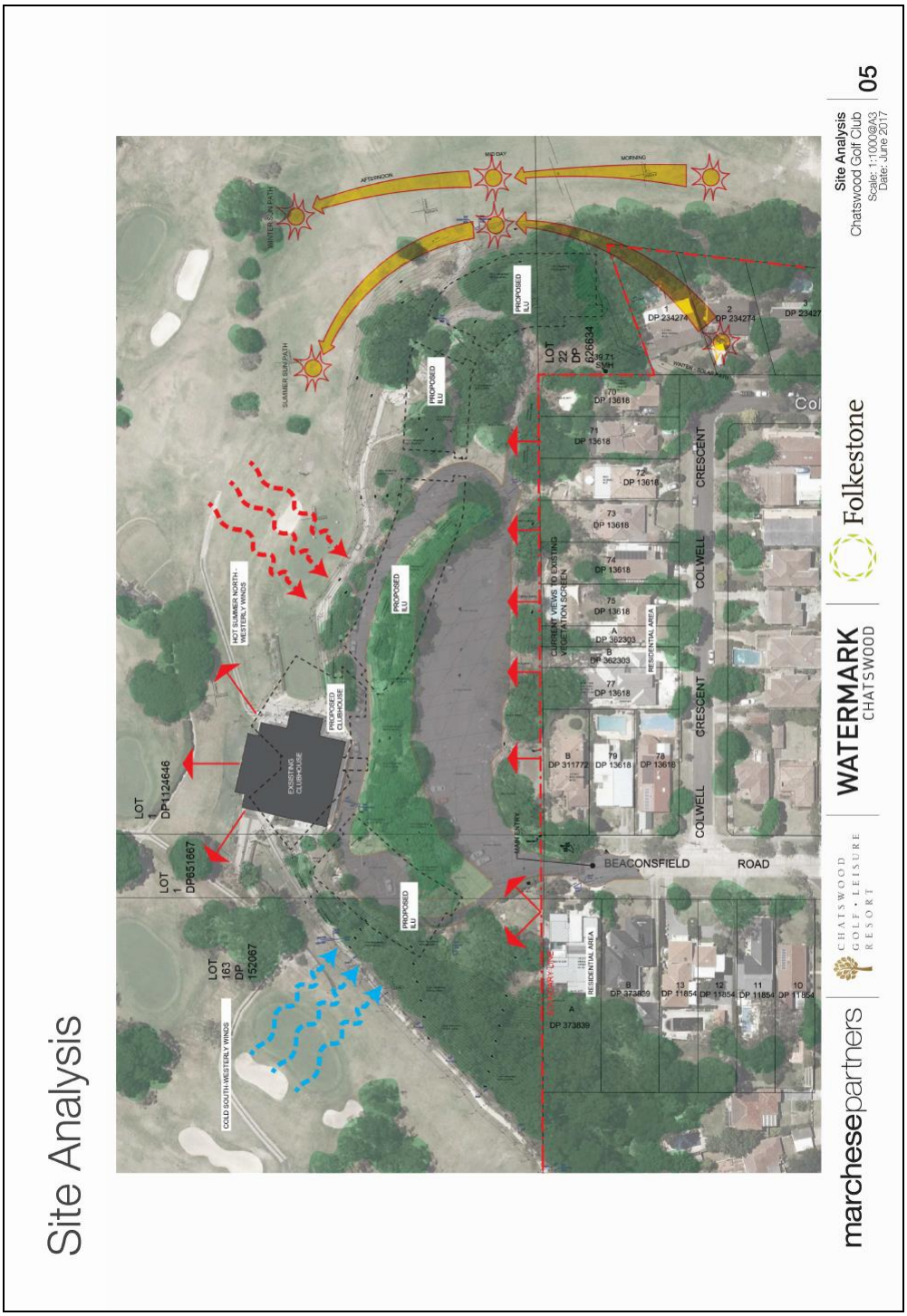
Table 2.1

DEVELOPMENT DATA



SITE ANALYSIS

Figure 4



LEVEL 4 PLAN

Figure 5

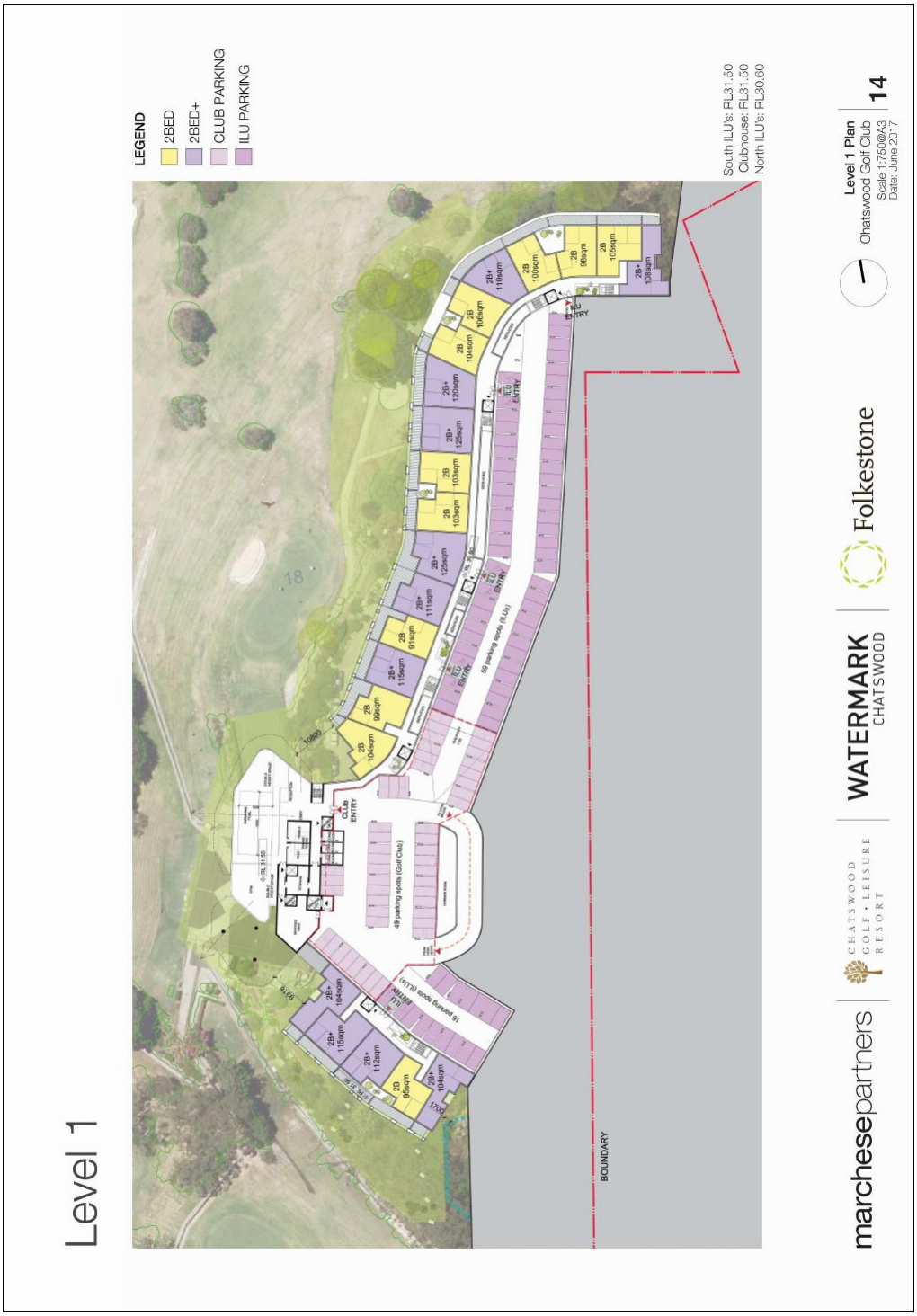
LEVEL 3 PLAN

Figure 6

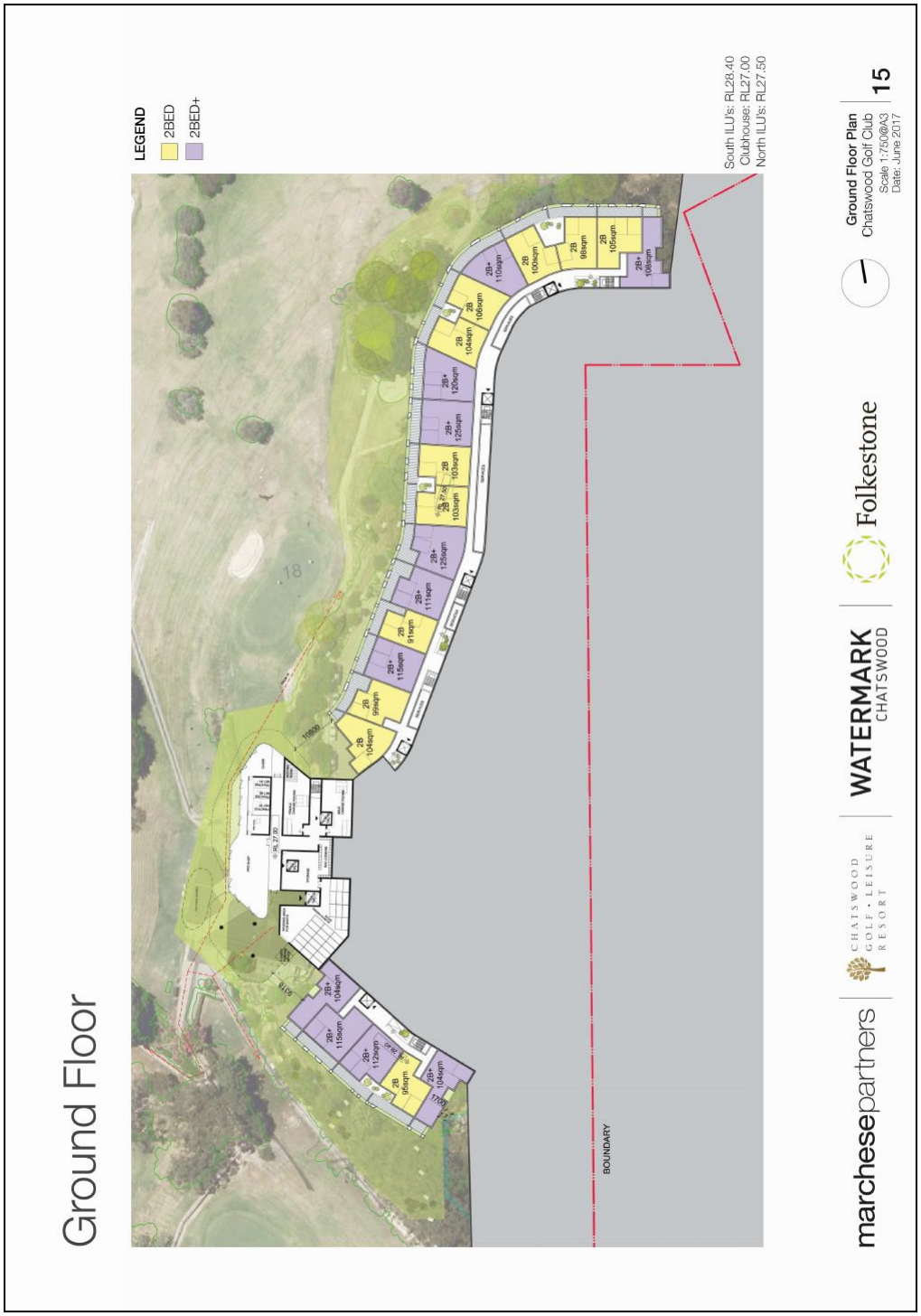
LEVEL 2 PLAN

Figure 7

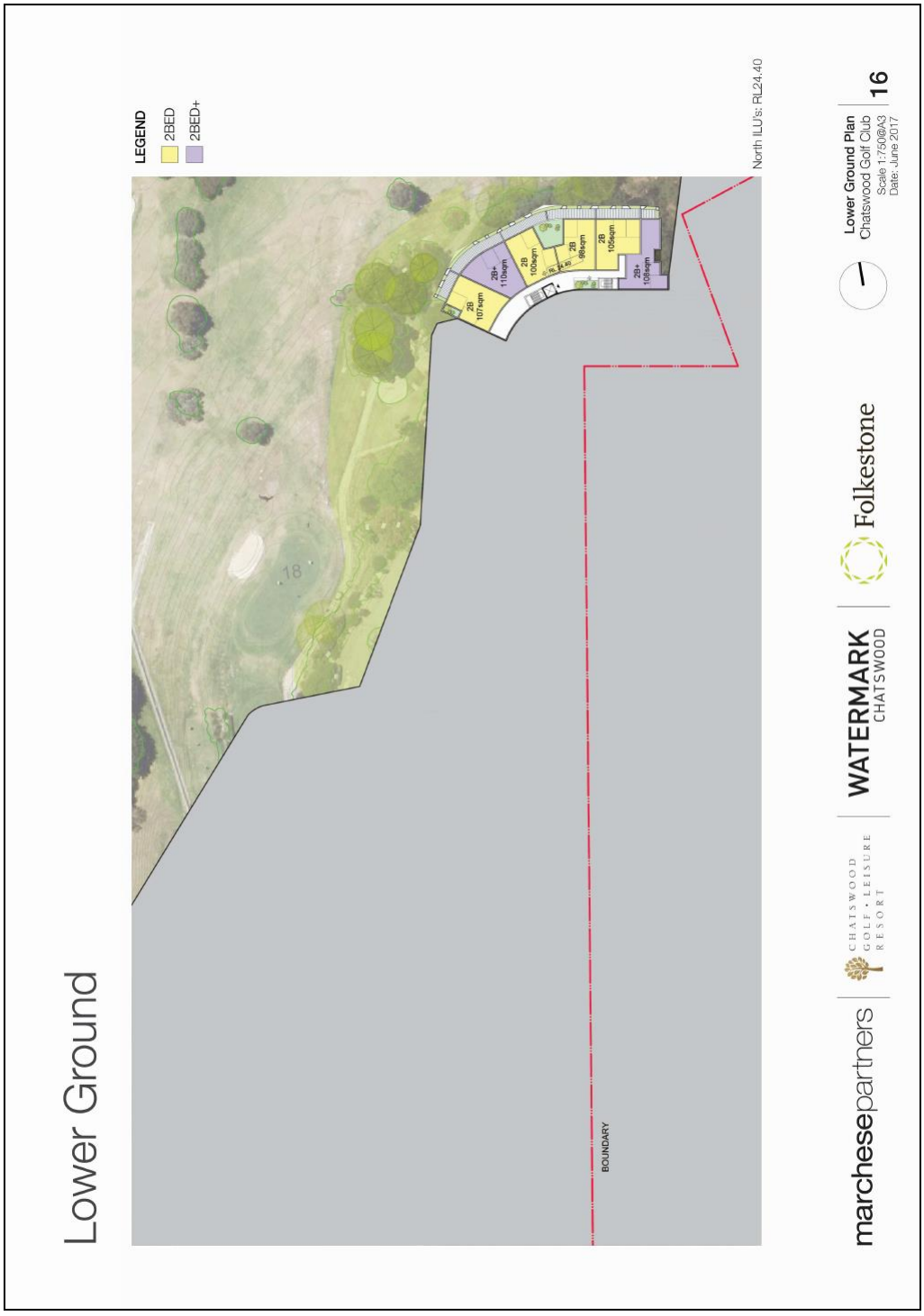
LEVEL 1PLAN
Figure 8



GROUND FLOOR PLAN
Figure 9



LOWER GROUND FLOOR PLAN
Figure 10



3.0 ROAD AND TRAFFIC CONDITIONS

The road network predominately serving the site comprises:-

Mowbray Road West - a classified 'Regional' road performing a 'Sub-Arterial' road function providing access between Pacific Highway to the east and Centennial Avenue to the west with a carriageway constructed on a curving alignment generally carrying one lane of traffic in each direction on a modest downgrade east to west; centrelines markings to RMS standards; a 50km/h speed limit and street lighting to 'Sub-Arterial' road standard.

Beaconsfield Road – a Council 'Local' road running northerly from Mowbray Road West terminating at the entrance to Chatswood Golf Club. The road has the following features and traffic facilities relative to this study:-

- carriageway 7.2m wide between kerbs providing for one lane of moving traffic in each direction with unrestricted kerbside parking; 3 Tonne Load Limit; a 50km/h speed limit and street lighting to local road standard
- single lane roundabout at the intersection with Dalrymple Avenue
- a number of single lane speed humps strategically placed along its length to control vehicle speeds
- traffic control signals at its intersection with Mowbray Road West/Ralston Avenue incorporating right turn bays in each approach of Mowbray Road West for the right turns into Beaconsfield Road and Ralston Avenue; "Left Turn Only Buses Excepted" turn restriction for traffic exiting Beaconsfield Road; left and right turns only for traffic existing Ralston Avenue (no access to Beaconsfield Road); controlled pedestrian crossings across all legs of the intersection (including marked footcrossing on the left turn slip lane from Ralston Avenue
- Bus Stop on northern side east of Colwell Crescent; "No Parking 6.30am – 7.00pm Mon. – Sat." restriction signposted on the southern side opposite Colwell Crescent to assist bus manoeuvring

Mooney Street – also a Council 'Local' road running northerly from Mowbray Road West and provides vehicle access to the maintenance facilities for the golf course via a ramp adjacent to the 12th fairway. The road has the following features and traffic facilities relative to this study:-

- carriageway 7.2m wide between kerbs providing for one lane of moving traffic in each direction with unrestricted kerbside parking; 3 Tonne Load Limit; a 50km/h speed limit and street lighting to local road standard
- "STOP" sign control at Hart Street
- "GIVE WAY" sign control at Mowbray Road West

A 24 hour 7 day traffic flow survey was undertaken on the vehicle access driveway to the Chatswood Golf Club at the Beaconsfield Road from Friday 28 April 2017 to Thursday 4 May 2017. The results revealed that highest two-way peak traffic flows at the golf club access were recorded on the Thursday & Friday between 7.00am – 8.00am for the am period and the Thursday between 2.00pm – 3.00pm for the pm period. The results are summarised in Table 3.1 below with the Traffic Count Summary Report reproduced in Appendix 'A':

Table 3.1

GOLF CLUB PEAK TRAFFIC FLOWS

Day/Date	Direction	AM Peak Flows (7.00am-8.00am)	PM Peak Flows (2.00pm-3.00pm)
Thursday 4 April 2017	Entry (Westbound)	33	11
	Exit (Eastbound)	0	31
	Total	**33**	**42**

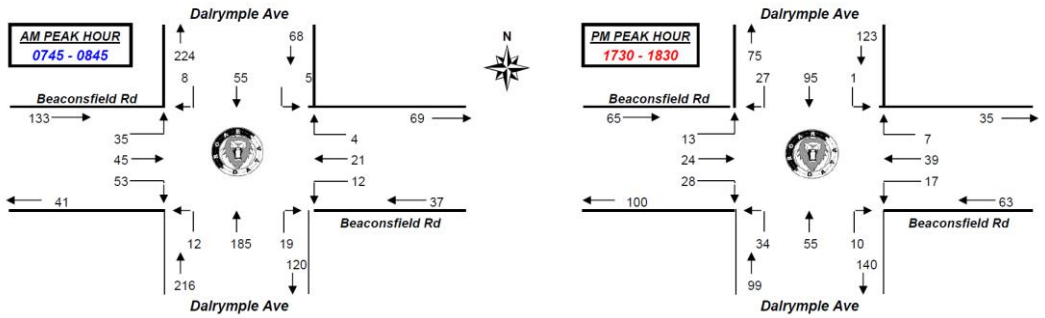
Traffic counts were also undertaken on Tuesday 7 March 2017 at the following intersections to give an indication of peak hour traffic flows on the roads serving the site:-

- Beaconsfield Road/Dalrymple Avenue - roundabout
- Beaconsfield Road/Mowbray Road West/Ralston Street - traffic signals
- Mooney Street/Hart Street – "STOP' sign
- Mooney Street/Mowbray Road West – 'T' intersection

The results are summarised in Figures 12-15 below and overleaf with the full surveys results reproduced in Appendix 'B':

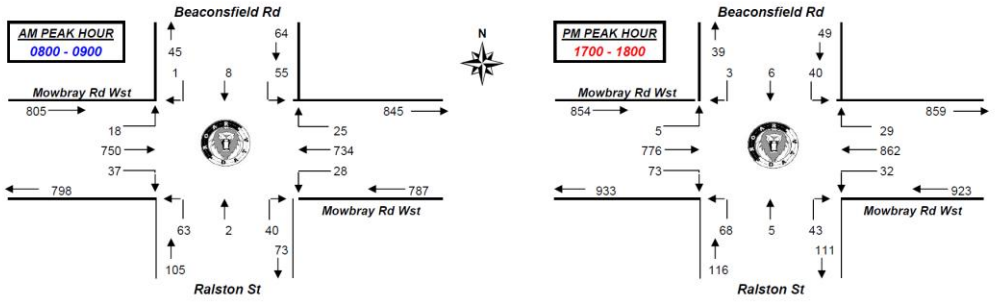
BEACONSFIELD ROAD/DALRYMPLE AVENUE
WEEKDAY PEAK HOUR TRAFFIC FLOWS

Figure 11



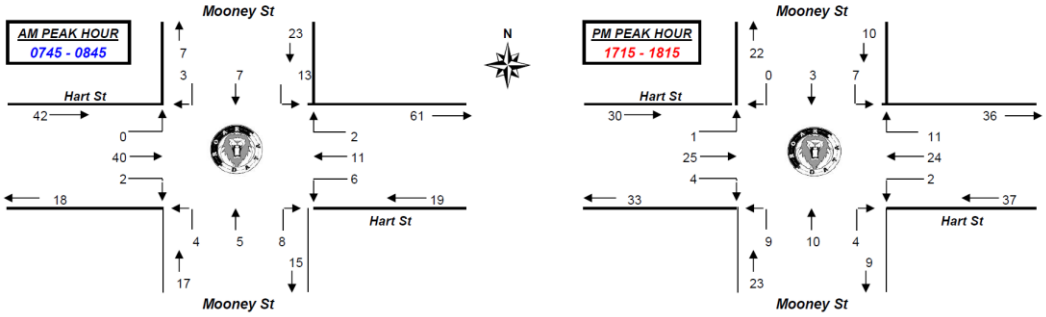
MOWBRAY ROAD WEST/BEACONSFIELD ROAD/RALSTON AVENUE
WEEKDAY PEAK HOUR TRAFFIC FLOWS

Figure 12



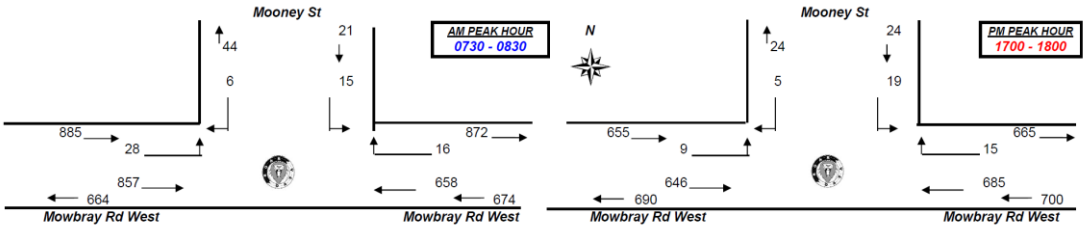
MOONEY STREET/HART STREET
WEEKDAY PEAK HOUR TRAFFIC FLOWS

Figure 13



MOWBRAY ROAD WEST/MOONEY STREET
WEEKDAY PEAK HOUR TRAFFIC FLOWS

Figure 14



The Roads and Maritime Services has established guidelines for the functional classification of roads according to the role they perform and the volume of traffic they should appropriately carry, as follows:-

Arterial Road	*typically a State Road which carry more than 15,000 vehicles per day (over 1,500 veh/h) and perform the role of major inter-regional links*
Sub-Arterial Road	*typically Regional Road defined as secondary inter-regional links which carry volumes between 5,000 and 20,000 vehicles per day (500 veh/h to 2,000 veh/h)*
Collector Road	*provides links between local areas and regional roads and typically carries between 2,000 and 10,000 vehicles per day (200 - 1,000 veh/h)*
Local Road	*provide access to individual allotments and carry low volumes, desirably less than 2,000 vehicles per day (200 veh/h) with a recommended maximum of 300 veh/h proceeding at a speed of about 40 km/h.*

On this basis it is concluded that Mowbray Road West is carrying traffic flows consistent with its functional classification as a Sub-Arterial Road while local road traffic flows are consistent with their local road classification.

The performance of each intersection has been analysed using the 'SIDRA' intersection modelling program to determine their current operating conditions. The results are summarised in Table 3.2 below:-

Table 3.2

RESULTS OF 'SIDRA' ANALYSIS
EXISTING INTERSECTION PERFORMANCE

Intersection	Level of Service (LOS)		Degree of Saturation (DS)		Average Vehicle Delay (AVD)	
	AM	PM	AM	PM	AM	PM
Beaconsfield Rd/Dalrymple Av	A	A	0.167	0.106	5.0	5.0
Beaconsfield R/Mowbray Rd W	C	C	0.84	0.87	20.8	23.4
Mooney Street/Hart Street	N/A	N/A	0.023	0.021	3.7	3.7
Mooney Street/Mowbray Road West	N/A	N/A	0.474	0.385	0.8	0.5

The results reveal all intersections are operating at the satisfactory Level of Service (LOS) 'C' or better in each of the peak periods with acceptable average vehicle delays and spare capacity. It should be noted that intersection LOS is not applicable for two-way sign control due to the zero delays associated with the major road

The relevant modelling outputs are contained in Appendix 'C' and the criteria for interpreting the results reproduced on the following page.

Criteria for Interpreting Results of 'SIDRA' Analysis

1. *Level of Service (LOS)*

LOS	Traffic Signals and Roundabouts	Give Way and Stop Signs
`A'	*Good*	*Good*
`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 (i.e. inner city conditions) and on some roads (i.e. 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*
F	*> 70*	*Unsatisfactory*	*Unsatisfactory*

3. *Degree of Saturation (DS)*

The DS is another measure of the operational performance of individual intersections. For intersections controlled by ***traffic signals***[1] *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.*

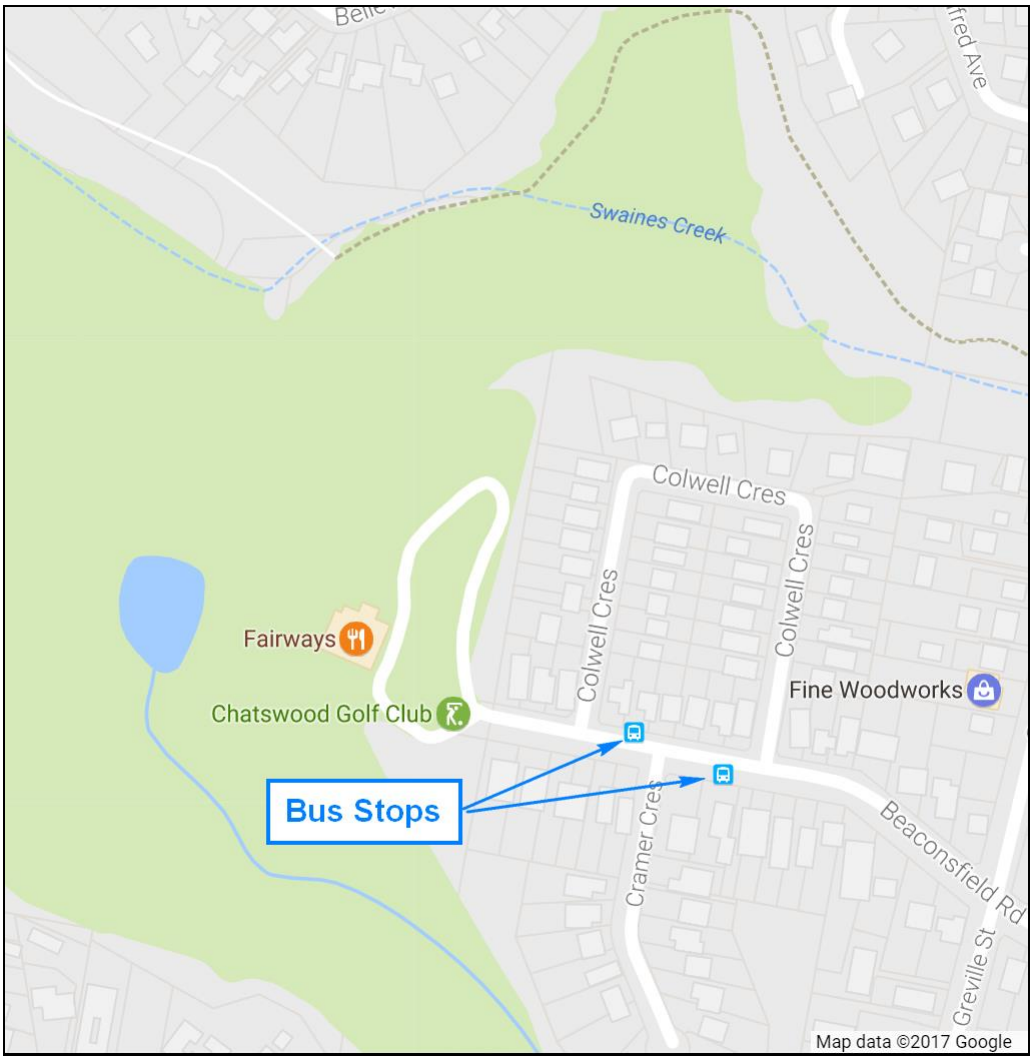
[1] *the values of DS for intersections under traffic signal control are only valid for cycle length of 120 secs*

4.0 AVAILABILITY OF PUBLIC TRANSPORT

Sydney Buses provides a bus service in the area operating a Monday to Saturday (no Sunday service) 'loop service' to Chatswood Railway Station utilising its Route 255 service between Colwell Crescent and Chatswood Station

Bus stops for this service are positioned on the northern side of Beaconsfield Road east of Colwell Crescent and on the southern side of Beaconsfield Road east of Cramer Crescent as shown in Figure 12 below. Extracts from the Sydney Buses route map and timetable are reproduced in Appendix 'D'.

BUS STOP LOCATIONS
Figure 15



It is concluded the site is well placed to encourage the use of public transport and reduce the demand for car travel. To enhance pedestrian access to this bus service it is proposed to provide a concrete footpath along the northern side of Beaconsfield linking the proposed development to the bus stop and provide a passenger waiting shelter at the bus stop to Councils requirements.

5.0 VEHICLE ACCESS ARRANGEMENTS

5.1 Mooney Street Temporary Vehicle Access

As noted previously it is proposed to undertake alterations to the existing maintenance building to provide a temporary clubhouse with part of the 12th fairway being converted into a temporary car park. Vehicle access is proposed from an existing driveway and ramp off Mooney Street which will upgraded to meet current standards. This temporary arrangement is anticipated to operate for 18 months during construction of the golf club and seniors living apartments.

Existing use of the Mooney Street vehicle access for the maintenance building is restricted to 5 to 6 maintenance staff (green keepers etc.) working between the hours of 6.00am – 4.00pm.

The intersections of Mooney Street with Hart Street and Mowbray West were remodelled using 'SIDRA' with the additional traffic flows of 33 am pvt and 42 pm pvt to assess the impact during the temporary access arrangements. The results, which indicate satisfactory operations with insignificant increases (shown +) in Degrees of Saturation (DS) and Average Vehicle Delay (AVD), are summarised in the Table 5.1.1 below with the relevant modelling outputs reproduced in Appendix 'E':

Table 5.1.1

RESULTS OF 'SIDRA' ANALYSIS

MOONEY STREET TEMPORARY ACCESS INTERSECTION PERFORMANCES

Intersection	Level of Service (LOS)		Degree of Saturation (DS)		Average Vehicle Delay (AVD)	
	AM	PM	AM	PM	AM	PM
Mooney St/Hart St	N/A	N/A	0.039 (+0.016)	0.034 (+0.013)	4.6 (+0.9)	4.9 (+1.2)
Mooney St/Mowbray Rd West	N/A	N/A	0.482 (+0.008)	0.389 (+0.004)	1.1 (+0.3)	0.7 (+0.2)

Similarly, increases in am and pm hour traffic flows of 33 vehicles and 42 vehicles respectively will have no impact on existing traffic conditions in Mooney Street or the surrounding road network during the temporary access arrangements.

5.2 Post Development Vehicle Access

On completion of the development vehicle access will revert back to the existing access driveway on Beaconsfield Road which will need to be reconstructed to comply with the design requirements for a Category 3 access driveway as specified in Table 3.2 in '*AS/NZS 2890.1:2004*' (i.e. serving a predominately Class 2 parking facility for some 295 cars with vehicle access to a local road).

The access driveway will also be suitable for use by the largest vehicle required to access the site i.e. the design 12.5m long Heavy Rigid Vehicle (HRV).

It is concluded that the proposed vehicle access arrangements will be satisfactory for the development.

6.0 PARKING PROVISION, LAYOUT AND SERVICING

6.1 Seniors Living Car Parking

The '*SEPP (Housing for Seniors or People with a Disability) 2004*' has the following requirement in respect to provision of car parking for self-contained dwellings:-

Residents: - 0.5 spaces per bedroom

Application of the above rate indicates a parking requirement for the seniors living component of the development based on 229 bedrooms (i.e. 89 x 2 bedrooms = 178 + 17 x 3 = 51 bedrooms) as follows:-

229 bedrooms @ 0.5 spaces/bedroom = 114.5 (say 115) spaces

The proposal will provide a total of 150 car parking spaces thereby exceeding the SEPPS requirements. Visitor/disabled/adaptable parking will be allocated in accordance with relevant requirements.

Parking for the Seniors Living dwellings will be accommodated in a secure basement car park with the layout designed in accordance with the requirements in '*AS/NZS 2890.1:2004*' and '*AS/NZS 2890.6:2009*'.

6.2 Golf Club Car Parking

The proposal provides parking for 145 cars in a basement car park which exceeds the existing (informal) quantum of parking provided at the club and is considered will be adequate for the new club facility. The car park will be designed in accordance with the requirements in '*AS/NZS 2890.1:2004*' and '*AS/NZS 2890.6:2009*' representing a significant improvement over the existing general 'ad-hoc' parking arrangements.

6.3 Servicing

The largest vehicle to access the site for servicing purposes is anticipated to be the design 12.5m long Heavy Rigid Vehicle (HRV) which is consistent with the existing servicing requirements for the golf club. All internal roadways/turning facilities will be designed in accordance with the relevant requirements in '*AS 2890.2-2002*' for the design HRV.

7.0 TRAFFIC GENERATION AND IMPACTS

7.1 Seniors Living Dwellings

The Roads and Maritime Services '*Guide to Traffic Generating Developments V2.2'* provides data on traffic generation rates for various forms of land use. Seniors housing developments are typically low traffic generators with the RMS advising that for housing for seniors[2] each dwelling unit generates 0.4 weekday peak vehicle trips (pvt) noting that the AM site peak hour does not generally coincide with the road network peak hour.

Application of the above rates indicates the following traffic generation for the residential component:-

106 dwellings @ 0.4 weekday pvt/dwelling = 42.4 (say 43) pvt

Accordingly, the seniors living component of the development scheme is assessed as having the potential to generate some 43 peak vehicle trips (noting that these trips do not generally coincide with the network am peak hour).

7.2 Golf Club

As noted previously, the surveys undertaken at the club access driveway revealed peak two way traffic flows of 33 vehicles in the am period and 42 vehicles in the pm period. While the new golf club incorporates facilities for the seniors living residential component (i.e. swimming pool, cinema, arts & crafts etc.) the traffic generating characteristics of the club are not expected to change significantly from existing circumstances. Notwithstanding, to assess a 'worst case' scenario and therefore provide a robust assessment, an allowance has been made for an increase in peak traffic flows based on the increased floor area of the club and facilities which equates to approximately 1,579m².

An assessment of the traffic generating characteristics of the golf club based on the existing floor area of 1,139m² indicates the following vehicle trips during the am and pm peak periods:-

2.9 am pvt per 100m²

3.7 pm pvt per 100m²

It should be noted that in respect to am peak period all vehicle trips involved entry movements with no recorded exit movements indicating all trips would have involved members playing golf with very few, if any, utilising the internal club facilities (i.e. dining area, lounge, bars etc.). This would not be expected to change with the new golf club.

Notwithstanding, a robust assessment of the potential increase in traffic generation of the new club facility based on the 1,579m² of increased floor area would indicate the following:-

[2] Roads and Maritime Services *'Guide to Traffic Generating Developments V2.2 – TDT 2013/04 Updated traffic surveys- Housing for seniors'*

1,579m² @ 2.9 am pvt/100m² = 44 am pvt

1,579m² @ 3.7 pm pvt/100m² = 59 pm pvt

7.3 Combined Golf Club/Seniors Living

Although the peak traffic generation of the seniors living component will not generally coincide with the am road network peak hour the peak traffic generation for both components of the development scheme have been assumed to occur concurrently as follows:-

AM Peak Hour:-

Golf Club = 44 am pvt

Seniors Living = 43 am pvt

Total = 87 am pvt

PM Peak Hour:-

Golf Club = 59 pm pvt

Seniors Living = 43 pm pvt

Total = 102 pm pvt

Accordingly, for assessment purposes and based on a 'worst case' scenario the proposed development has been assumed to have the potential to generate an additional 87 am pvt and 102 pm pvt over the existing facility. It should be noted that this represents a very robust assessment as the total floor area includes facilities that would not be used by golf club members i.e. pool, gym, cinema, arts/crafts etc. and therefore be unlikely to generate discreet peak hour vehicle trips.

The intersections of Beaconsfield Road with Dalrymple Avenue and Mowbray Road West/Ralston Avenue have been remodelled with the additional traffic flows. The results reveal that even with a very robust assessment the Beaconsfield Road/Dalrymple Avenue roundabout will continue to operate at Level of Service (LOS) 'A' in both the am & pm peak periods with insignificant increases in Degree of Saturation (DS) and Average Vehicle Delay (AVD).

Similarly, the Mowbray Road West/Beaconsfield Road/Ralston Avenue traffic control signals will continue to operate at the satisfactory Level of Service (LOS) 'C' in both the am and pm peak periods with very small increases in Degree of Saturation (DS) and Average Vehicle Delay (AVD). The results are summarised in table 7.3.1 overleaf with the increases in DS & AVD shown (+). The relevant modelling outputs are reproduced in Appendix 'F':

Table 7.3.1

RESULTS OF 'SIDRA' ANALYSIS POST DEVELOPMENT INTERSECTION PERFORMANCE						
Intersection	**Level of Service (LOS)**		**Degree of Saturation (DS)**		**Average Vehicle Delay (AVD)**	
	AM	PM	AM	PM	AM	PM
Beaconsfield Rd/Dalrymple Av	A	A	0.201 (+0.03)	0.124 (+0.02)	5.3 (+0.3)	5.3 (+0.3)
Beaconsfield R/Mowbray Rd W	C	C	0.861 (+0.02)	0.882 (+0.02)	22.0 (+1.2)	24.5 (+1.1)

8.0 SUMMARY & CONCLUSIONS

1. The proposed development scheme for the Chatswood Golf Club site envisages construction of 106 Seniors Living residential apartments with ancillary facilities over basement parking for 150 cars and construction of a new club house with associated facilities over basement parking for 145 cars with vehicle access via an existing access point on Beaconsfield Avenue.

2. The existing maintenance building off Mooney Street will be modified to accommodate a temporary club house during construction which is anticipated to take approximately 18 months. As part of this arrangement part of the 12th Fairway will be modified to provide a temporary car park for club members and guests with vehicle access from Mooney Street via an existing driveway and ramp.

3. An assessment of the existing operating conditions of relevant intersections in the area reveal they are operating at the satisfactory LOS 'C' or better with acceptable average vehicle delays and spare capacity. Existing traffic flows on the immediate road system are consistent with their functional classifications.

4. An assessment of the impact of the additional traffic in Mooney Street during the temporary club house arrangements reveals there will be no adverse impact on intersection operation nor traffic conditions in the immediate area.

5. A robust assessment of post development traffic conditions along Beaconsfield Road and associated intersections reveal satisfactory operating conditions with no unacceptable impact.

6. The proposed car parking provision exceeds the existing golf club parking on the site and the SEPP's requirements for the seniors living component. All car parking and internal roads will be designed to comply with the relevant requirements in '*AS/NZS 2890.1:2004*', '*AS/NZS 2890.6:2009*' and '*AS 2890.2-2002*'.

7. The site has convenient access to public transport providing residents with access to Chatswood Rail Station and shopping precinct.

8. It is considered that, in respect to traffic impacts, the proposed development scheme site would not have any unacceptable traffic, parking or traffic related environmental implications resulting from the proposal.

Appendix 'A'

Golf Club Vehicle Access

Two Way (Bidirectional) &
Entry (Westbound)/Exit (Eastbound) Traffic Counts

Two Way (Bidirectional)

CfeIT bob.white@cfeit.com (02) 9740 8600

Traffic Count Summary Report

Count Number	4640	Ref : RDTT	Lat/Long : S33 48.094 / E151 09.846	UBD 195 B-12
Street	BEACONSFIELD ROAD, CHATSWOOD WEST : Between CHATSWOOD GOLF CLUB & MOWBRAY ROAD WEST (bidirectional) :			
Location	Entry into Chatswood Golf Course No. 128, on Stop sign at driveway.			*Carriageway*

TOTAL COUNT MATRIX

Start Date	28-APR-17
Start Time	100
Duration	7 DAYS
Interval	1 HOUR

Weekly 50th Percentile Speed	15
Weekly 85th Percentile Speed	19
Five Day AADT	244
Seven Day AADT	254

	MON 1ST	TUE 2ND	WED 3RD	THU 4TH	FRI 28TH	SAT 29TH	SUN 30TH	5 Day Total	5 Day Average	7 Day Total	7 Day Average
Midnight - 1am	0	1	0	0	2	0	0	3	1	3	0
1am - 2am	0	0	0	0	0	0	0	0	0	0	0
2am - 3am	0	0	0	0	0	0	0	0	0	0	0
3am - 4am	0	2	0	0	0	0	0	2	0	2	0
4am - 5am	0	0	0	0	0	0	0	0	0	0	0
5am - 6am	2	1	0	0	0	7	1	3	1	11	2
6am - 7am	7	3	13	7	10	23	12	40	8	75	11
7am - 8am	15	32	20	33	33	22	18	133	27	173	25
8am - 9am	17	12	23	15	20	21	18	87	17	126	18
9am - 10am	13	7	14	10	16	25	13	60	12	98	14
10am - 11am	19	9	19	10	18	19	15	75	15	109	16
11am - Midday	27	18	33	10	8	28	13	96	19	137	20
Midday - 1pm	23	15	32	30	30	18	20	130	26	168	24
1pm - 2pm	13	31	16	26	27	26	29	113	23	168	24
2pm - 3pm	11	29	26	42	18	15	14	126	25	155	22
3pm - 4pm	16	25	16	26	27	20	14	110	22	144	21
4pm - 5pm	9	15	23	17	21	21	26	85	17	132	19
5pm - 6pm	8	27	23	13	16	34	18	87	17	139	20
6pm - 7pm	7	4	13	11	17	34	7	52	10	93	13
7pm - 8pm	1	0	6	0	4	2	3	11	2	16	2
8pm - 9pm	0	0	0	0	0	4	0	0	0	4	1
9pm - 10pm	1	0	0	1	0	11	2	2	0	15	2
10pm - 11pm	1	0	0	0	0	9	0	1	0	10	1
11pm - Midnight	1	1	0	0	0	1	0	2	0	3	0
Total	191	232	277	251	267	340	223	1218	243	1781	254

Data displayed has been compiled from pneumatic traffic count processes and is subject to the documented limitations

Entry Flows (Westbound)

CfeIT bob.white@cfeit.com (02) 9740 8600

Traffic Count Summary Report

Count Number	**4640**	Ref : **RDTT**	**Lat/Long : S33 48.094 / E151 09.846**	**UBD 195 B-12**
Street	**BEACONSFIELD ROAD, CHATSWOOD WEST : From MOWBRAY ROAD WEST to CHATSWOOD GOLF CLUB : WEST BOUND**			
Location	Entry into Chatswood Golf Course No. 128, on Stop sign at driveway.			*Carriageway*

TOTAL COUNT MATRIX

Start Date	28-APR-17
Start Time	100
Duration	7 DAYS
Interval	1 HOUR

Weekly 50th Percentile Speed	15
Weekly 85th Percentile Speed	19
Five Day AADT	127
Seven Day AADT	133

	MON *1ST*	TUE *2ND*	WED *3RD*	THU *4TH*	FRI *28TH*	SAT *29TH*	SUN *30TH*	5 Day Total	5 Day Average	7 Day Total	7 Day Average
Midnight - 1am	0	0	0	0	1	0	0	**1**	**0**	**1**	**0**
1am - 2am	0	0	0	0	0	0	0	**0**	**0**	**0**	**0**
2am - 3am	0	0	0	0	0	0	0	**0**	**0**	**0**	**0**
3am - 4am	0	1	0	0	0	0	0	**1**	**0**	**1**	**0**
4am - 5am	0	0	0	0	0	0	0	**0**	**0**	**0**	**0**
5am - 6am	2	1	0	0	0	7	1	**3**	**1**	**11**	**2**
6am - 7am	5	3	13	7	10	**23**	10	**38**	**8**	**71**	**10**
7am - 8am	14	**31**	19	**33**	**32**	22	**18**	**129**	**26**	**169**	**24**
8am - 9am	**17**	11	22	13	14	20	16	**77**	**15**	**113**	**16**
9am - 10am	11	5	13	7	13	19	10	**49**	**10**	**78**	**11**
10am - 11am	9	6	16	6	9	9	11	**46**	**9**	**66**	**9**
11am - Midday	6	12	**24**	7	4	14	10	**53**	**11**	**77**	**11**
Midday - 1pm	7	10	**13**	**22**	13	3	**12**	**65**	**13**	**80**	**11**
1pm - 2pm	**10**	**15**	0	7	4	8	8	**36**	**7**	**52**	**7**
2pm - 3pm	5	12	6	11	6	6	6	**40**	**8**	**52**	**7**
3pm - 4pm	5	8	4	7	**14**	6	4	**38**	**8**	**48**	**7**
4pm - 5pm	5	6	10	5	11	8	5	**37**	**7**	**50**	**7**
5pm - 6pm	2	3	1	0	6	5	1	**12**	**2**	**18**	**3**
6pm - 7pm	0	0	2	2	0	**26**	1	**4**	**1**	**31**	**4**
7pm - 8pm	1	0	0	0	2	1	0	**3**	**1**	**4**	**1**
8pm - 9pm	0	0	0	0	0	0	0	**0**	**0**	**0**	**0**
9pm - 10pm	1	0	0	1	0	0	1	**2**	**0**	**3**	**0**
10pm - 11pm	0	0	0	0	0	2	0	**0**	**0**	**2**	**0**
11pm - Midnight	1	0	0	0	0	0	0	**1**	**0**	**1**	**0**
Total	**101**	**124**	**143**	**128**	**139**	**179**	**114**	**635**	**127**	**928**	**132**

Page : 1

Data displayed has been compiled from pneumatic traffic count processes and is subject to the documented limitations

Exit Flows (Eastbound)

CfeIT bob.white@cfeit.com (02) 9740 8600

Traffic Count Summary Report

Count Number	4640	Ref : RDTT	Lat/Long : S33 48.094 / E151 09.846	UBD 195 B-12
Street	BEACONSFIELD ROAD, CHATSWOOD WEST : From CHATSWOOD GOLF CLUB to MOWBRAY ROAD WEST : EAST BOUND			
Location	Entry into Chatswood Golf Course No. 128, on Stop sign at driveway.			*Carriageway*

TOTAL COUNT MATRIX

Start Date	28-APR-17
Start Time	100
Duration	7 DAYS
Interval	1 HOUR

Weekly 50th Percentile Speed	14
Weekly 85th Percentile Speed	19
Five Day AADT	117
Seven Day AADT	122

	MON 1ST	TUE 2ND	WED 3RD	THU 4TH	FRI 28TH	SAT 29TH	SUN 30TH	5 Day Total	5 Day Average	7 Day Total	7 Day Average
Midnight - 1am	0	1	0	0	1	0	0	2	0	2	0
1am - 2am	0	0	0	0	0	0	0	0	0	0	0
2am - 3am	0	0	0	0	0	0	0	0	0	0	0
3am - 4am	0	1	0	0	0	0	0	1	0	1	0
4am - 5am	0	0	0	0	0	0	0	0	0	0	0
5am - 6am	0	0	0	0	0	0	0	0	0	0	0
6am - 7am	2	0	0	0	0	0	2	2	0	4	1
7am - 8am	1	1	1	0	1	0	0	4	1	4	1
8am - 9am	0	1	1	2	6	1	2	10	2	13	2
9am - 10am	2	2	1	3	3	6	3	11	2	20	3
10am - 11am	10	3	3	4	9	10	4	29	6	43	6
11am - Midday	21	6	9	3	4	14	3	43	9	60	9
Midday - 1pm	16	5	19	8	17	15	8	65	13	88	13
1pm - 2pm	3	16	16	19	23	18	21	77	15	116	17
2pm - 3pm	6	17	20	31	12	9	8	86	17	103	15
3pm - 4pm	11	17	12	19	13	14	10	72	14	96	14
4pm - 5pm	4	9	13	12	10	13	21	48	10	82	12
5pm - 6pm	6	24	22	13	10	29	17	75	15	121	17
6pm - 7pm	7	4	11	9	17	8	6	48	10	62	9
7pm - 8pm	0	0	6	0	2	1	3	8	2	12	2
8pm - 9pm	0	0	0	0	0	4	0	0	0	4	1
9pm - 10pm	0	0	0		0	11	1	0	0	12	2
10pm - 11pm	1	0	0		0	7	0	1	0	8	1
11pm - Midnight	0	1	0		0	1	0	1	0	2	0
Total	90	108	134	123	128	161	109	583	116	853	121

Page : 1

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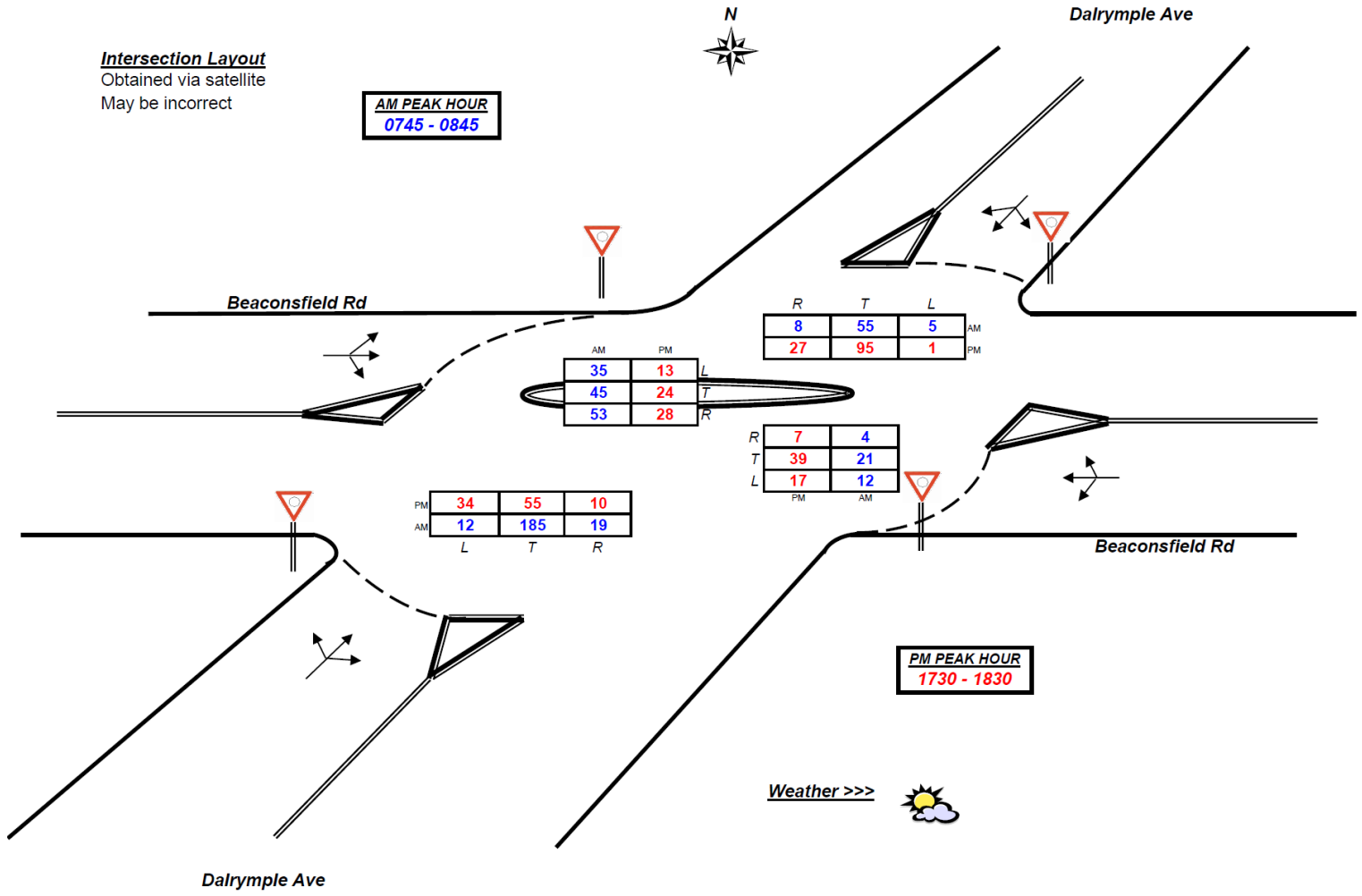
Appendix 'B'

Intersection Traffic Counts

R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Mob.0418-239019

Client : Ray Dowsett Traffic & Transport Planning P/L
Job No/Name : 6379 CHATSWOOD Golf Club Counts
Day/Date : Tuesday 7th March 2017



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Ray Dowsett Traffic & Transport Planning P/L
Job No/Name : 6379 CHATSWOOD Golf Club Counts
Day/Date : Tuesday 7th March 2017

All Vehicles	NORTH			WEST			SOUTH			EAST			
	Dalrymple Ave			*Beaconsfield Rd*			*Dalrymple Ave*			*Beaconsfield Rd*			
Time Per	L	T	R	L	T	R	L	T	R	L	T	R	TOT
0600 - 0615	0	0	0	1	1	1	0	0	0	1	0	0	4
0615 - 0630	0	3	1	2	1	2	0	2	2	1	1	0	15
0630 - 0645	0	2	1	2	3	6	0	2	0	1	2	0	19
0645 - 0700	0	5	2	6	5	5	2	6	0	0	6	0	37
0700 - 0715	1	8	6	2	4	6	0	10	2	4	6	1	50
0715 - 0730	0	13	4	7	8	10	3	24	0	2	3	2	76
0730 - 0745	0	10	5	5	15	12	6	23	4	2	10	1	93
0745 - 0800	0	13	1	9	13	24	3	41	7	6	6	1	124
0800 - 0815	2	16	4	7	10	14	6	43	4	2	6	2	116
0815 - 0830	3	19	1	6	13	7	3	50	3	2	5	0	112
0830 - 0845	0	7	2	13	9	8	0	51	5	2	4	1	102
0845 - 0900	3	21	7	7	8	5	6	39	4	6	4	4	114
0900 - 0915	1	16	3	7	7	7	2	33	4	7	3	1	91
0915 - 0930	3	12	1	1	6	7	6	22	6	4	6	2	76
0930 - 0945	3	10	1	2	6	5	4	15	5	3	5	2	61
0945 - 1000	2	12	2	1	5	5	3	13	4	4	6	1	58
Period End	18	167	41	78	114	124	44	374	50	47	73	18	1148

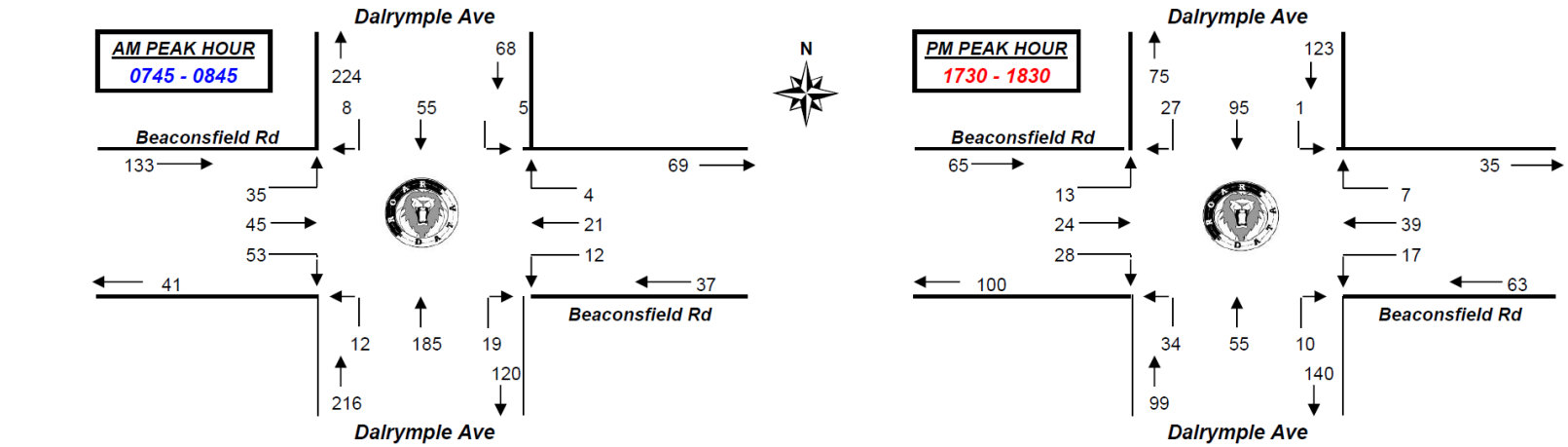
All Vehicles	NORTH			WEST			SOUTH			EAST			
	Dalrymple Ave			*Beaconsfield Rd*			*Dalrymple Ave*			*Beaconsfield Rd*			
Time Per	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1500 - 1515	0	10	4	5	4	5	4	4	0	4	5	1	46
1515 - 1530	2	24	5	2	6	5	2	17	1	3	8	2	77
1530 - 1545	1	13	2	7	12	3	8	6	5	1	13	0	71
1545 - 1600	0	8	3	1	5	3	3	14	1	5	4	0	47
1600 - 1615	0	14	3	1	7	4	9	8	0	6	11	0	63
1615 - 1630	1	15	2	5	4	4	5	10	4	4	8	2	64
1630 - 1645	1	10	7	4	7	3	4	11	0	1	11	1	60
1645 - 1700	1	26	2	1	4	0	7	8	2	1	2	1	55
1700 - 1715	0	21	3	3	4	8	6	7	1	3	10	2	68
1715 - 1730	1	15	3	2	7	4	6	13	1	1	9	1	63
1730 - 1745	0	25	4	1	5	8	11	10	2	3	10	3	82
1745 - 1800	1	25	11	2	7	7	9	17	2	3	9	0	93
1800 - 1815	0	27	7	6	8	4	9	16	4	6	9	1	97
1815 - 1830	0	18	5	4	4	9	5	12	2	5	11	3	78
1830 - 1845	0	16	5	2	4	6	7	10	2	3	8	1	64
1845 - 1900	0	18	5	3	5	4	5	12	2	2	8	2	66
Period End	8	285	71	49	93	77	100	175	29	51	136	20	1094

	NORTH			WEST			SOUTH			EAST			
	Dalrymple Ave			*Beaconsfield Rd*			*Dalrymple Ave*			*Beaconsfield Rd*			
Peak Time	L	T	R	L	T	R	L	T	R	L	T	R	TOT
0600 - 0700	0	10	4	11	10	14	2	10	2	3	9	0	75
0615 - 0715	1	18	10	12	13	19	2	20	4	6	15	1	121
0630 - 0730	1	28	13	17	20	27	5	42	2	7	17	3	182
0645 - 0745	1	36	17	20	32	33	11	63	6	8	25	4	256
0700 - 0800	1	44	16	23	40	52	12	98	13	14	25	5	343
0715 - 0815	2	52	14	28	46	60	18	131	15	12	25	6	409
0730 - 0830	5	58	11	27	51	57	18	157	18	12	27	4	445
0745 - 0845	5	55	8	35	45	53	12	185	19	12	21	4	454
0800 - 0900	8	63	14	33	40	34	15	183	16	12	19	7	444
0815 - 0915	7	63	13	33	37	27	11	173	16	17	16	6	419
0830 - 0930	7	56	13	28	30	27	14	145	19	19	17	8	383
0845 - 0945	10	59	12	17	27	24	18	109	19	20	18	9	342
0900 - 1000	9	50	7	11	24	24	15	83	19	18	20	6	286
PEAK HOUR	5	55	8	35	45	53	12	185	19	12	21	4	454

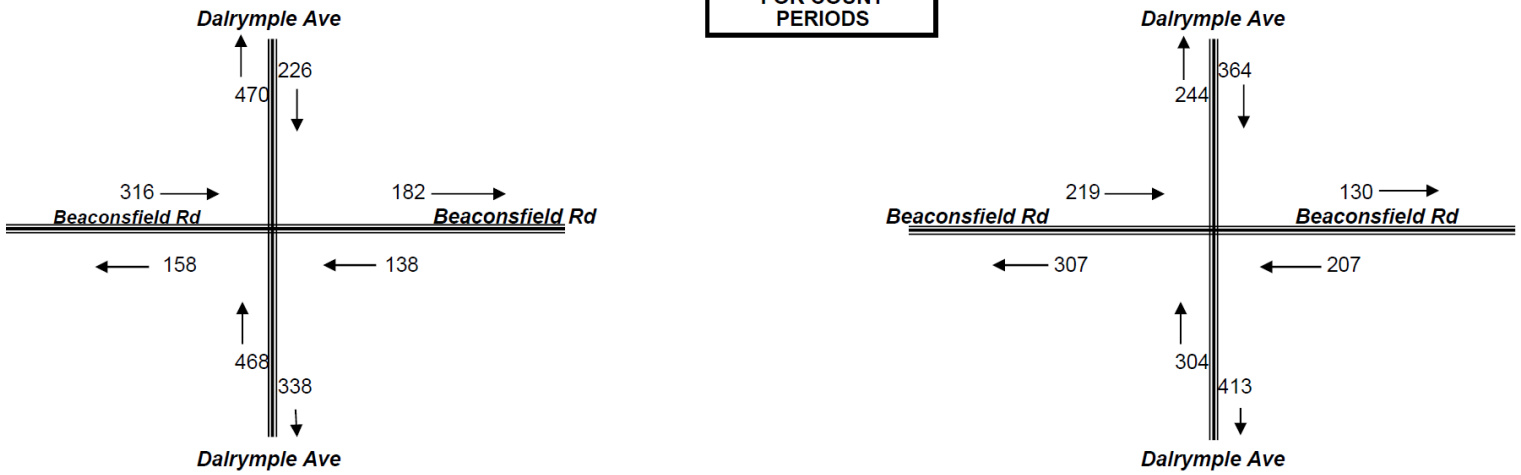
	NORTH			WEST			SOUTH			EAST			
	Dalrymple Ave			*Beaconsfield Rd*			*Dalrymple Ave*			*Beaconsfield Rd*			
Peak Time	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1500 - 1600	3	55	14	15	27	16	17	41	7	13	30	3	241
1515 - 1615	3	59	13	11	30	15	22	45	7	15	36	2	258
1530 - 1630	2	50	10	14	28	14	25	38	10	16	36	2	245
1545 - 1645	2	47	15	11	23	14	21	43	5	16	34	3	234
1600 - 1700	3	65	14	11	22	11	25	37	6	12	32	4	242
1615 - 1715	3	72	14	13	19	15	22	36	7	9	31	6	247
1630 - 1730	3	72	15	10	22	15	23	39	4	6	32	5	246
1645 - 1745	2	87	12	7	20	20	30	38	6	8	31	7	268
1700 - 1800	2	86	21	8	23	27	32	47	6	10	38	6	306
1715 - 1815	2	92	25	11	27	23	35	56	9	13	37	5	335
1730 - 1830	1	95	27	13	24	28	34	55	10	17	39	7	350
1745 - 1845	1	86	28	14	23	26	30	55	10	17	37	5	332
1800 - 1900	0	79	22	15	21	23	26	50	10	16	36	7	305
PEAK HOUR	1	95	27	13	24	28	34	55	10	17	39	7	350

R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Mob.0418-239019

Client : Ray Dowsett Traffic & Transport Planning P/L
Job No/Name : 6379 CHATSWOOD Golf Club Counts
Day/Date : Tuesday 7th March 2017

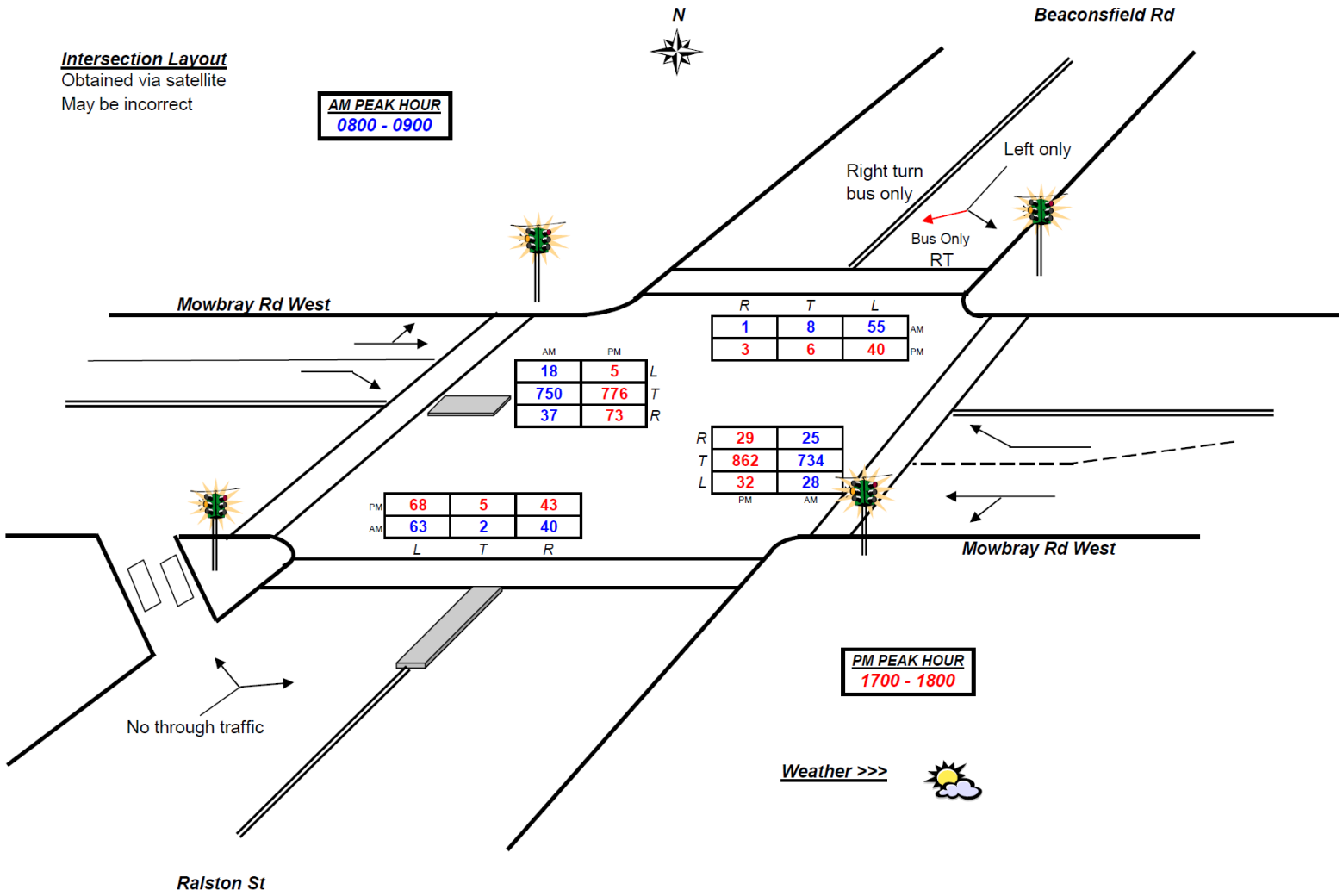


TOTAL VOLUMES FOR COUNT PERIODS



R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Mob.0418-239019

Client : Ray Dowsett Traffic & Transport Planning P/L
Job No/Name : 6379 CHATSWOOD Golf Club Counts
Day/Date : Tuesday 7th March 2017



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Ray Dowsett Traffic & Transport Planning P/L
Job No/Name : 6379 CHATSWOOD Golf Club Counts
Day/Date : Tuesday 7th March 2017

All Vehicles	NORTH			WEST			SOUTH			EAST			
	Beaconsfield Rd			*Mowbray Rd Wst*			*Ralston St*			*Mowbray Rd Wst*			
Time Per	L	T	R	L	T	R	L	T	R	L	T	R	TOT
0600 - 0615	2	1	0	1	122	2	7	0	3	2	55	1	**196**
0615 - 0630	1	1	0	1	135	2	8	0	5	3	59	3	**218**
0630 - 0645	3	0	0	1	203	4	5	0	7	1	84	2	**310**
0645 - 0700	6	1	0	1	238	10	9	0	14	4	98	6	**387**
0700 - 0715	9	2	0	2	248	12	14	1	5	8	92	8	**401**
0715 - 0730	7	3	0	3	257	14	18	0	9	14	179	7	**511**
0730 - 0745	16	0	0	1	185	6	11	2	7	6	136	9	**379**
0745 - 0800	3	1	1	1	181	19	24	2	12	7	171	5	**427**
0800 - 0815	16	2	0	1	197	12	16	1	7	0	163	10	**425**
0815 - 0830	14	3	0	2	185	9	15	0	9	8	194	5	**444**
0830 - 0845	15	0	1	8	181	6	17	0	12	10	185	5	**440**
0845 - 0900	10	3	0	7	187	10	15	1	12	10	192	5	**452**
0900 - 0915	11	0	0	7	197	12	26	0	6	2	157	7	**425**
0915 - 0930	9	1	0	5	178	7	8	0	14	11	161	3	**397**
0930 - 0945	14	1	0	3	167	8	9	0	11	7	158	8	**386**
0945 - 1000	9	1	0	2	158	8	11	0	9	9	140	10	**357**
Period End	**145**	**20**	**2**	**46**	**3019**	**141**	**213**	**7**	**142**	**102**	**2224**	**94**	**6155**

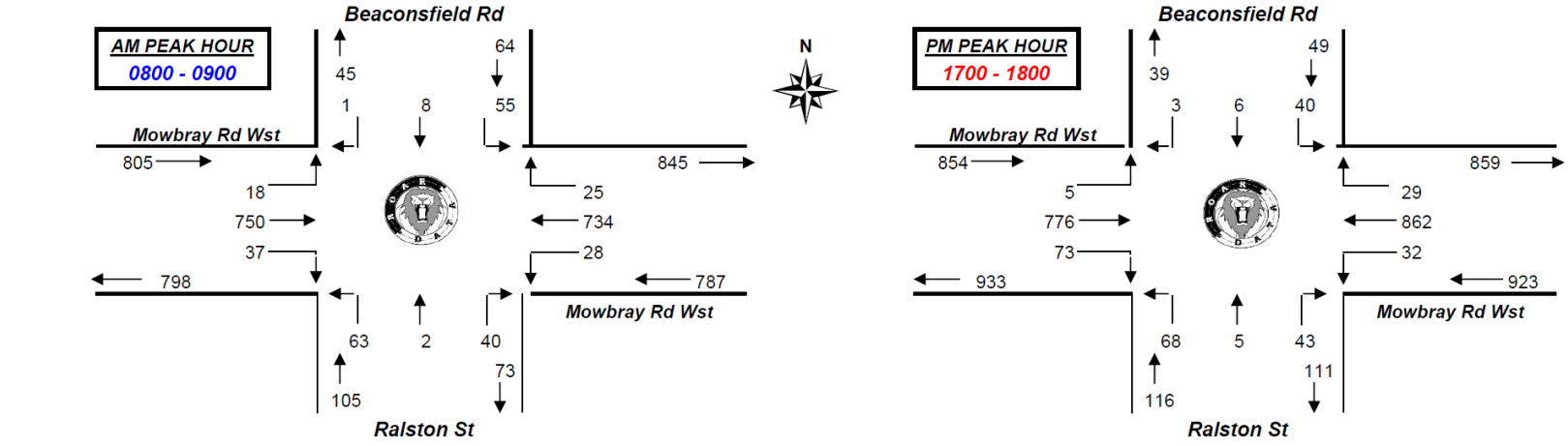
All Vehicles	NORTH			WEST			SOUTH			EAST			
	Beaconsfield Rd			*Mowbray Rd Wst*			*Ralston St*			*Mowbray Rd Wst*			
Time Per	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1500 - 1515	4	1	1	1	160	7	14	0	8	6	213	5	**420**
1515 - 1530	10	2	1	1	137	14	21	1	14	11	203	8	**423**
1530 - 1545	17	0	0	3	187	12	4	0	8	5	207	10	**453**
1545 - 1600	11	0	1	1	169	8	6	0	5	11	252	3	**467**
1600 - 1615	10	0	0	2	170	11	9	0	9	2	184	12	**409**
1615 - 1630	11	0	1	1	167	14	14	0	14	14	223	7	**466**
1630 - 1645	3	1	0	1	157	5	3	0	2	12	189	11	**384**
1645 - 1700	6	3	0	0	145	8	7	0	5	5	173	17	**369**
1700 - 1715	3	0	0	0	140	16	7	1	9	11	185	8	**380**
1715 - 1730	9	1	1	2	221	18	14	1	8	6	239	5	**525**
1730 - 1745	12	2	1	1	197	25	18	1	10	9	217	7	**500**
1745 - 1800	16	3	1	2	218	14	29	2	16	6	221	9	**537**
1800 - 1815	4	2	0	2	176	12	8	0	6	5	158	7	**380**
1815 - 1830	3	0	0	5	174	17	4	0	3	3	141	5	**355**
1830 - 1845	7	1	0	3	167	11	7	0	5	5	133	9	**348**
1845 - 1900	5	2	0	2	176	9	5	0	5	5	142	11	**362**
Period End	**131**	**18**	**7**	**27**	**2761**	**201**	**170**	**6**	**127**	**116**	**3080**	**134**	**6778**

	NORTH			WEST			SOUTH			EAST			
	Beaconsfield Rd			*Mowbray Rd Wst*			*Ralston St*			*Mowbray Rd Wst*			
Peak Time	L	T	R	L	T	R	L	T	R	L	T	R	TOT
0600 - 0700	12	3	0	4	698	18	29	0	29	10	296	12	**1111**
0615 - 0715	19	4	0	5	824	28	36	1	31	16	333	19	**1316**
0630 - 0730	25	6	0	7	946	40	46	1	35	27	453	23	**1609**
0645 - 0745	38	6	0	7	928	42	52	3	35	32	505	30	**1678**
0700 - 0800	35	6	1	7	871	51	67	5	33	35	578	29	**1718**
0715 - 0815	42	6	1	6	820	51	69	5	35	27	649	31	**1742**
0730 - 0830	49	6	1	5	748	46	66	5	35	21	664	29	**1675**
0745 - 0845	48	6	2	12	744	46	72	3	40	25	713	25	**1736**
0800 - 0900	55	8	1	18	750	37	63	2	40	28	734	25	**1761**
0815 - 0915	50	6	1	24	750	37	73	1	39	30	728	22	**1761**
0830 - 0930	45	4	1	27	743	35	66	1	44	33	695	20	**1714**
0845 - 0945	44	5	0	22	729	37	58	1	43	30	668	23	**1660**
0900 - 1000	43	3	0	17	700	35	54	0	40	29	616	28	**1565**
PEAK HOUR	**55**	**8**	**1**	**18**	**750**	**37**	**63**	**2**	**40**	**28**	**734**	**25**	**1761**

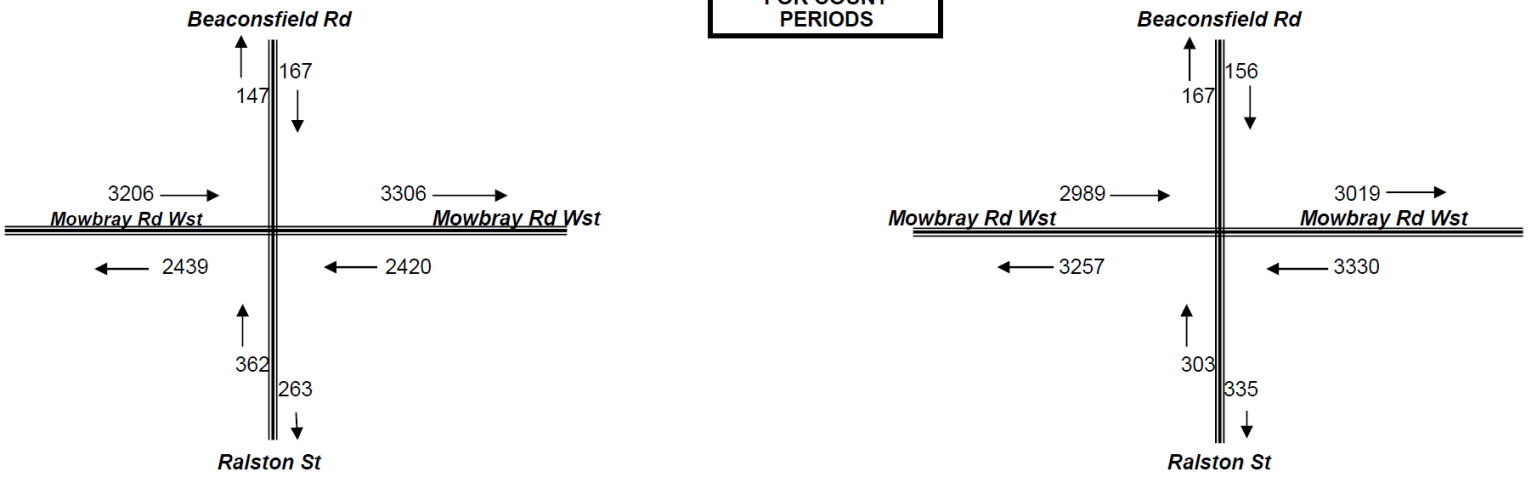
	NORTH			WEST			SOUTH			EAST			
	Beaconsfield Rd			*Mowbray Rd Wst*			*Ralston St*			*Mowbray Rd Wst*			
Peak Time	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1500 - 1600	42	3	3	6	653	41	45	1	35	33	875	26	**1763**
1515 - 1615	48	2	2	7	663	45	40	1	36	29	846	33	**1752**
1530 - 1630	49	0	2	7	693	45	33	0	36	32	866	32	**1795**
1545 - 1645	35	1	2	5	663	38	32	0	30	39	848	33	**1726**
1600 - 1700	30	4	1	4	639	38	33	0	30	33	769	47	**1628**
1615 - 1715	23	4	1	2	609	43	31	1	30	42	770	43	**1599**
1630 - 1730	21	5	1	3	663	47	31	2	24	34	786	41	**1658**
1645 - 1745	30	6	2	3	703	67	46	3	32	31	814	37	**1774**
1700 - 1800	40	6	3	5	776	73	68	5	43	32	862	29	**1942**
1715 - 1815	41	8	3	7	812	69	69	4	40	26	835	28	**1942**
1730 - 1830	35	7	2	10	765	68	59	3	35	23	737	28	**1772**
1745 - 1845	30	6	1	12	735	54	48	2	30	19	653	30	**1620**
1800 - 1900	19	5	0	12	693	49	24	0	19	18	574	32	**1445**
PEAK HOUR	**40**	**6**	**3**	**5**	**776**	**73**	**68**	**5**	**43**	**32**	**862**	**29**	**1942**

R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Mob.0418-239019

Client : Ray Dowsett Traffic & Transport Planning P/L
Job No/Name : 6379 CHATSWOOD Golf Club Counts
Day/Date : Tuesday 7th March 2017



TOTAL VOLUMES FOR COUNT PERIODS



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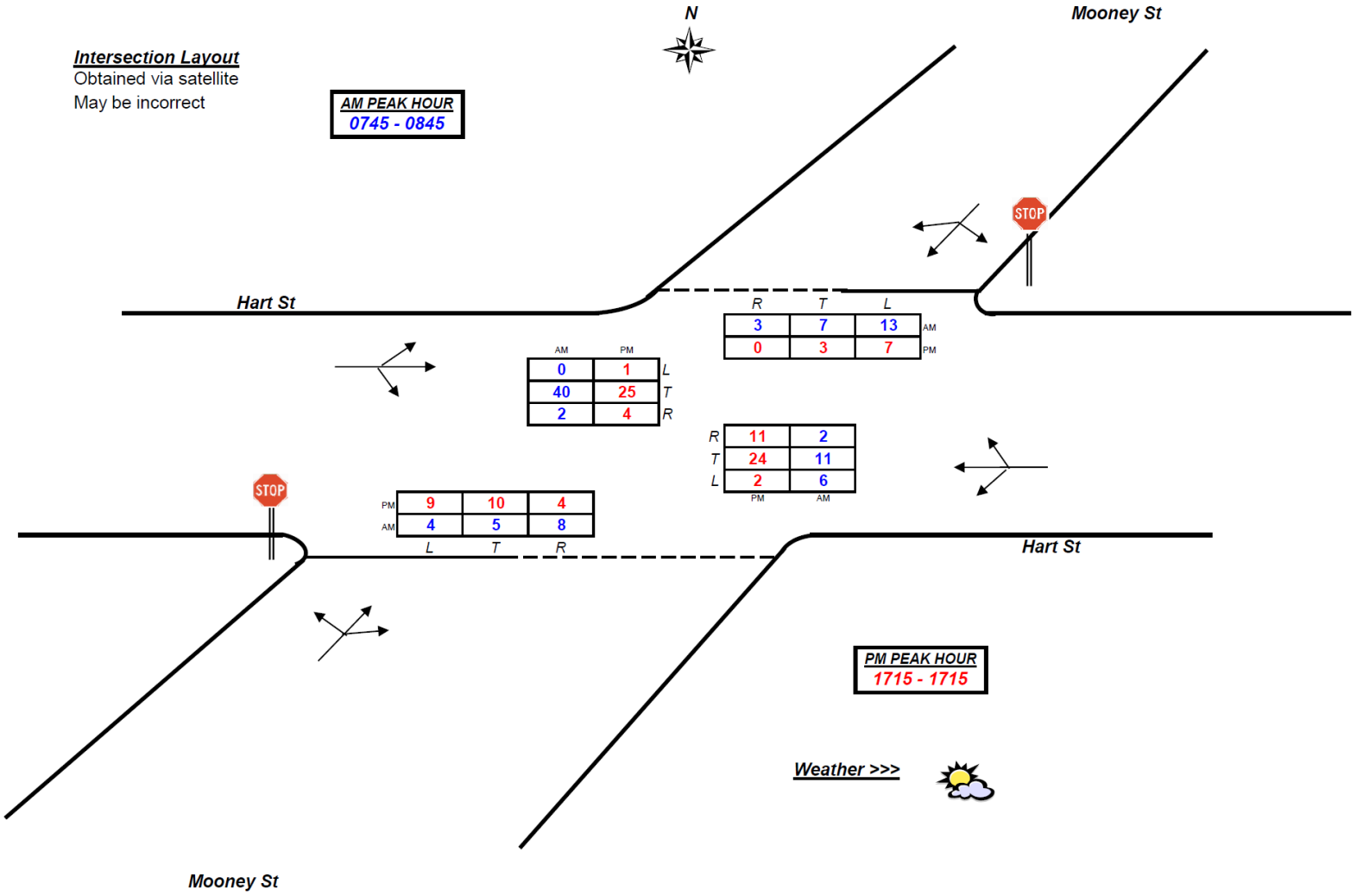

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Client : Ray Dowsett Traffic & Transport Planning P/L
Job No/Name : 6379 CHATSWOOD Golf Club Counts
Day/Date : Tuesday 7th March 2017

All Vehicles	NORTH Mooney St			WEST Hart St			SOUTH Mooney St			EAST Hart St			
Time Per	L	T	R	L	T	R	L	T	R	L	T	R	TOT
0600 - 0615	1	1	0	0	0	1	0	0	0	1	0	0	4
0615 - 0630	2	1	0	0	0	0	0	0	1	0	0	1	5
0630 - 0645	2	2	1	0	3	1	1	0	0	1	0	0	11
0645 - 0700	1	0	0	0	3	0	0	0	0	0	1	1	6
0700 - 0715	2	0	0	0	2	0	0	1	0	2	0	0	7
0715 - 0730	1	0	1	0	4	0	0	0	0	0	2	1	9
0730 - 0745	1	0	0	0	6	0	0	1	2	0	0	0	10
0745 - 0800	5	1	1	0	9	1	2	0	3	0	2	0	24
0800 - 0815	3	3	0	0	9	0	1	2	3	2	3	1	27
0815 - 0830	2	1	1	0	13	0	1	1	1	1	1	0	22
0830 - 0845	3	2	1	0	9	1	0	2	1	3	5	1	28
0845 - 0900	3	1	1	1	3	0	2	0	3	0	9	0	23
0900 - 0915	4	3	0	0	8	2	0	0	1	1	5	1	25
0915 - 0930	3	0	0	0	11	1	0	1	0	0	3	0	19
0930 - 0945	1	0	0	0	10	1	0	2	0	0	3	1	18
0945 - 1000	0	0	1	1	5	0	1	0	1	1	0	0	10
Period End	34	15	7	2	95	8	8	10	16	12	34	7	248

All Vehicles	NORTH Mooney St			WEST Hart St			SOUTH Mooney St			EAST Hart St			
Time Per	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1500 - 1515	0	0	1	1	3	1	0	2	0	1	9	2	20
1515 - 1530	1	0	0	1	14	2	1	0	0	1	5	0	25
1530 - 1545	1	0	0	0	8	1	1	1	1	0	6	0	19
1545 - 1600	2	0	0	0	7	3	0	1	0	0	2	1	16
1600 - 1615	0	1	0	1	3	1	0	1	1	0	7	1	16
1615 - 1630	1	0	0	0	5	2	2	3	0	0	5	0	18
1630 - 1645	0	1	0	0	4	1	1	0	0	0	3	1	11
1645 - 1700	0	2	0	0	2	0	0	2	2	0	5	2	15
1700 - 1715	0	1	0	0	1	1	1	1	0	0	5	2	12
1715 - 1730	1	1	0	0	5	1	2	1	1	1	5	3	21
1730 - 1745	3	2	0	0	10	1	5	3	2	1	10	4	41
1745 - 1800	2	0	0	0	4	1	1	1	1	0	4	2	16
1800 - 1815	1	0	0	1	6	1	1	5	0	0	5	2	22
1815 - 1830	1	0	1	1	1	0	1	2	1	0	10	2	20
1830 - 1845	0	1	0	0	3	1	0	1	0	1	5	2	14
1845 - 1900	1	1	0	0	1	1	0	0	1	0	2	0	7
Period End	14	10	2	5	77	18	16	24	10	5	88	24	293

	NORTH Mooney St			WEST Hart St			SOUTH Mooney St			EAST Hart St			
Peak Time	L	T	R	L	T	R	L	T	R	L	T	R	TOT
0600 - 0700	6	4	1	0	6	2	1	0	1	2	1	2	26
0615 - 0715	7	3	1	0	8	1	1	1	1	3	1	2	29
0630 - 0730	6	2	2	0	12	1	1	1	0	3	3	2	33
0645 - 0745	5	0	1	0	15	0	0	2	2	2	3	2	32
0700 - 0800	9	1	2	0	21	1	2	2	5	2	4	1	50
0715 - 0815	10	4	2	0	28	1	3	3	8	2	7	2	70
0730 - 0830	11	5	2	0	37	1	4	4	9	3	6	1	83
0745 - 0845	13	7	3	0	40	2	4	5	8	6	11	2	101
0800 - 0900	11	7	3	1	34	1	4	5	8	6	18	2	100
0815 - 0915	12	7	3	1	33	3	3	3	6	5	20	2	98
0830 - 0930	13	6	2	1	31	4	2	3	5	4	22	2	95
0845 - 0945	11	4	1	1	32	4	2	3	4	1	20	2	85
0900 - 1000	8	3	1	1	34	4	1	3	2	2	11	2	72
PEAK HOUR	13	7	3	0	40	2	4	5	8	6	11	2	101

	NORTH Mooney St			WEST Hart St			SOUTH Mooney St			EAST Hart St			
Peak Time	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1500 - 1600	4	0	1	2	32	7	2	4	1	2	22	3	80
1515 - 1615	4	1	0	2	32	7	2	3	2	1	20	2	76
1530 - 1630	4	1	0	1	23	7	3	6	2	0	20	2	69
1545 - 1645	3	2	0	1	19	7	3	5	1	0	17	3	61
1600 - 1700	1	4	0	1	14	4	3	6	3	0	20	4	60
1615 - 1715	1	4	0	0	12	4	4	6	2	0	18	5	56
1630 - 1730	1	5	0	0	12	3	4	4	3	1	18	8	59
1645 - 1745	4	6	0	0	18	3	8	7	5	2	25	11	89
1700 - 1800	6	4	0	0	20	4	9	6	4	2	24	11	90
1715 - 1815	7	3	0	1	25	4	9	10	4	2	24	11	100
1730 - 1830	7	2	1	2	21	3	8	11	4	1	29	10	99
1745 - 1845	4	1	1	2	14	3	3	9	2	1	24	8	72
1800 - 1900	3	2	1	2	11	3	2	8	2	1	22	6	63
PEAK HOUR	7	3	0	1	25	4	9	10	4	2	24	11	100

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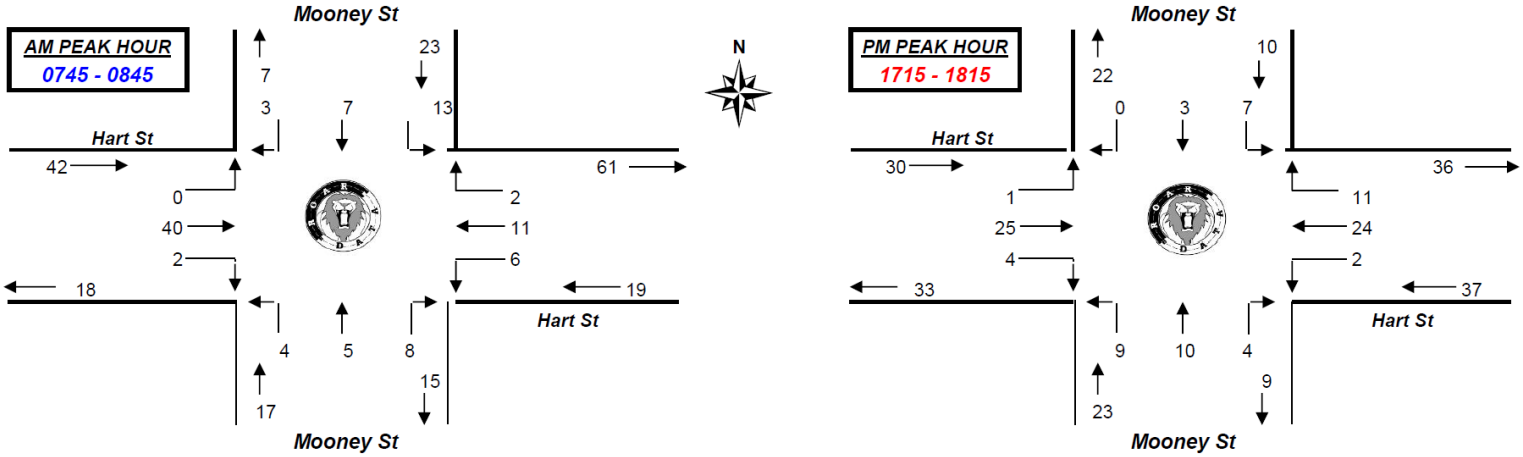
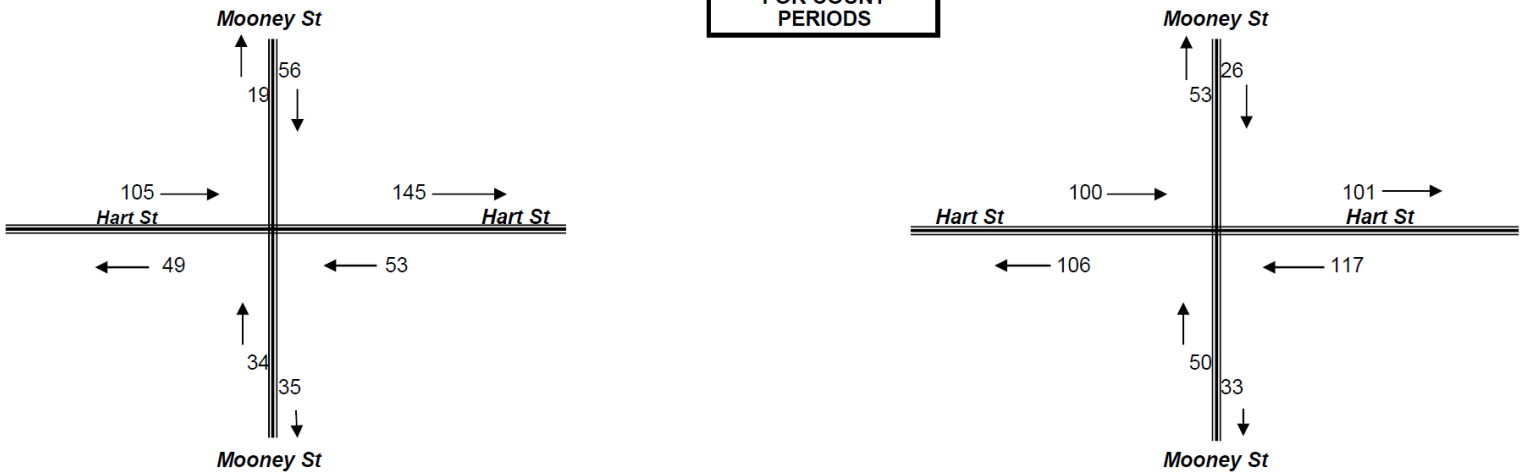
Day/Date : Tuesday 7th March 2017



TOTAL VOLUMES FOR COUNT PERIODS



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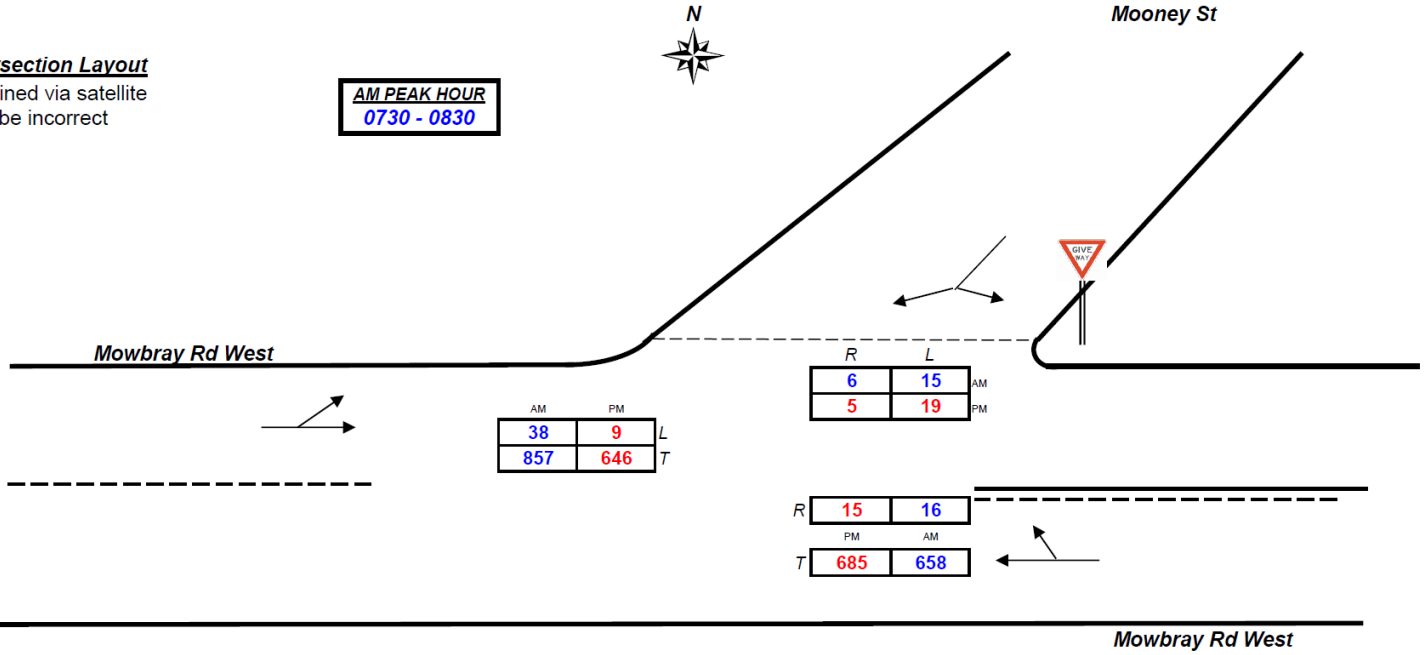
Day/Date : Tuesday 7th March 2017

Intersection Layout
Obtained via satellite
May be incorrect

AM PEAK HOUR
0730 - 0830



PM PEAK HOUR
1700 - 1800

Weather >>>

R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Ray Dowsett Traffic & Transport Planning P/L
Job No/Name : 6379 CHATSWOOD Golf Club Counts
Day/Date : Tuesday 7th March 2017

All Vehicles

	WEST		NORTH		EAST		
	Mowbray Rd West		Mooney St		Mowbray Rd West		
Time Per	L	T	R	L	T	R	TOTAL
0600 - 0615	1	74	1	3	27	1	**107**
0615 - 0630	2	110	0	1	58	0	**171**
0630 - 0645	0	159	2	4	73	1	**239**
0645 - 0700	0	163	0	3	66	4	**236**
0700 - 0715	0	193	2	2	94	6	**297**
0715 - 0730	2	187	1	3	132	0	**325**
0730 - 0745	4	199	1	0	150	3	**357**
0745 - 0800	14	219	0	3	173	3	**412**
0800 - 0815	6	229	3	8	166	7	**419**
0815 - 0830	4	210	2	4	169	3	**392**
0830 - 0845	4	179	1	4	163	3	**354**
0845 - 0900	4	105	2	6	120	6	**243**
0900 - 0915	5	179	7	6	186	2	**385**
0915 - 0930	1	165	0	2	119	2	**289**
0930 - 0945	2	154	0	3	110	1	**270**
0945 - 1000	1	151	1	2	112	0	**267**
Period End	**50**	**2676**	**23**	**54**	**1918**	**42**	**4763**

	WEST		NORTH		EAST		
	Mowbray Rd West		Mooney St		Mowbray Rd West		
Peak Per	L	T	R	L	T	R	TOTAL
0600 - 0700	3	506	3	11	224	6	**753**
0615 - 0715	2	625	4	10	291	11	**943**
0630 - 0730	2	702	5	12	365	11	**1097**
0645 - 0745	6	742	4	8	442	13	**1215**
0700 - 0800	20	798	4	8	549	12	**1391**
0715 - 0815	26	834	5	14	621	13	**1513**
0730 - 0830	28	857	6	15	658	16	**1580**
0745 - 0845	28	837	6	19	671	16	**1577**
0800 - 0900	18	723	8	22	618	19	**1408**
0815 - 0915	17	673	12	20	638	14	**1374**
0830 - 0930	14	628	10	18	588	13	**1271**
0845 - 0945	12	603	9	17	535	11	**1187**
0900 - 1000	9	649	8	13	527	5	**1211**
PEAK HR	**28**	**857**	**6**	**15**	**658**	**16**	**1580**

All Vehicles

	WEST		NORTH		EAST		
	Mowbray Rd West		Mooney St		Mowbray Rd West		
Time Per	L	T	R	L	T	R	TOTAL
1500 - 1515	2	69	3	5	141	3	**223**
1515 - 1530	1	101	4	4	140	3	**253**
1530 - 1545	1	115	5	4	142	3	**270**
1545 - 1600	0	111	0	6	159	8	**284**
1600 - 1615	1	128	1	2	139	3	**274**
1615 - 1630	0	107	0	4	159	2	**272**
1630 - 1645	1	124	5	5	129	2	**266**
1645 - 1700	1	145	0	1	156	3	**306**
1700 - 1715	0	159	0	6	183	3	**351**
1715 - 1730	3	138	1	5	181	4	**332**
1730 - 1745	4	191	3	7	178	4	**387**
1745 - 1800	2	158	1	1	143	4	**309**
1800 - 1815	2	166	0	1	142	2	**313**
1815 - 1830	1	149	1	2	144	6	**303**
1830 - 1845	2	136	0	1	130	4	**273**
1845 - 1900	1	131	1	1	126	3	**263**
Period End	**22**	**2128**	**25**	**55**	**2392**	**57**	**4679**

	WEST		NORTH		EAST		
	Mowbray Rd West		Mooney St		Mowbray Rd West		
Peak Per	L	T	R	L	T	R	TOTAL
1500 - 1600	4	396	12	19	582	17	**1030**
1515 - 1615	3	455	10	16	580	17	**1081**
1530 - 1630	2	461	6	16	599	16	**1100**
1545 - 1645	2	470	6	17	586	15	**1096**
1600 - 1700	3	504	6	12	583	10	**1118**
1615 - 1715	2	535	5	16	627	10	**1195**
1630 - 1730	5	566	6	17	649	12	**1255**
1645 - 1745	8	633	4	19	698	14	**1376**
1700 - 1800	9	646	5	19	685	15	**1379**
1715 - 1815	11	653	5	14	644	14	**1341**
1730 - 1830	9	664	5	11	607	16	**1312**
1745 - 1845	7	609	2	5	559	16	**1198**
1800 - 1900	6	582	2	5	542	15	**1152**
PEAK HR	**9**	**646**	**5**	**19**	**685**	**15**	**1379**

R.O.A.R DATA

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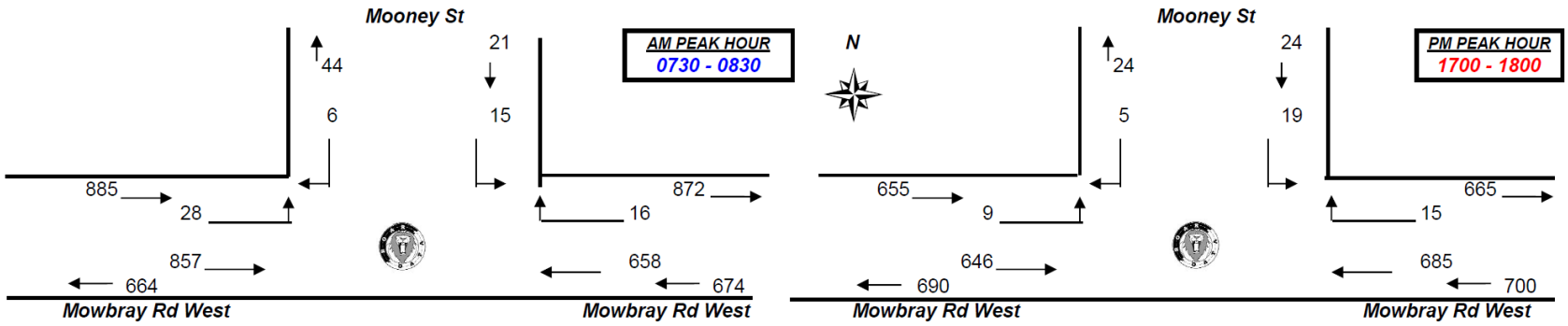
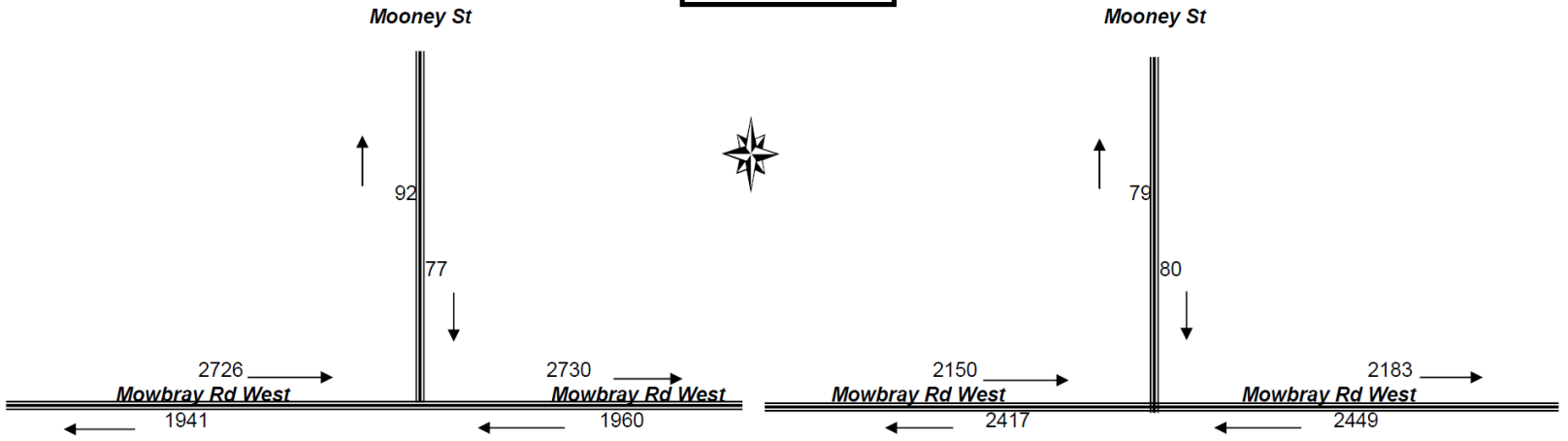
Day/Date : Tuesday 7th March 2017



TOTAL VOLUMES FOR PERIOD COUNTED



Appendix 'C'

'SIDRA' Intersection Modelling Outputs

Existing Traffic Conditions

Beaconsfield Road/Dalrymple Avenue
Existing Conditions AM Peak Hour

MOVEMENT SUMMARY

Site: [Beaconsfield Road/Dalrymple Avenue]

Existing AM Peak Hour Conditions
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Total veh/h	Demand 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 per veh	Average Speed km/h
SouthEast: Beaconsfield Road											
21	L2	13	0.0	0.035	5.0	LOS A	0.2	1.2	0.28	0.50	41.5
22	T1	22	0.0	0.035	4.5	LOS A	0.2	1.2	0.28	0.50	42.0
23	R2	4	0.0	0.035	7.1	LOS A	0.2	1.2	0.28	0.50	41.9
Approach		39	0.0	0.035	4.9	LOS A	0.2	1.2	0.28	0.50	41.9
NorthEast: Dalrymple Avenue											
24	L2	5	0.0	0.065	5.1	LOS A	0.3	2.3	0.30	0.50	41.5
25	T1	58	0.0	0.065	4.5	LOS A	0.3	2.3	0.30	0.50	42.0
26	R2	8	0.0	0.065	7.2	LOS A	0.3	2.3	0.30	0.50	41.9
Approach		72	0.0	0.065	4.9	LOS A	0.3	2.3	0.30	0.50	42.0
NorthWest: Beaconsfield Road											
27	L2	37	0.0	0.137	5.7	LOS A	0.7	4.9	0.40	0.60	41.0
28	T1	47	0.0	0.137	5.1	LOS A	0.7	4.9	0.40	0.60	41.5
29	R2	56	0.0	0.137	7.8	LOS A	0.7	4.9	0.40	0.60	41.4
Approach		140	0.0	0.137	6.3	LOS A	0.7	4.9	0.40	0.60	41.3
SouthWest: Dalrymple Avenue											
30	L2	13	0.0	0.167	4.6	LOS A	0.9	6.4	0.15	0.47	41.9
31	T1	195	0.0	0.167	4.0	LOS A	0.9	6.4	0.15	0.47	42.4
32	R2	20	0.0	0.167	6.7	LOS A	0.9	6.4	0.15	0.47	42.2
Approach		227	0.0	0.167	4.3	LOS A	0.9	6.4	0.15	0.47	42.3
All Vehicles		478	0.0	0.167	5.0	LOS A	0.9	6.4	0.26	0.51	41.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

Organisation: RAY DOWSETT T & T P PTY LTD | Processed: Thursday, 18 May 2017 11:54:58 AM
Project: C:\Users\Ray\Documents\Ray Dowsett T & T P PL\2017 Jobs\1705 128 Beaconsfield Road, Chatswood - Chatswood Golf Club\SIDRA Models - Existing Flows\Beaconsfield Road & Dalrymple Avenue, Chatswood.sip7

Beaconsfield Road/Dalrymple Avenue
Existing Conditions PM Peak Hour

MOVEMENT SUMMARY

Site: [Beaconsfield Road/Dalrymple Avenue]

Existing PM Peak Hour Conditions
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Beaconsfield Road											
21	L2	18	0.0	0.061	5.3	LOS A	0.3	2.1	0.33	0.52	41.5
22	T1	41	0.0	0.061	4.7	LOS A	0.3	2.1	0.33	0.52	41.9
23	R2	7	0.0	0.061	7.3	LOS A	0.3	2.1	0.33	0.52	41.8
Approach		66	0.0	0.061	5.1	LOS A	0.3	2.1	0.33	0.52	41.8
NorthEast: Dalrymple Avenue											
24	L2	1	0.0	0.106	4.8	LOS A	0.5	3.8	0.21	0.50	41.6
25	T1	100	0.0	0.106	4.2	LOS A	0.5	3.8	0.21	0.50	42.1
26	R2	28	0.0	0.106	6.8	LOS A	0.5	3.8	0.21	0.50	42.0
Approach		129	0.0	0.106	4.8	LOS A	0.5	3.8	0.21	0.50	42.1
NorthWest: Beaconsfield Road											
27	L2	14	0.0	0.059	4.8	LOS A	0.3	2.0	0.22	0.54	41.3
28	T1	25	0.0	0.059	4.3	LOS A	0.3	2.0	0.22	0.54	41.8
29	R2	29	0.0	0.059	6.9	LOS A	0.3	2.0	0.22	0.54	41.7
Approach		68	0.0	0.059	5.5	LOS A	0.3	2.0	0.22	0.54	41.7
SouthWest: Dalrymple Avenue											
30	L2	36	0.0	0.088	4.8	LOS A	0.4	3.1	0.23	0.50	41.6
31	T1	58	0.0	0.088	4.3	LOS A	0.4	3.1	0.23	0.50	42.1
32	R2	11	0.0	0.088	6.9	LOS A	0.4	3.1	0.23	0.50	42.0
Approach		104	0.0	0.088	4.7	LOS A	0.4	3.1	0.23	0.50	41.9
All Vehicles		368	0.0	0.106	5.0	LOS A	0.5	3.8	0.24	0.51	41.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

Organisation: RAY DOWSETT T & T P PTY LTD | Processed: Thursday, 18 May 2017 11:54:59 AM
Project: C:\Users\Ray\Documents\Ray Dowsett T & T P PL\2017 Jobs\1705 128 Beaconsfield Road, Chatswood - Chatswood Golf Club\SIDRA Models - Existing Flows\Beaconsfield Road & Dalrymple Avenue, Chatswood.sip7

Beaconsfield Road/Mowbray Road West/Ralston Street
Existing Conditions AM Peak Hour

MOVEMENT SUMMARY

Site: 3609 [Mowbray Road West/Beaconsfield Road/Ralston Avenue]

AM Peak Existing Conditions
Signals - Fixed Time Isolated Cycle Time = 90 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Mowbary Road West											
4a	L1	29	0.0	0.840	30.8	LOS C	33.0	231.3	0.92	0.90	41.0
5	T1	773	0.0	0.840	25.7	LOS C	33.0	231.3	0.92	0.90	42.1
6	R2	26	0.0	0.041	21.2	LOS C	0.7	4.6	0.60	0.68	43.7
Approach		828	0.0	0.840	25.7	LOS C	33.0	231.3	0.91	0.89	42.1
North: Beaconsfield Road											
7	L2	58	0.0	0.322	49.1	LOS D	2.5	17.6	0.98	0.75	32.7
Approach		58	0.0	0.322	49.1	LOS D	2.5	17.6	0.98	0.75	32.7
West: Mowbray Road West											
10	L2	19	0.0	0.749	17.7	LOS B	23.5	164.8	0.72	0.67	48.8
11	T1	789	0.0	0.749	12.1	LOS B	23.5	164.8	0.72	0.67	49.9
12b	R3	39	0.0	0.156	33.9	LOS C	1.4	9.5	0.84	0.74	37.9
Approach		847	0.0	0.749	13.3	LOS B	23.5	164.8	0.73	0.67	49.2
SouthWest: Ralston Avenue											
30b	L3	66	0.0	0.397	27.6	LOS C	3.1	21.5	0.93	0.77	41.7
32a	R1	42	0.0	0.397	25.4	LOS C	3.1	21.5	0.93	0.77	41.0
Approach		108	0.0	0.397	26.8	LOS C	3.1	21.5	0.93	0.77	41.5
All Vehicles		1842	0.0	0.840	20.8	LOS C	33.0	231.3	0.83	0.78	44.6

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

Beaconsfield Road/Mowbray Road West/Ralston Street
Existing Conditions PM Peak Hour

MOVEMENT SUMMARY

Site: 3609 [Mowbray Road West/Beaconsfield Road/Ralston Avenue]

PM Peak Existing Conditions
Signals - Fixed Time Isolated Cycle Time = 120 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand 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
East: Mowbary Road West											
4a	L1	34	0.0	0.872	32.3	LOS C	48.8	341.5	0.89	0.87	40.4
5	T1	907	0.0	0.872	27.0	LOS C	48.8	341.5	0.89	0.87	41.4
6	R2	31	0.0	0.039	19.1	LOS B	0.8	5.7	0.49	0.67	44.8
Approach		972	0.0	0.872	27.0	LOS C	48.8	341.5	0.88	0.86	41.5
North: Beaconsfield Road											
7	L2	52	0.0	0.306	63.3	LOS E	2.9	20.6	0.98	0.74	29.0
Approach		52	0.0	0.306	63.3	LOS E	2.9	20.6	0.98	0.74	29.0
West: Mowbray Road West											
10	L2	5	0.0	0.783	16.9	LOS B	26.8	187.6	0.62	0.57	49.3
11	T1	817	0.0	0.783	11.4	LOS B	26.8	187.6	0.62	0.57	50.5
12b	R3	77	0.0	0.382	46.8	LOS D	3.9	27.4	0.91	0.79	33.4
Approach		899	0.0	0.783	14.4	LOS B	26.8	187.6	0.64	0.59	48.4
SouthWest: Ralston Avenue											
30b	L3	72	0.0	0.498	45.5	LOS D	4.7	32.7	0.97	0.84	34.7
32a	R1	45	0.0	0.498	43.3	LOS D	4.7	32.7	0.97	0.84	34.2
Approach		117	0.0	0.498	44.6	LOS D	4.7	32.7	0.97	0.84	34.5
All Vehicles		2039	0.0	0.872	23.4	LOS C	48.8	341.5	0.78	0.74	43.2

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

Mooney Street/Hart Street
Existing Conditions AM Peak Hour

MOVEMENT SUMMARY

Site: [Mooney Street/Hart Street, Chatswood]

Existing AM Peak Hour Conditions
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand 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: Mooney Street											
1	L2	4	0.0	0.017	8.1	LOS A	0.1	0.4	0.08	0.97	51.9
2	T1	5	0.0	0.017	7.9	LOS A	0.1	0.4	0.08	0.97	51.6
3	R2	8	0.0	0.017	7.9	LOS A	0.1	0.4	0.08	0.97	51.4
Approach		18	0.0	0.017	7.9	LOS A	0.1	0.4	0.08	0.97	51.6
East: Hart Street											
4	L2	6	0.0	0.011	5.6	LOS A	0.0	0.1	0.04	0.24	56.1
5	T1	12	0.0	0.011	0.0	LOS A	0.0	0.1	0.04	0.24	57.6
6	R2	2	0.0	0.011	5.6	LOS A	0.0	0.1	0.04	0.24	55.6
Approach		20	0.0	0.011	2.4	NA	0.0	0.1	0.04	0.24	56.9
North: Mooney Street											
7	L2	14	0.0	0.020	8.2	LOS A	0.1	0.5	0.13	0.94	51.9
8	T1	7	0.0	0.020	7.9	LOS A	0.1	0.5	0.13	0.94	51.6
9	R2	3	0.0	0.020	7.8	LOS A	0.1	0.5	0.13	0.94	51.4
Approach		24	0.0	0.020	8.0	LOS A	0.1	0.5	0.13	0.94	51.7
West: Hart Street											
10	L2	1	0.0	0.023	5.6	LOS A	0.0	0.1	0.01	0.04	58.0
11	T1	42	0.0	0.023	0.0	LOS A	0.0	0.1	0.01	0.04	59.6
12	R2	2	0.0	0.023	5.5	LOS A	0.0	0.1	0.01	0.04	57.4
Approach		45	0.0	0.023	0.4	NA	0.0	0.1	0.01	0.04	59.4
All Vehicles		107	0.0	0.023	3.7	NA	0.1	0.5	0.05	0.44	55.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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.

Organisation: RAY DOWSETT T & T P PTY LTD | Processed: Thursday, 18 May 2017 12:02:22 PM
Project: C:\Users\Ray\Documents\Ray Dowsett T & T P PL\2017 Jobs\1705 128 Beaconsfield Road, Chatswood - Chatswood Golf Club\SIDRA Models - Existing Flows\Mooney Street & Hart Street, Chatswood.sip7

Mooney Street/Hart Street
Existing Conditions PM Peak Hour

MOVEMENT SUMMARY

Site: [Mooney Street/Hart Street, Chatswood]

Existing PM Peak Hour Conditions
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Total veh/h	Demand 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 per veh	Average Speed km/h
South: Mooney Street											
1	L2	9	0.0	0.021	8.1	LOS A	0.1	0.5	0.11	0.96	51.9
2	T1	11	0.0	0.021	7.9	LOS A	0.1	0.5	0.11	0.96	51.7
3	R2	4	0.0	0.021	7.9	LOS A	0.1	0.5	0.11	0.96	51.4
Approach		24	0.0	0.021	8.0	LOS A	0.1	0.5	0.11	0.96	51.7
East: Hart Street											
4	L2	2	0.0	0.021	5.6	LOS A	0.1	0.5	0.06	0.21	56.4
5	T1	25	0.0	0.021	0.0	LOS A	0.1	0.5	0.06	0.21	57.9
6	R2	12	0.0	0.021	5.5	LOS A	0.1	0.5	0.06	0.21	55.8
Approach		39	0.0	0.021	2.0	NA	0.1	0.5	0.06	0.21	57.2
North: Mooney Street											
7	L2	7	0.0	0.009	8.1	LOS A	0.0	0.2	0.09	0.95	51.9
8	T1	3	0.0	0.009	7.9	LOS A	0.0	0.2	0.09	0.95	51.6
9	R2	1	0.0	0.009	7.9	LOS A	0.0	0.2	0.09	0.95	51.4
Approach		12	0.0	0.009	8.0	LOS A	0.0	0.2	0.09	0.95	51.7
West: Hart Street											
10	L2	1	0.0	0.016	5.6	LOS A	0.0	0.2	0.03	0.10	57.4
11	T1	26	0.0	0.016	0.0	LOS A	0.0	0.2	0.03	0.10	59.0
12	R2	4	0.0	0.016	5.5	LOS A	0.0	0.2	0.03	0.10	56.8
Approach		32	0.0	0.016	0.9	NA	0.0	0.2	0.03	0.10	58.6
All Vehicles		106	0.0	0.021	3.7	NA	0.1	0.5	0.07	0.43	55.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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.

Organisation: RAY DOWSETT T & T P PTY LTD | Processed: Thursday, 18 May 2017 12:02:23 PM
Project: C:\Users\Ray\Documents\Ray Dowsett T & T P PL\2017 Jobs\1705 128 Beaconsfield Road, Chatswood - Chatswood Golf Club\SIDRA Models - Existing Flows\Mooney Street & Hart Street, Chatswood.sip7

Mowbray Road West/Mooney Street
Existing Conditions AM Peak Hour

MOVEMENT SUMMARY

▽ **Site: [Mowbray Road West/Mooney Street, Chatswood]**

Existing AM Peak Hour Conditions
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Mowbray Road West											
5	T1	693	0.0	0.383	0.7	LOS A	0.7	4.7	0.09	0.02	59.0
6	R2	17	0.0	0.383	15.4	LOS C	0.7	4.7	0.09	0.02	56.8
Approach		709	0.0	0.383	1.0	NA	0.7	4.7	0.09	0.02	58.9
North: Mooney Street											
7	L2	16	0.0	0.075	10.9	LOS B	0.2	1.6	0.79	0.91	46.4
9	R2	6	0.0	0.075	29.2	LOS D	0.2	1.6	0.79	0.91	46.0
Approach		22	0.0	0.075	16.2	LOS C	0.2	1.6	0.79	0.91	46.3
West: Mowbray Road West											
10	L2	29	0.0	0.474	5.6	LOS A	0.0	0.0	0.00	0.02	58.1
11	T1	902	0.0	0.474	0.1	LOS A	0.0	0.0	0.00	0.02	59.7
Approach		932	0.0	0.474	0.2	NA	0.0	0.0	0.00	0.02	59.6
All Vehicles		1663	0.0	0.474	0.8	NA	0.7	4.7	0.05	0.03	59.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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.

Organisation: RAY DOWSETT T & T P PTY LTD | Processed: Thursday, 18 May 2017 12:05:08 PM
Project: C:\Users\Ray\Documents\Ray Dowsett T & T P PL\2017 Jobs\1705 128 Beaconsfield Road, Chatswood - Chatswood Golf Club\SIDRA Models - Existing Flows\Mowbray Road West & Mooney Street, Chatswood.sip7

Mowbray Road West/Mooney Street
Existing Conditions PM Peak Hour

MOVEMENT SUMMARY

▽ **Site: [Mowbray Road West/Mooney Street, Chatswood]**

Existing PM Peak Hour Conditions
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

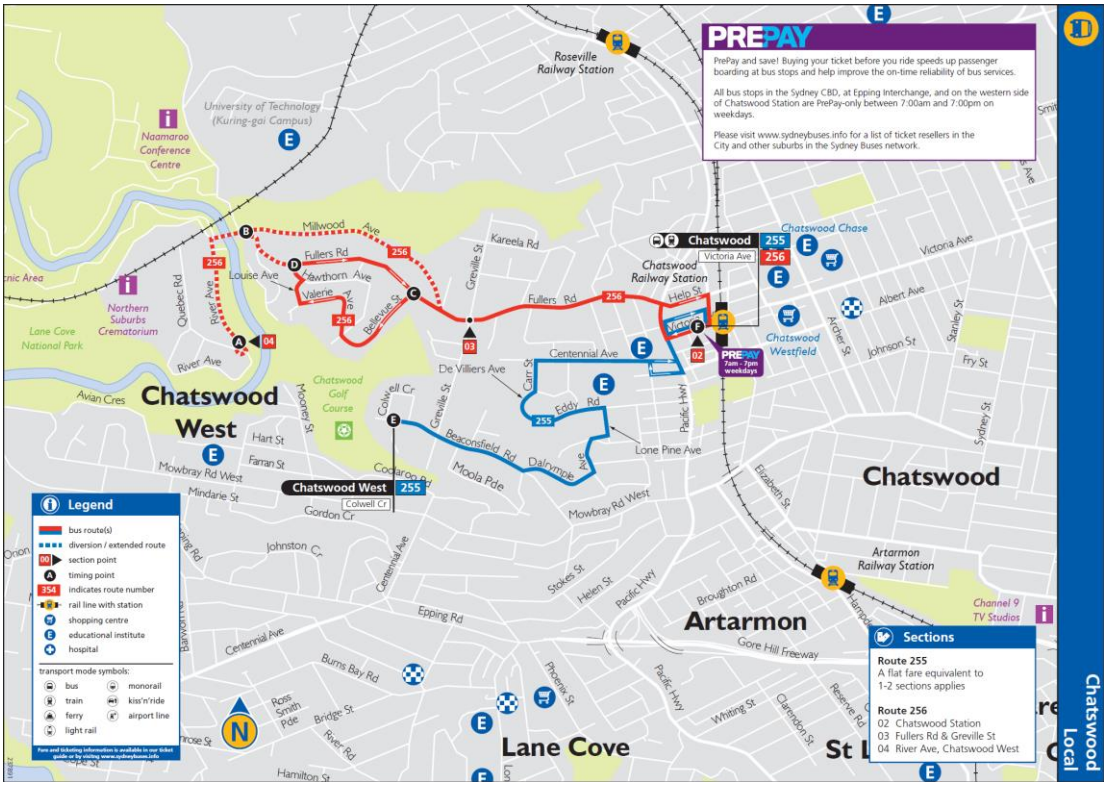
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Mowbray Road West											
5	T1	721	0.0	0.385	0.3	LOS A	0.4	2.7	0.05	0.01	59.5
6	R2	16	0.0	0.385	10.9	LOS B	0.4	2.7	0.05	0.01	57.3
Approach		737	0.0	0.385	0.5	NA	0.4	2.7	0.05	0.01	59.5
North: Mooney Street											
7	L2	20	0.0	0.049	8.6	LOS A	0.2	1.1	0.63	0.79	49.7
9	R2	5	0.0	0.049	19.9	LOS C	0.2	1.1	0.63	0.79	49.2
Approach		25	0.0	0.049	11.0	LOS B	0.2	1.1	0.63	0.79	49.6
West: Mowbray Road West											
10	L2	9	0.0	0.350	5.6	LOS A	0.0	0.0	0.00	0.01	58.2
11	T1	680	0.0	0.350	0.0	LOS A	0.0	0.0	0.00	0.01	59.8
Approach		689	0.0	0.350	0.1	NA	0.0	0.0	0.00	0.01	59.8
All Vehicles		1452	0.0	0.385	0.5	NA	0.4	2.7	0.04	0.02	59.4

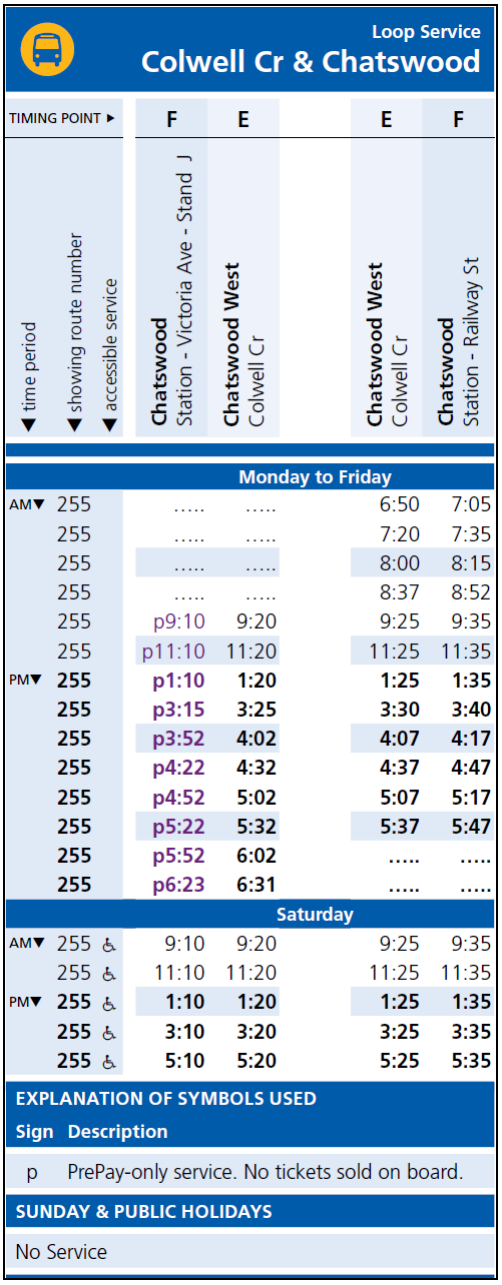
Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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.

Organisation: RAY DOWSETT T & T P PTY LTD | Processed: Thursday, 18 May 2017 12:05:08 PM
Project: C:\Users\Ray\Documents\Ray Dowsett T & T P PL\2017 Jobs\1705 128 Beaconsfield Road, Chatswood - Chatswood Golf Club\SIDRA Models - Existing Flows\Mowbray Road West & Mooney Street, Chatswood.sip7

Appendix 'D'

Bus Route 255 Map & Timetable





Loop Service

Colwell Cr & Chatswood

TIMING POINT ▸			F	E		E	F
▼ time period	▼ showing route number	▼ accessible service	**Chatswood** Station - Victoria Ave - Stand J	**Chatswood West** Colwell Cr		**Chatswood West** Colwell Cr	**Chatswood** Station - Railway St
Monday to Friday							
AM▼	255		.....	.....		6:50	7:05
	255		.....	.....		7:20	7:35
	255		.....	.....		8:00	8:15
	255		.....	.....		8:37	8:52
	255		p9:10	9:20		9:25	9:35
	255		p11:10	11:20		11:25	11:35
PM▼	**255**		**p1:10**	**1:20**		**1:25**	**1:35**
	255		**p3:15**	**3:25**		**3:30**	**3:40**
	255		**p3:52**	**4:02**		**4:07**	**4:17**
	255		**p4:22**	**4:32**		**4:37**	**4:47**
	255		**p4:52**	**5:02**		**5:07**	**5:17**
	255		**p5:22**	**5:32**		**5:37**	**5:47**
	255		**p5:52**	**6:02**		.....	.....
	255		**p6:23**	**6:31**		.....	.....
Saturday							
AM▼	255	♿	9:10	9:20		9:25	9:35
	255	♿	11:10	11:20		11:25	11:35
PM▼	**255**	♿	**1:10**	**1:20**		**1:25**	**1:35**
	255	♿	**3:10**	**3:20**		**3:25**	**3:35**
	255	♿	**5:10**	**5:20**		**5:25**	**5:35**

EXPLANATION OF SYMBOLS USED

Sign	Description
p	PrePay-only service. No tickets sold on board.

SUNDAY & PUBLIC HOLIDAYS

No Service

from Chatswood to Chatswood West

TIMING POINT ▸			F	C	D	B	A
▼ time period	▼ showing route number	▼ accessible service	**Chatswood** Station - Victoria Ave - Stand M	**Chatswood West** Bellevue St & Fullers Rd	**Chatswood West** Hawthorne Ave & Fullers Rd	**Chatswood West** Fullers Bridge	**Chatswood West** River & Fairyland Aves
Monday to Friday							
AM▼	256		p8:54	9:00	c9:05	.....	.....
	256		p10:48	10:54	c10:57	.....	.....
PM▼	**256**	♿	**p12:48**	**12:54**	**12:57**	**12:59**	**1:00**
	256		**p2:48**	**2:54**	**c2:57**	.....	.....
	256		**p3:24**	**3:30**	**3:34**	**3:36**	**3:37**
	256		**p3:52**	**3:59**	**c4:03**	.....	.....
	256		**p4:24**	**4:30**	**4:34**	**4:36**	**4:37**
	256		**p4:54**	**5:01**	**c5:05**	.....	.....
	256		**p5:24**	**5:30**	**5:34**	**5:36**	**5:37**
	256		**p5:54**	**6:01**	**c6:05**	.....	.....
	256		**p6:24**	**6:30**	**6:34**	**6:36**	**6:37**
Saturday							
AM▼	256	♿	8:48	8:54	c8:57	.....	.....
	256	♿	10:48	10:54	c10:57	.....	.....
PM▼	**256**	♿	**12:48**	**12:54**	**c12:57**	.....	.....
	256	♿	**2:48**	**2:54**	**c2:57**	.....	.....
	256	♿	**4:48**	**4:54**	**c4:57**	.....	.....

EXPLANATION OF SYMBOLS USED

Sign	Description
c	Continues to Chatswood Station via Bellevue St & Fullers Rd
p	PrePay-only service. No tickets sold on board.

SUNDAY & PUBLIC HOLIDAYS

No Service

from Chatswood West to Chatswood

TIMING POINT ▸			A	B	C	D	C	F
▼ time period	▼ showing route number	▼ accessible service	**Chatswood West** River & Fairyland Aves	**Chatswood West** Fullers Bridge	**Chatswood West** Bellevue St & Fullers Rd	**Chatswood West** Hawthorne Ave & Fullers Rd	**Chatswood West** Bellevue St & Fullers Rd	**Chatswood** Station - Railway St
Monday to Friday								
AM▼	256		.....	.....	6:50	6:55	6:59	7:05
	256		7:16	7:18	7:23	7:28	7:32	7:38
	256	♿	7:48	7:50	7:55	8:00	8:04	8:10
	256		8:27	8:29	8:34	8:39	8:43	8:49
	256		.....	.....	9:00	9:05	9:09	9:15
	256		9:23	9:25	9:30	9:33	9:35	9:41
	256		.....	.....	10:54	10:57	10:59	11:05
PM▼	**256**	♿	**1:00**	**1:02**	.....	.....	.....	**1:09**
	256		.....	.....	**2:54**	**2:57**	**2:59**	**3:06**
	256		**3:37**	**3:39**	.....	.....	.....	**3:46**
	256		.....	.....	**3:59**	**4:03**	**4:07**	**4:14**
	256		**4:37**	**4:39**	.....	.....	.....	**4:46**
	256		.....	.....	**5:01**	**5:05**	**5:09**	**5:16**
	256		**5:37**	**5:39**	.....	.....	.....	**5:46**
	256		.....	.....	**6:01**	**6:05**	**6:09**	**6:16**
	256		**6:37**	**6:39**	.....	.....	.....	**6:46**
Saturday								
AM▼	256	♿	.....	.....	8:54	8:57	8:59	9:05
	256	♿	.....	.....	10:54	10:57	10:59	11:05
PM▼	**256**	♿	.....	.....	**12:54**	**12:57**	**12:59**	**1:05**
	256	♿	.....	.....	**2:54**	**2:57**	**2:59**	**3:05**
	256	♿	.....	.....	**4:54**	**4:57**	**4:59**	**5:05**

Appendix 'E'

'SIDRA' Intersection Modelling Outputs

Mooney Street Temporary Access

Traffic Conditions

Mooney Street/Hart Street

Temporary Access Conditions AM Peak Hour

MOVEMENT SUMMARY

Site: [Mooney Street/Hart Street, Chatswood]

Existing AM Peak Hour Conditions with Mooney Street temporary access
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand 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: Mooney Street											
1	L2	4	0.0	0.039	8.1	LOS A	0.1	1.0	0.12	0.99	51.9
2	T1	31	0.0	0.039	8.0	LOS A	0.1	1.0	0.12	0.99	51.7
3	R2	8	0.0	0.039	7.9	LOS A	0.1	1.0	0.12	0.99	51.4
Approach		43	0.0	0.039	8.0	LOS A	0.1	1.0	0.12	0.99	51.6
East: Hart Street											
4	L2	6	0.0	0.016	5.6	LOS A	0.1	0.4	0.10	0.34	55.1
5	T1	12	0.0	0.016	0.1	LOS A	0.1	0.4	0.10	0.34	56.5
6	R2	12	0.0	0.016	5.6	LOS A	0.1	0.4	0.10	0.34	54.5
Approach		29	0.0	0.016	3.4	NA	0.1	0.4	0.10	0.34	55.4
North: Mooney Street											
7	L2	14	0.0	0.020	8.2	LOS A	0.1	0.5	0.13	0.94	51.9
8	T1	7	0.0	0.020	8.0	LOS A	0.1	0.5	0.13	0.94	51.6
9	R2	3	0.0	0.020	8.0	LOS A	0.1	0.5	0.13	0.94	51.4
Approach		24	0.0	0.020	8.1	LOS A	0.1	0.5	0.13	0.94	51.7
West: Hart Street											
10	L2	1	0.0	0.023	5.6	LOS A	0.0	0.1	0.01	0.04	58.0
11	T1	42	0.0	0.023	0.0	LOS A	0.0	0.1	0.01	0.04	59.6
12	R2	2	0.0	0.023	5.5	LOS A	0.0	0.1	0.01	0.04	57.4
Approach		45	0.0	0.023	0.4	NA	0.0	0.1	0.01	0.04	59.4
All Vehicles		142	0.0	0.039	4.6	NA	0.1	1.0	0.08	0.54	54.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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.

Organisation: RAY DOWSETT T & T P PTY LTD | Processed: Monday, 15 May 2017 5:19:43 PM
Project: C:\Users\Ray\Documents\Ray Dowsett T & T P PL\2017 Jobs\1705 128 Beaconsfield Road, Chatswood - Chatswood Golf Club\SIDRA Models - Mooney Street with temporary access arangements\Mooney Street & Hart Street, Chatswood - Temporary Access.sip7

Mooney Street/Hart Street

Temporary Access Conditions PM Peak Hour

MOVEMENT SUMMARY

Site: [Mooney Street/Hart Street, Chatswood]

Existing PM Peak Hour Conditions with Mooney Street temporary access
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Total veh/h	Demand 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 per veh	Average Speed km/h
South: Mooney Street											
1	L2	9	0.0	0.026	8.1	LOS A	0.1	0.6	0.11	0.96	51.9
2	T1	16	0.0	0.026	8.0	LOS A	0.1	0.6	0.11	0.96	51.6
3	R2	4	0.0	0.026	8.1	LOS A	0.1	0.6	0.11	0.96	51.4
Approach		29	0.0	0.026	8.0	LOS A	0.1	0.6	0.11	0.96	51.7
East: Hart Street											
4	L2	2	0.0	0.024	5.6	LOS A	0.1	0.6	0.07	0.26	55.9
5	T1	25	0.0	0.024	0.0	LOS A	0.1	0.6	0.07	0.26	57.4
6	R2	18	0.0	0.024	5.5	LOS A	0.1	0.6	0.07	0.26	55.4
Approach		45	0.0	0.024	2.5	NA	0.1	0.6	0.07	0.26	56.5
North: Mooney Street											
7	L2	31	0.0	0.034	8.1	LOS A	0.1	0.9	0.09	0.95	51.8
8	T1	13	0.0	0.034	8.0	LOS A	0.1	0.9	0.09	0.95	51.6
9	R2	1	0.0	0.034	8.0	LOS A	0.1	0.9	0.09	0.95	51.4
Approach		44	0.0	0.034	8.1	LOS A	0.1	0.9	0.09	0.95	51.7
West: Hart Street											
10	L2	2	0.0	0.017	5.6	LOS A	0.0	0.2	0.03	0.11	57.3
11	T1	26	0.0	0.017	0.0	LOS A	0.0	0.2	0.03	0.11	58.8
12	R2	4	0.0	0.017	5.5	LOS A	0.0	0.2	0.03	0.11	56.7
Approach		33	0.0	0.017	1.1	NA	0.0	0.2	0.03	0.11	58.5
All Vehicles		152	0.0	0.034	4.9	NA	0.1	0.9	0.08	0.57	54.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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.

Organisation: RAY DOWSETT T & T P PTY LTD | Processed: Monday, 15 May 2017 5:06:05 PM
Project: C:\Users\Ray\Documents\Ray Dowsett T & T P PL\2017 Jobs\1705 128 Beaconsfield Road, Chatswood - Chatswood Golf Club\SIDRA Models - Mooney Street with temporary access arangements\Mooney Street & Hart Street, Chatswood - Temporary Access.sip7

Mowbray Road West/Mooney Street

Temporary Access Conditions AM Peak Hour

MOVEMENT SUMMARY

Site: [Mowbray Road West/Mooney Street, Chatswood]

Existing AM Peak Hour Conditions with Mooney Street temporary access

Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Total veh/h	Demand 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 per veh	Average Speed km/h
East: Mowbray Road West											
5	T1	693	0.0	0.402	1.1	LOS A	1.1	7.7	0.15	0.03	58.4
6	R2	26	0.0	0.402	16.0	LOS C	1.1	7.7	0.15	0.03	56.3
Approach		719	0.0	0.402	1.7	NA	1.1	7.7	0.15	0.03	58.3
North: Mooney Street											
7	L2	16	0.0	0.077	10.9	LOS B	0.2	1.6	0.79	0.91	46.2
9	R2	6	0.0	0.077	30.1	LOS D	0.2	1.6	0.79	0.91	45.9
Approach		22	0.0	0.077	16.4	LOS C	0.2	1.6	0.79	0.91	46.1
West: Mowbray Road West											
10	L2	45	0.0	0.482	5.6	LOS A	0.0	0.0	0.00	0.03	58.0
11	T1	902	0.0	0.482	0.1	LOS A	0.0	0.0	0.00	0.03	59.6
Approach		947	0.0	0.482	0.3	NA	0.0	0.0	0.00	0.03	59.5
All Vehicles		1688	0.0	0.482	1.1	NA	1.1	7.7	0.07	0.04	58.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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.

Organisation: RAY DOWSETT T & T P PTY LTD | Processed: Monday, 15 May 2017 5:34:50 PM
Project: C:\Users\Ray\Documents\Ray Dowsett T & T P PL\2017 Jobs\1705 128 Beaconsfield Road, Chatswood - Chatswood Golf Club\SIDRA Models - Mooney Street with temporary access arangements\Mooney Street & Mowbray Road West - Temporary Access.sip7

Mowbray Road West/Mooney Street

Temporary Access Conditions PM Peak Hour

MOVEMENT SUMMARY

▽ Site: [Mowbray Road West/Mooney Street, Chatswood]

Existing PM Peak Hour Conditions with Mooney Street temporary access

Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand 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
East: Mowbray Road West											
5	T1	721	0.0	0.389	0.3	LOS A	0.5	3.3	0.07	0.02	59.4
6	R2	19	0.0	0.389	11.0	LOS B	0.5	3.3	0.07	0.02	57.2
Approach		740	0.0	0.389	0.6	NA	0.5	3.3	0.07	0.02	59.4
North: Mooney Street											
7	L2	27	0.0	0.083	8.7	LOS A	0.3	1.8	0.66	0.83	49.0
9	R2	11	0.0	0.083	20.3	LOS C	0.3	1.8	0.66	0.83	48.6
Approach		38	0.0	0.083	11.9	LOS B	0.3	1.8	0.66	0.83	48.9
West: Mowbray Road West											
10	L2	12	0.0	0.351	5.6	LOS A	0.0	0.0	0.00	0.01	58.2
11	T1	680	0.0	0.351	0.0	LOS A	0.0	0.0	0.00	0.01	59.8
Approach		692	0.0	0.351	0.1	NA	0.0	0.0	0.00	0.01	59.8
All Vehicles		1469	0.0	0.389	0.7	NA	0.5	3.3	0.05	0.03	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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.

Organisation: RAY DOWSETT T & T P PTY LTD | Processed: Monday, 15 May 2017 5:36:31 PM
Project: C:\Users\Ray\Documents\Ray Dowsett T & T P PL\2017 Jobs\1705 128 Beaconsfield Road, Chatswood - Chatswood Golf Club\SIDRA Models - Mooney Street with temporary access arangements\Mooney Street & Mowbray Road West - Temporary Access.sip7

Appendix 'F'

'SIDRA' Intersection Modelling Outputs

Post Development Traffic Conditions

Beaconsfield Road/Dalrymple Avenue

Post Development Conditions AM Peak Hour

MOVEMENT SUMMARY

Site: [Beaconsfield Road/Dalrymple Avenue]

Post Development AM Peak Hour Conditions
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Total veh/h	Demand 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 per veh	Average Speed km/h
SouthEast: Beaconsfield Road											
21	L2	13	0.0	0.068	5.2	LOS A	0.3	2.3	0.31	0.50	41.6
22	T1	58	0.0	0.068	4.6	LOS A	0.3	2.3	0.31	0.50	42.0
23	R2	4	0.0	0.068	7.3	LOS A	0.3	2.3	0.31	0.50	41.9
Approach		75	0.0	0.068	4.9	LOS A	0.3	2.3	0.31	0.50	42.0
NorthEast: Dalrymple Avenue											
24	L2	5	0.0	0.078	5.2	LOS A	0.4	2.8	0.32	0.53	41.4
25	T1	58	0.0	0.078	4.6	LOS A	0.4	2.8	0.32	0.53	41.9
26	R2	22	0.0	0.078	7.2	LOS A	0.4	2.8	0.32	0.53	41.7
Approach		85	0.0	0.078	5.3	LOS A	0.4	2.8	0.32	0.53	41.8
NorthWest: Beaconsfield Road											
27	L2	43	0.0	0.158	5.7	LOS A	0.8	5.9	0.42	0.61	41.0
28	T1	54	0.0	0.158	5.2	LOS A	0.8	5.9	0.42	0.61	41.5
29	R2	64	0.0	0.158	7.8	LOS A	0.8	5.9	0.42	0.61	41.4
Approach		161	0.0	0.158	6.4	LOS A	0.8	5.9	0.42	0.61	41.3
SouthWest: Dalrymple Avenue											
30	L2	33	0.0	0.201	4.9	LOS A	1.1	7.9	0.26	0.49	41.6
31	T1	195	0.0	0.201	4.3	LOS A	1.1	7.9	0.26	0.49	42.1
32	R2	20	0.0	0.201	7.0	LOS A	1.1	7.9	0.26	0.49	42.0
Approach		247	0.0	0.201	4.6	LOS A	1.1	7.9	0.26	0.49	42.1
All Vehicles		568	0.0	0.201	5.3	LOS A	1.1	7.9	0.32	0.53	41.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

Organisation: RAY DOWSETT T & T P PTY LTD | Processed: Wednesday, 28 June 2017 2:26:23 PM
Project: C:\Users\Ray\Documents\Ray Dowsett T & T P PL\2017 Completed Jobs\1705 128 Beaconsfield Road, Chatswood - Chatswood Golf Club\SIDRA Models - With Development\Beaconsfield Road & Dalrymple Avenue, Chatswood.sip7

Beaconsfield Road/Dalrymple Avenue

Post Development Conditions PM Peak Hour

MOVEMENT SUMMARY

Site: [Beaconsfield Road/Dalrymple Avenue]

Post Development PM Peak Hour Conditions
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Total veh/h	Demand 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 per veh	Average Speed km/h
SouthEast: Beaconsfield Road											
21	L2	18	0.0	0.078	5.5	LOS A	0.4	2.7	0.37	0.53	41.4
22	T1	56	0.0	0.078	4.9	LOS A	0.4	2.7	0.37	0.53	41.9
23	R2	7	0.0	0.078	7.6	LOS A	0.4	2.7	0.37	0.53	41.8
Approach		81	0.0	0.078	5.3	LOS A	0.4	2.7	0.37	0.53	41.8
NorthEast: Dalrymple Avenue											
24	L2	1	0.0	0.124	5.1	LOS A	0.6	4.5	0.30	0.53	41.4
25	T1	100	0.0	0.124	4.5	LOS A	0.6	4.5	0.30	0.53	41.9
26	R2	38	0.0	0.124	7.2	LOS A	0.6	4.5	0.30	0.53	41.8
Approach		139	0.0	0.124	5.3	LOS A	0.6	4.5	0.30	0.53	41.9
NorthWest: Beaconsfield Road											
27	L2	28	0.0	0.115	4.8	LOS A	0.6	4.2	0.23	0.54	41.3
28	T1	51	0.0	0.115	4.3	LOS A	0.6	4.2	0.23	0.54	41.8
29	R2	59	0.0	0.115	6.9	LOS A	0.6	4.2	0.23	0.54	41.7
Approach		138	0.0	0.115	5.5	LOS A	0.6	4.2	0.23	0.54	41.7
SouthWest: Dalrymple Avenue											
30	L2	48	0.0	0.102	5.0	LOS A	0.5	3.6	0.27	0.51	41.6
31	T1	58	0.0	0.102	4.4	LOS A	0.5	3.6	0.27	0.51	42.0
32	R2	11	0.0	0.102	7.1	LOS A	0.5	3.6	0.27	0.51	41.9
Approach		117	0.0	0.102	4.9	LOS A	0.5	3.6	0.27	0.51	41.8
All Vehicles		475	0.0	0.124	5.3	LOS A	0.6	4.5	0.29	0.53	41.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

Organisation: RAY DOWSETT T & T P PTY LTD | Processed: Wednesday, 28 June 2017 2:25:53 PM
Project: C:\Users\Ray\Documents\Ray Dowsett T & T P PL\2017 Completed Jobs\1705 128 Beaconsfield Road, Chatswood - Chatswood Golf Club\SIDRA Models - With Development\Beaconsfield Road & Dalrymple Avenue, Chatswood.sip7

Mowbray Road West/Beaconsfield Road/Ralston Avenue

Post Development Conditions AM Peak Hour

MOVEMENT SUMMARY

Site: 3609 [Mowbray Road West/Beaconsfield Road/Ralston Avenue]

Post Development AM Peak Conditions
Signals - Fixed Time Isolated Cycle Time = 90 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Mowbary Road West											
4a	L1	29	0.0	0.861	33.2	LOS C	34.5	241.5	0.92	0.93	39.9
5	T1	773	0.0	0.861	28.1	LOS C	34.5	241.5	0.92	0.93	40.9
6	R2	46	0.0	0.072	21.5	LOS C	1.2	8.3	0.61	0.69	43.5
Approach		848	0.0	0.861	27.9	LOS C	34.5	241.5	0.90	0.92	41.0
North: Beaconsfield Road											
7	L2	65	0.0	0.363	49.3	LOS D	2.8	19.9	0.98	0.75	32.7
Approach		65	0.0	0.363	49.3	LOS D	2.8	19.9	0.98	0.75	32.7
West: Mowbray Road West											
10	L2	34	0.0	0.763	17.9	LOS B	24.3	170.4	0.73	0.68	48.6
11	T1	789	0.0	0.763	12.3	LOS B	24.3	170.4	0.73	0.68	49.7
12b	R3	39	0.0	0.156	33.9	LOS C	1.4	9.5	0.84	0.74	37.9
Approach		862	0.0	0.763	13.5	LOS B	24.3	170.4	0.74	0.68	49.0
SouthWest: Ralston Avenue											
30b	L3	66	0.0	0.397	27.6	LOS C	3.1	21.5	0.93	0.77	41.7
32a	R1	42	0.0	0.397	25.4	LOS C	3.1	21.5	0.93	0.77	41.0
Approach		108	0.0	0.397	26.8	LOS C	3.1	21.5	0.93	0.77	41.5
All Vehicles		1884	0.0	0.861	22.0	LOS C	34.5	241.5	0.83	0.79	43.9

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

Mowbray Road West/Beaconsfield Road/Ralston Avenue

Post Development Conditions PM Peak Hour

MOVEMENT SUMMARY

Site: 3609 [Mowbray Road West/Beaconsfield Road/Ralston Avenue]

Post Development PM Peak Conditions
Signals - Fixed Time Isolated Cycle Time = 120 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Mowbary Road West											
4a	L1	34	0.0	0.882	34.1	LOS C	50.1	351.0	0.89	0.88	39.6
5	T1	907	0.0	0.882	28.9	LOS C	50.1	351.0	0.89	0.88	40.6
6	R2	41	0.0	0.053	19.2	LOS B	1.1	7.8	0.49	0.67	44.7
Approach		982	0.0	0.882	28.7	LOS C	50.1	351.0	0.87	0.87	40.7
North: Beaconsfield Road											
7	L2	67	0.0	0.400	64.0	LOS E	3.9	27.2	0.99	0.76	28.9
Approach		67	0.0	0.400	64.0	LOS E	3.9	27.2	0.99	0.76	28.9
West: Mowbray Road West											
10	L2	8	0.0	0.785	17.0	LOS B	27.0	188.9	0.62	0.57	49.3
11	T1	817	0.0	0.785	11.4	LOS B	27.0	188.9	0.62	0.57	50.5
12b	R3	77	0.0	0.382	46.8	LOS D	3.9	27.4	0.91	0.79	33.4
Approach		902	0.0	0.785	14.5	LOS B	27.0	188.9	0.64	0.59	48.3
SouthWest: Ralston Avenue											
30b	L3	72	0.0	0.498	45.5	LOS D	4.7	32.7	0.97	0.84	34.7
32a	R1	45	0.0	0.498	43.3	LOS D	4.7	32.7	0.97	0.84	34.2
Approach		117	0.0	0.498	44.6	LOS D	4.7	32.7	0.97	0.84	34.5
All Vehicles		2068	0.0	0.882	24.5	LOS C	50.1	351.0	0.78	0.74	42.6

Site Level of Service (LOS) Method: Delay (SIDRA). 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.