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TRAFFIC & TRANSPORT STUDY
REZONING PROPOSAL
STRATHFIELD GOLF COURSE
LOT 1 DP 854298
84 CENTENARY DRIVE, STRATHFIELD

Ref: 13-002

JULY 2013

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APPENDICES

1. INTRODUCTION

A Planning Proposal is to be lodged with Strathfield Council and the Department of Planning and Infrastructure for rezoning of a portion of Strathfield Golf Course comprising approximately 2.16 hectares located at No. 84 Centenary Drive, Strathfield. The proposal involves the rezone of the land from RE2 Private Recreation to B4 Mixed Use. The rezoning is primarily proposed to allow for the construction of a number of residential buildings capable of accommodating in the order of 100 dwellings, however also including some commercial floor space in the form of a clubhouse redevelopment potentially accommodating some minor hotel accommodation.

The Planning Proposal is required to incorporate, among other specialist studies, a Traffic and Transport Study. Upon completion, the Planning Proposal, including the Traffic & Transport Study, will be submitted to Council for comments and / or approval. Subsequent to Council's approval, the Proposal will be submitted to the Department of Planning and Infrastructure for comments and / or approval.

The Practice of Thompson Stanbury Associates has accordingly been engaged by Strathfield Golf Club to prepare the required Traffic & Transport Study to accompany the Planning Proposal. This report assesses and documents the potential parking, traffic and transport impacts of the development on the surrounding road network in terms of traffic efficiency and safety. Particular consideration has been given to the following specific issues:

- Likely traffic generated by the rezoning;
- The impact of this additional traffic on the existing surrounding road network;
- The extent and timing of infrastructure upgrading works (related to all road users being vehicles, pedestrians and cyclists in conjunction with public transport considerations) required within and adjoining the subject land to adequately accommodate the proposal; and
- The proposed development access arrangements and suitability with respect to existing environmental and traffic conditions.

This report should be read in conjunction with site plans prepared by De Angelis Taylor + Associates, a reduced copy of which (site plan only) is attached as **Appendix 1**.

The report has been prepared pursuant to State Environmental Planning Policy (Infrastructure) 2007.

2. SITE DETAILS

2.1 Site Location

The parcel of land subject to the proposal is located on the eastern side of Centenary Drive, approximately 200m north of Liverpool Road, Strathfield. The land extends to the east to provide an eastern frontage to Hedges Avenue. The extent and location of the land is illustrated overleaf as **Figure 1** being an extract of UBD's *Australian City Streets – Version 4*.

2.2 Site Description

Strathfield Golf Course is contained within an allotment providing a real property description of Lot 1 DP 854298 and a street address of 84 Centenary Drive, Strathfield. Strathfield Golf Course is located on both sides of Centenary Drive and has a significant frontage to Ada Avenue, Wilson Street, Yarrowee Road and Myrna Road to the north.

The part of the Golf Course subject to the proposal comprises the southern portion of the Course, accommodating an approximate area of 2.16 hectares.

2.3 Existing Use

Strathfield Golf Course comprises an 18 hole course, serviced by an existing clubhouse and passenger vehicle parking area located within the south-western corner of the site, connecting with the southbound Centenary Drive off-ramp to Liverpool Road.

The land subject to the proposal essentially comprises a practice fairway, located along the southern boundary of the Golf Course land, the car parking area, clubhouse and green keeping sheds.

2.4 Surrounding Uses

Strathfield Golf Course is currently surrounded by:

- Detached residential dwellings fronting Ada Avenue, Wilson Street, Yarrowee Road to the north and Myrna Road,, Hedges Avenue, Morgan Place and Cave Road to the east;

- Strathfield South High School and a mix of commercial / industrial Highway service type developments to the south fronting Liverpool Road; and

- Rookwood Cemetery on the western side of Centenary Drive.

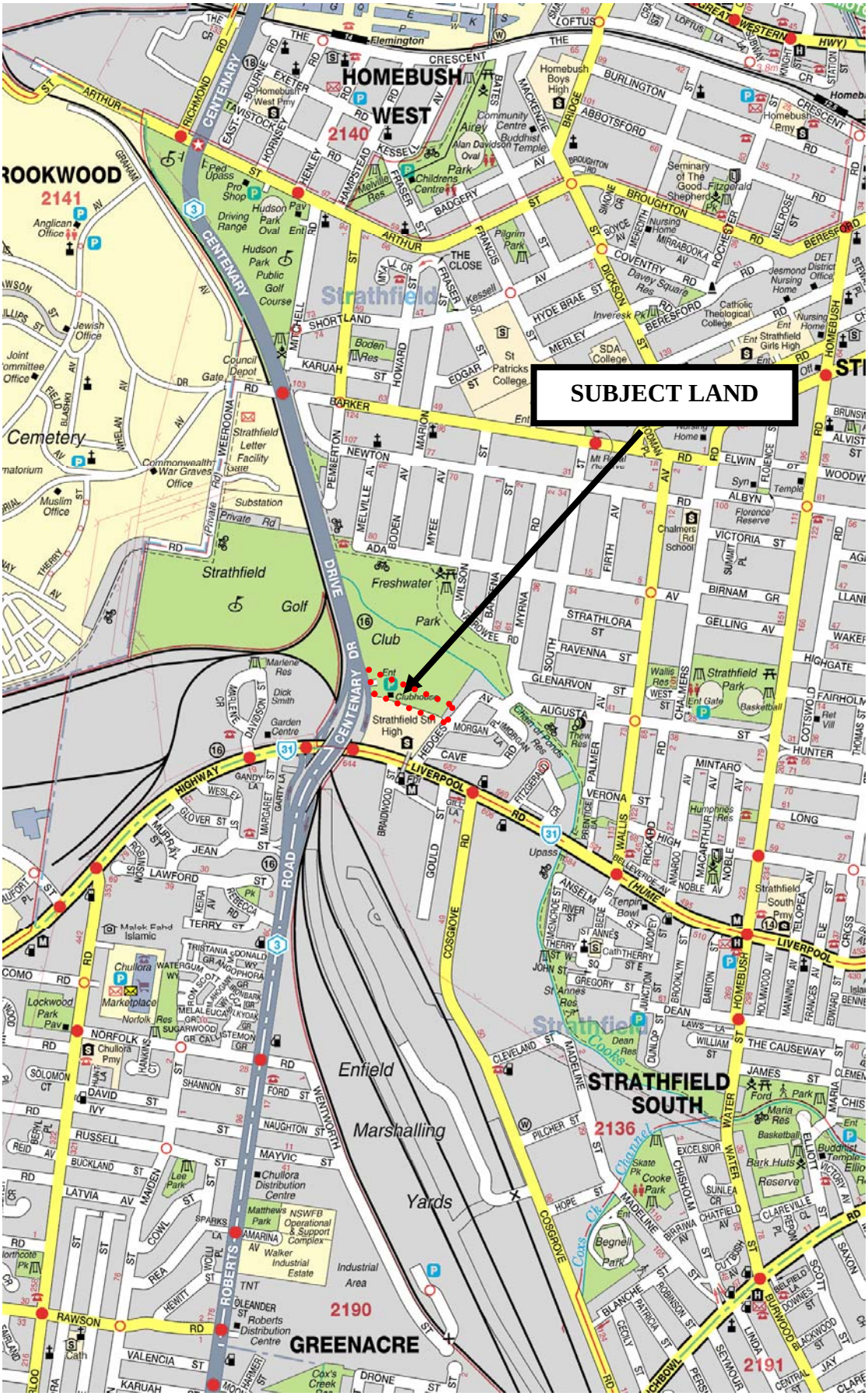


FIGURE 1 – EXTENT AND LOCATION OF SUBJECT LAND

3. PROPOSED DEVELOPMENT

3.1 Residential Subdivision

The proposal involves the rezoning of a parcel of land comprising approximately 2.16 hectares located within the southern portion of Strathfield Golf Course. The rezoning primarily proposes the provision of a series of residential apartment buildings within the portion of the course currently accommodating a practice fairway. The residential apartment buildings are proposed to accommodate approximately 100 dwellings.

The residential buildings are proposed to be serviced by a new internal access road, running along the southern Golf Course boundary. External vehicular access is proposed through a connection of the abovementioned internal access road to Hedges Avenue in the vicinity of Morgan Place. In this regard, a number of potential access options are being considered with respect to this connection to Hedges Avenue. The access is to be provided in place of one of the existing residences fronting the local road (No. 27 – 37) or over a portion of the existing Strathfield South High School Site, which currently accommodates a basketball court. In regard to the latter, included as **Appendix 2** are copies of letters prepared by the High School Principal and the Member for Strathfield supporting such an arrangement.

Further to the above, vehicular connectivity between the residential apartment buildings and the southbound Centenary Drive off ramp to Liverpool Road be facilitated by a right of carriageway being provided through the existing Golf Course car parking area and access driveway. Vehicular connectivity between the Course car parking area and the internal access road servicing the residential buildings is proposed to be governed by boom gate control or similar to ensure there is no unauthorised public or golf course related access to / from the residential development or indeed, Hedges Avenue.

Further to the residential component, the proposal involves the redevelopment of the existing Golf Course clubhouse, potentially to incorporate a minor accommodation / residential function. The clubhouse redevelopment is proposed to be serviced by the existing Golf Course car parking area and thereby accessed via the existing driveway connecting with the southbound Centenary Drive off ramp to Liverpool Road.

The extent of this redevelopment is unknown at this stage, however it is understood that it will be of minor traffic generating consequence, being primarily ancillary to the existing overall Golf Course function of the land. Any minor traffic generation associated with this component of the proposal is expected to be outside of commuter peaks of the adjoining public road network. Accordingly, this assessment provides primary focus on the traffic and transportation impacts associated with the residential component, details of which are contained within subsequent sections of this report.

4. EXISTING TRANSPORT CONDITIONS

4.1 Road Network Function and Controls

4.1.1 Regional Road Network

The Regional Road network in the vicinity of the subject site primarily accommodates Centenary Drive and Liverpool Road.

4.1.1.1 Centenary Drive

Centenary Drive forms part of the Metroad 3 Route, also comprising Homebush Bay Drive, Lane Cove Road, Ryde Road and Mona Vale Road to the north and Roberts Road and King Georges Road to the south. The route performs a State Road function under the care and control of the Roads & Maritime Services, providing a north-south arterial connection between Mona Vale in the north and Blakehurst in the south. The Metroad 3 Route provides connectivity to other important arterial routes within the greater Sydney road network including the Pacific Highway, M2 Motorway, Victoria Road, M4 Motorway, Hume Highway, M5 Motorway and Princes Highway.

Centenary Drive primarily forms a six lane divided carriageway, providing three traffic lanes in each direction. In the vicinity of the subject site, Centenary Drive provides a grade separated intersection with Liverpool Road / Hume Highway, whereby two through Centenary Drive traffic lanes in each direction are accommodated within an overbridge and on / off ramps provide connectivity to / from Liverpool Road / Hume Highway.

The southbound Centenary Drive off-ramp contains a single travel lane to the north, thence widening to accommodate a 95m long exclusive left turn deceleration lane servicing the Strathfield Golf Club access driveway. To the south of the Golf Club access driveway, the southbound off-ramp widens further from a single lane to accommodate three travel lanes on approach to Liverpool Road / Hume Highway, comprising two right turn lanes (which are governed by traffic signal control) and a left turn lane which slips into the eastbound Liverpool Road carriageway in an uncontrolled manner. Further, an uncontrolled U-turn facility is provided beneath the Centenary Drive overbridge accommodating vehicles wishing to access the northbound Centenary Drive travel lanes.

4.1.1.2 Liverpool Road

Liverpool Road forms part of the Hume Highway route. The route performs a State Road function under the care and control of the Roads & Maritime Services, providing a north-east / south-west arterial connection between Summer Hill in the north-east and Liverpool and beyond in the south-west. The Hume Highway route connects with other important arterial routes within the Sydney road network including Parramatta Road, Centenary Road / Roberts Road, Stacey Street, Woodville Road, Cumberland Highway, Elizabeth Drive, Hoxton Park Road, M5 Motorway and Camden Valley Way.

Liverpool Road primarily forms a six lane divided carriageway, providing three traffic lanes in each direction. In the immediate vicinity of the subject site, Liverpool Road forms a grade separated intersection with Centenary Drive / Roberts Road whereby three through Liverpool Road traffic lanes in each direction are accommodated below an overbridge accommodating Centenary Drive travel lanes, and on / off ramps provide connectivity between the two arterial roads, being governed by traffic signal control.

To the east of Centenary Drive, Liverpool Road forms uncontrolled T-junctions with Braidwood Street, Hedges Avenue, and Gould Street, prior to forming a signalised intersection with Cosgrove Road. Breaks in the Liverpool Road central median facilitate turning movements to / from the uncontrolled side roads. In fact, exclusive right turn lanes are provided within the eastbound Liverpool Road carriageway servicing Braidwood Street and Gould Streets. However, right turn movements to Hedges Avenue and from Gould Street are prohibited during peak commuter periods (6.00am – 10.00am and 3.00pm – 7.00pm). Further to the east, Liverpool Road forms signalised intersections with Wallis Avenue and Homebush Road, which facilitate right turn movements from the westbound carriageway to the precinct to the north of Liverpool Road.

4.1.2 Local Road Network

4.1.2.1 Hedges Avenue

The proposed residential apartment buildings are proposed to be provided with access to / from Hedges Avenue. Hedges Avenue performs a local access road under the care and control of Strathfield Council. In this regard, it provides an access function to a primarily residential precinct bounded by Liverpool Road to the south, Fitzgerald Circuit to the east, Strathfield Gold Course to the west and Chain of Ponds Canal to the north. The precinct also contains a small number of retail tenancies within Cave Road as well as Strathfield South High School located on the north-western corner of Liverpool Road and Hedges Avenue.

Further to the abovementioned local access function to the immediate precinct, Hedges Avenue provides a north-south connection to the residential precinct to the north of Chain of Ponds Canal, via Cave Road, Augusta Street and Myrna Road. In this regard, Augusta Street links with Wallis Avenue and Homebush Road to the east, which provide Collector functions to the north, linking with the Homebush West and Strathfield town centres to the north. Similarly, Myrna Road indirectly connects with Barker Road and Arthur Street, which form east-west Collector functions through the Homebush West and Strathfield precincts.

Hedges Avenue provides an 11 m wide carriageway, providing one through traffic lane in each direction, in conjunction with parallel parking along both kerb alignments. Traffic flow is governed by a sign posted speed limit of 50km/h, however a 40km/h school zone speed limit applies on approach to Liverpool Road associated with Strathfield South High School. A sign posted two tonne load limit applies to the route to discourage heavy vehicle utilisation of the route to connect with the Homebush West and Strathfield areas but also to protect the structural integrity of the

Cave Road bridge over Chain of Ponds Canal. A series of raised thresholds are provided within Hedges Avenue to provide a traffic calming function to further discourage the through use of the route.

Hedges Avenue forms T-junctions with Cave Road and Morgan Place to the north of Liverpool Road, under major / minor priority control with Hedges Avenue forming the priority route. At its northern extremity, Hedges Avenue forms a T-junction with Cave Road again, this time Cave Road forms the priority route, extending to the north over Chain of Ponds Canal.

It has previously been presented that Hedges Avenue intersects with Liverpool Road at its southern extremity, under major / minor priority control, with Liverpool Road forming the priority route. Whilst a break in the Liverpool Road central median exists, right turn movements from the State Road to Hedges Avenue are prohibited during peak commuter periods.

4.2 Existing Traffic Volumes

4.2.1 Road Link Volumes

In order to obtain an accurate indication of the existing traffic volume demands and conditions surrounding the subject site, this Practice commissioned the undertaking of peak hour traffic surveys of the Liverpool Road intersections with the southbound Centenary Drive off-ramp and Hedges Avenue, in conjunction with the number of vehicles exiting the Golf Course car parking area to the southbound Centenary Drive off-ramp to Liverpool Road. **Table 1** provides a summary of the directional morning and evening peak hour volumes within and surrounding the study area, whilst full details are attached as **Appendix 3**.

TABLE 1
EXISTING (JUNE 2013) NETWORK TRAFFIC VOLUMES

Road Link	AM Peak	PM Peak
Liverpool Road		
Eastbound	2,429	1,907
Westbound	1,858	2,099
Centenary Drive Off-Ramp		
Southbound	1,275	1,298
Hedges Avenue		
Northbound	374	125
Southbound	79	39
Golf Course Car Park		
Westbound	6	40

Table 2 indicates the following:

- Peak hour traffic demands within Liverpool Road are high commensurate with its State Road function, being approximately 2,000 – 2,500 vehicles in each direction;

- Peak hour traffic demands within the southbound Centenary Drive off-ramp to Liverpool Road are considerable, being approximately 1,200 – 1,300 vehicles;

- Hedges Avenue accommodates a notable through demand from the Liverpool Road eastbound carriageway to the Homebush West and Strathfield residential and town centre precincts, particularly during the morning peak periods, whereby approximately 375 vehicles were surveyed;

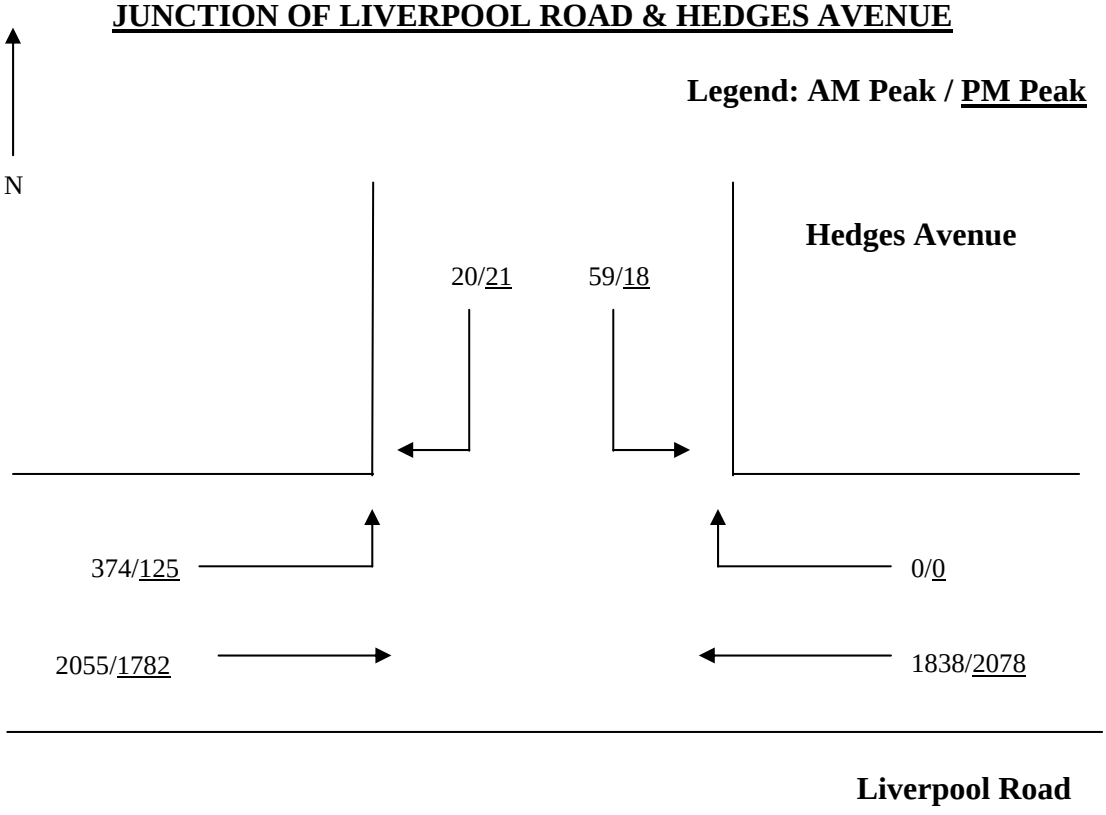
- The peak hour southbound Hedges Avenue traffic demands were surveyed to be considerably lower (being less than 100 vehicles); and

- The existing Strathfield Golf Course accommodates minor traffic demands with the maximum number of vehicles exiting the site and accessing the southbound Centenary Drive off-ramp to Liverpool Road, being 40 vehicles.

4.2.2 Primary Land Access Intersection Volumes

Following discussions with the Roads & Maritime Services, it was determined that the primary access intersection requiring analysis is the junction of Liverpool Road and Hedges Avenue. **Figure 2** below provides a graphical representation of the existing peak hour traffic volumes at the junction of Liverpool Road and Hedges Avenue, whilst full details are attached as **Appendix 3**.

FIGURE 2
JUNE 2013 WEEKDAY PEAK TRAFFIC VOLUMES
JUNCTION OF LIVERPOOL ROAD & HEDGES AVENUE



4.3 Existing Road Network Operation

4.3.1 Junction of Liverpool Road & Hedges Avenue

In order to estimate the peak efficiency of the junction of Liverpool Road and Hedges Avenue, a SIDRA analysis has been undertaken. SIDRA is an intersection analysis software package developed by the Australian Road Research Board. SIDRA is an advanced analytical tool for evaluation of alternative intersection designs. Key indicators of SIDRA include level of service, which is a summary indicator ranging from A to F, with A representing optimum intersection performance, and degree of saturation which represents a ratio of the demand of an approach to its capacity.

SIDRA uses detailed analytical traffic models coupled with an iterative approximation method to provide estimates of the abovementioned key indicators of capacity and performance statistics. Other key indicators provided by SIDRA are average vehicle delay, the number of stops per hour and the degree of saturation. Degree of saturation is the ratio of the arrival rate of vehicles to the capacity of the approach. It is a useful and professionally accepted measure of intersection performance. A value of 0.75 permits the intersection to operate in a generally satisfactory manner and provides tolerance for minor disturbances and fluctuations in the traffic conditions. For intersections controlled by a roundabout or give way or stop signs, a degree of saturation of 0.8 or less indicates satisfactory intersection operation.

SIDRA provides analysis of the operating conditions that can be compared to the performance criteria set out in **Table 2** below (adapted from the Roads & Maritime Services' *Guide to Traffic Generating Developments*).

TABLE 2
LEVELS OF SERVICE CRITERIA FOR INTERSECTION

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

The existing 2013 conditions have been modelled utilising the peak hour traffic volumes presented within **Figure 2**. **Table 3** provides a summary of the SIDRA output data whilst more detailed summaries are provided within **Appendix 4**.

TABLE 3 SIDRA OUTPUT – EXISTING 2013 INTERSECTION PERFORMANCE JUNCTION OF LIVERPOOL ROAD & HEDGES AVENUE		
	AM	**PM**
LIVERPOOL ROAD EASTERN APPROACH		
Average Delay (secs)	0.0	0.0
Degree of Saturation	0.32	0.37
Level of Service	A	A
HEDGES AVENUE APPROACH		
Average Delay (secs)	>200.0	>200.0
Degree of Saturation	1.00	1.00
Level of Service	F	F
LIVERPOOL ROAD WESTERN APPROACH		
Average Delay (secs)	1.4	0.6
Degree of Saturation	0.44	0.34
Level of Service	A	A
TOTAL INTERSECTION		
Average Delay (secs)	>200.0	>200.0
Degree of Saturation	1.00	1.00
Level of Service	F	F

Table 3 indicates that the junction of Liverpool Road and Hedges Avenue currently provides a poor level of service for vehicles exiting Hedges Avenue. The considerable through traffic demands within Liverpool Road do not, according to SIDRA, provide breaks in traffic flow to allow motorists to exit Hedges Avenue without significant delay. In fact, the SIDRA model indicates that right turn movements from Hedges Avenue to Liverpool Road are virtually impossible during peak periods.

The SIDRA model is however not capable of adequately taking into consideration the impact of traffic signal operation at Cosgrove Road and Centenary Drive to the east and west respectively on Liverpool Road through traffic movements. The operation of traffic signals at these junctions significantly punctuate through traffic movements within Liverpool Road past Hedges Avenue, thereby providing regular gaps of sufficient length to allow vehicles to exit Hedges Avenue.

In regard to the above, vehicles were observed during the undertaking of peak period surveys at the subject junction to be able to undertake a left turn movement to Liverpool Road from Hedges Avenue with only minor to moderate delay, being less than 30 seconds. Whilst it is acknowledged that right turn movements from Hedges Avenue were observed to incur additional levels of delay, the delays were not, on average, surveyed to be unreasonable, particularly during the afternoon peak. In this regard, average delays for right turn movements from Hedges Avenue were observed to be approximately 30 seconds during the evening peak period. Right turn movements were observed to incur additional delays (averaging between 60 and 90 seconds) during the morning peak period. These delays were however not observed to impact left turning traffic as the available Hedges Avenue pavement is capable of allowing a vehicle to turn left past a vehicle stopped to turn right into Liverpool Road. Further, the moderate southbound Hedges Avenue traffic demands was not observed to result in any significant vehicles queues on approach to Liverpool Road, the

maximum number of queued vehicles at any one time was observed to be four vehicles.

In consideration of the above, the overall level of service at the junction of Liverpool Road and Hedges Avenue was not observed to be unreasonable. The considerable operational demands of Liverpool Road do, at times, result in delays for vehicles wishing to exit Hedges Avenue, however these movements are assisted by the punctuated nature of Liverpool Road traffic flow.

4.3.2 Southbound Centenary Drive Off-Ramp to Liverpool Road

Peak hour surveys have indicated that the southbound Centenary Drive off-ramp to Liverpool Road accommodates considerable traffic demands during peak periods. In order to ascertain an accurate indication of the operational delays for vehicles within the off-ramp to Liverpool Road, the length of vehicle queues from the Liverpool Road traffic signals were surveyed as part of the previously presented traffic volume surveys.

The surveys indicated that vehicle queues within the southbound Centenary Drive off-ramp are generally in the order of 20 – 25 vehicles during peak commuter periods. This represents a queue length in the order of 120m – 150m back from Liverpool Road. Maximum queues in excess of 30 vehicles (representing queue lengths in excess of 180m) were only observed for short periods between 7.45am – 8.00am and 5.30pm – 5.45pm.

4.3.3 Existing Strathfield Golf Course Access Driveway

Strathfield Golf Course is currently serviced by a separated ingress / egress driveway connecting with the southbound Centenary Drive off-ramp to Liverpool Road, approximately 185m to the north of Liverpool Road. Ingress movements to the Golf Course are assisted by the provision of a 95m long deceleration lane thereby ensuring that such movements are able to be undertaken without being impacted by or impacting upon traffic flow and / or queues within Centenary Drive.

The above queuing analysis within the southbound Centenary Drive off-ramp indicates that vehicles are able to exit the Golf Course driveway without being impacted by queues extending back from Liverpool Road, with the exception of two short periods between 7.45am – 8.00am and 5.30pm – 5.45pm. During these periods, queues within the southbound Centenary Drive off-ramp were surveyed to extend past the Golf Course egress driveway, however during these periods, vehicles were observed to be able to exit the site without unreasonable delay under courtesy conditions. In this regard, the average delay experienced by vehicles exiting the Golf Course access driveway was surveyed to be less than 20 seconds.

4.4 Accident Analysis

Despite the overall operation of the junction of Liverpool Road and Hedges Avenue being observed to be satisfactory during peak periods, SIDRA modelling of the junction represents poor operational performance. It is however not uncommon for

level of service of signage controlled intersections where the main road accommodates notable through demand to represent somewhat worse conditions than that which occurs in reality. The reduced level of service is a direct factor of delays experienced by vehicles exiting the side road as a result of the considerable main road through demand.

The delays experienced by motorists exiting the side road can result in frustrated drivers taking unnecessary risks when entering the main road and therefore potentially result in the intersection accommodating a high accident rate. In this regard, it is general traffic engineering practice to undertake a review of the accident history for signage controlled intersections which are modelled to provide a poor level of service.

This Practice has accordingly obtained 5 year (2008 – 2012 inclusive) a crash history from the Roads & Maritime Service for the junction of Liverpool Road and Hedges Avenue. A total of 13 crashes were recorded at or in the immediate vicinity of the junction, as follows (full details are contained within **Appendix 5)**:

- 4 crashes involved vehicles turning right from Hedges Avenue and eastbound Liverpool Road through vehicles;
- 1 crash involved vehicles turning left from Hedges Avenue and eastbound Liverpool Road through vehicles;
- 1 crash involved a vehicle turning right from Liverpool Road and an eastbound Liverpool Road vehicle;
- 4 crashes involved rear end type collision for westbound traffic;
- 1 crash involved a rear end type collision for eastbound traffic;
- 1 crash involved a lane change type collision for eastbound traffic; and
- 1 crash involved a head on type collision within the eastbound Liverpool Road carriageway.

Five of the abovementioned crashes resulted in injury or injuries, none fatal.

Six of the crashes directly involved turning movements at the junction of Liverpool Road and Hedges Avenue, thereby being directly associated with the intersection operation. Six crashes in a five year period are not considered to result in a safety concern warranting infrastructure alteration, particularly considering that the subject junction accommodates in excess of 40,000 vehicles each day. In this regard, Roads & Maritime Services Network Operations representatives have advised this Practice that the junction will not be considered in the short to medium term for traffic signal control and that the recent implementation of a peak hour right turn restriction into Hedges Avenue is all that is considered necessary at this time, pending further evaluation.

4.5 Public Transport and Non-Car Travel

4.5.1 Train

The subject site is located approximately 2km to the south of Flemington Railway Station, 2.3km south-west of Homebush Railway Station, 2.5km south-west of Strathfield Railway Station and 4km north-west of Campsie Railway Station. Flemington, Homebush and Strathfield Railway Stations accommodate train services on the Bankstown, Inner West, South and West / North Shore lines whilst Strathfield Railway Station also accommodates services on the Main North and Airport / East Hills lines. Campsie Railway Station accommodates train services along the Bankstown line.

4.5.2 Bus

Veolia Transport operates the following routes in the immediate vicinity of the subject site:

- Route M90 between Liverpool and Burwood;
- Route 913 between Bankstown and Strathfield; and
- Route 914 between Greenacre and Strathfield.

The above routes are serviced by bus stops located on both sides of Liverpool Road between Hedges Avenue and Centenary Drive, being approximately 200m to the south of the site. Pedestrian crossing movements over Liverpool Road are assisted by a grade separated facility immediately to the west of Hedges Avenue.

Route M90 provides 10 minute services in both directions during peak commuter periods with service frequencies reducing to 15 – 20 minutes during other periods.

Route 913 provides hourly peak hour services with reduced frequencies during other periods, Monday to Friday only.

Route 914 provides hourly peak hour serviced between Monday to Friday only.

These services provide efficient connectivity between the subject site and the previously mentioned rail services, particularly from Strathfield and Burwood Stations.

In addition to the above, Sydney Buses also operate Route 483 between Strathfield to the City. This service operates along Wallis Avenue, providing 10 – 20 minute frequencies during peak commuter periods, reducing to approximately 60 minutes during non peak periods. The closest bus stops are located within Wallis Avenue to the north of Liverpool Road, being approximately 700m to the east of the site.

4.5.3 Walk / Cycle

Strathfield Golf Course immediately adjoins the Bay to Bay Cycle and Walkway, a 23km track running from Settlers Park in Ryde to Botany Bay. The walkway/cycleway provides easy access to a variety of areas in the Strathfield Municipality, notably the Cooks River in the south and Mason Park Wetlands and Homebush Bay to the north. **Figure 3** below shows the Strathfield section of the Bay to Bay Cycle and Walkway, prepared by Strathfield Council.

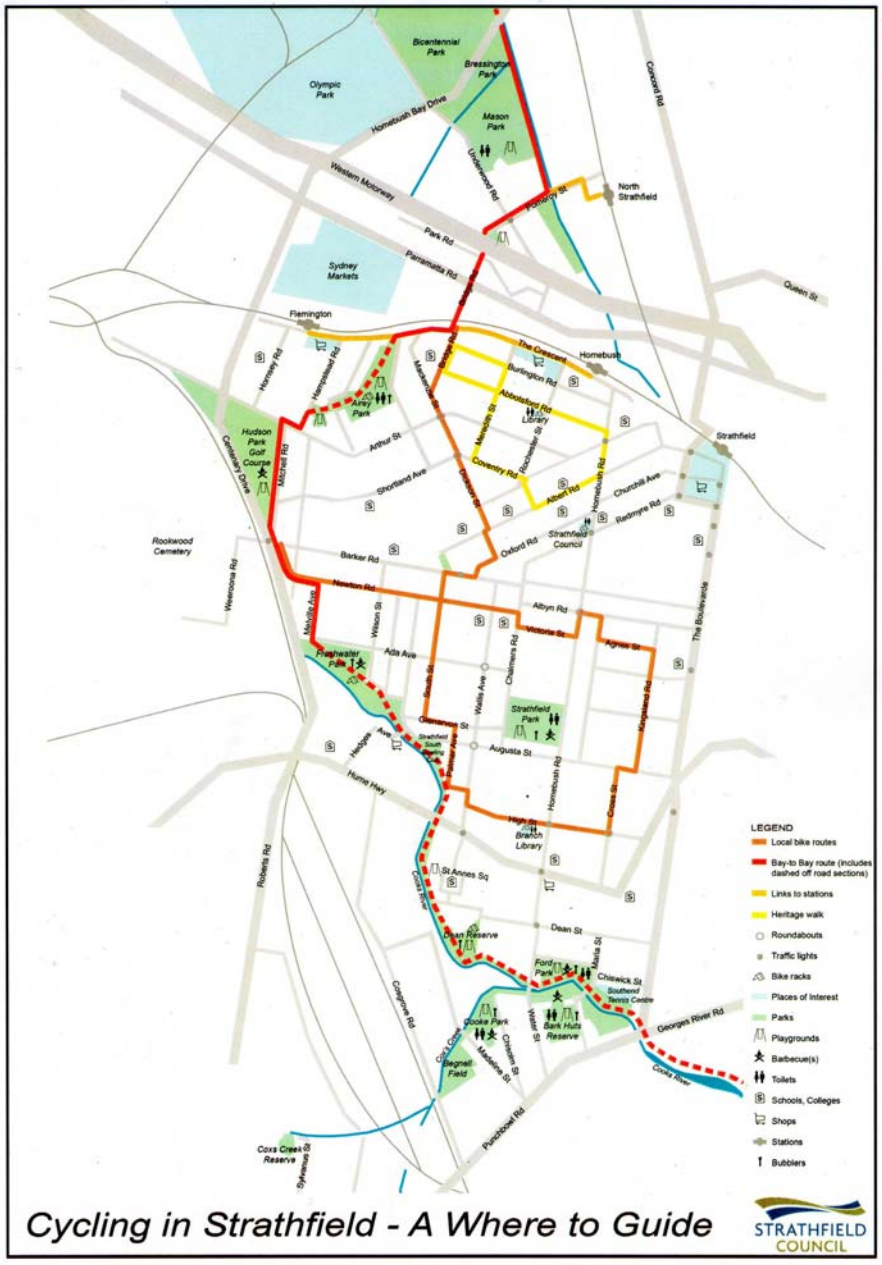


FIGURE 5 – STRATHFIELD SHARED CYCLEWAY ROUTES

5. PROJECTED TRANSPORT CONDITIONS

5.1 Traffic Generation

5.1.1 Residential Component

The residential component of the proposal is defined as a high-density residential flat building according to the Roads & Maritime Services *Guide to Traffic Generating Developments* considering each building is proposed contain more than 20 dwellings. The Roads & Maritime Services provide an indicative peak hour traffic generation rate of 0.29 trips for dwelling within their Guide for such dwellings.

The abovementioned traffic generation rate is lower than other lower density forms of development due to a number of factors. The first and most important factor is that of public transport accessibility. The accessibility of public transport in the area has a major influence on the suitability of the abovementioned Roads & Maritime Services' rates. The relatively low traffic generation rates compared to say, dwelling houses takes into account the high probability of public transport utilisation. This is considered to be a fair assumption given the proximity of the site to bus, rail and cycle infrastructure (see Section 4.5 of this report), however the development is not located within a regional or sub-regional centre, for which the Roads & Maritime Services' rates for high density residential buildings strictly applies. In consideration of this, a slightly higher traffic generation rate may be considered appropriate for the subject proposal.

The second major influence on the traffic generating characteristics of a residential development is the ratio of car ownership to tenants and the number of on-site parking spaces provided. The number of car parking spaces provided per dwelling is likely to be provided in accordance with Council's parking requirements as outlined within Part C of the *Strathfield Consolidated Development Control Plan* relating to *Multiple Unit Housing*, which specifies that approximately 60% of bedrooms should be provided with a car space. This is approximately consistent with the Roads & Maritime Services' assumptions that around 50% of residents of a high density residential apartment building would own a vehicle.

The third major influence on the traffic generating characteristics of a residential development is the age and ability of future residents. Whilst the subject development is not proposed to be defined as Seniors Living, it is likely that dwellings will be marketed to a senior retirement market with an interest in full time luxury golf course accommodation. The Roads & Maritime Services provide significantly reduced traffic generation rates for housing for an aged population, being between 0.1 and 0.2 trips per dwelling.

In consideration of the abovementioned discussion, it is considered that the Roads & Maritime Services high density residential flat building traffic generation rate of 0.29 trips per dwelling can reasonably be applied to the residential component of the development. For the purposes of simplicity, the residential component of the proposal is therefore projected to generate in the order of 30 peak hour vehicle trips.

5.1.2 Mixed Use Component

Further to the residential component, the proposal involves the redevelopment of the existing Golf Course clubhouse, potentially to incorporate a minor accommodation / residential function. The extent of this redevelopment is unknown at this stage, however it is understood that it will be of minor traffic generating consequence, being primarily ancillary to the existing overall Golf Course function of the land. Any minor traffic generation associated with this component of the proposal is expected to be outside of commuter peaks of the adjoining public road network. Accordingly, this assessment provides does not provide an assessment of the traffic and transportation impacts associated with the mixed use component.

5.2 Trip Assignment

In order to gauge the impact of the traffic projected to be generated by the proposal, it is necessary to determine the impact on surrounding route and intersection efficiency. The objective of this section is to distribute the traffic generated by the proposed development along the major approach routes before it dissipates throughout the general road network.

For the purposes of reaching the abovementioned objective, the additional trips projected to be generated by the proposed residential component has been split into two types of trips; outgoing trips and incoming trips. For the purposes of this study, it has been assumed that 80% of all residential trips during the morning peak are outgoing trips whilst the remaining 20% are incoming trips. The reverse condition is considered to apply during the evening peak.

Utilising the above theory, the proposed residential development is likely to generate some 24 outbound and 6 inbound trips during the morning peak hour and 6 outbound and 24 inbound trips during the evening peak hour.

A majority of employment generating development associated with the Sydney metropolitan area is located in areas to the east of the subject site (Strathfield, Burwood and the City). Accordingly, is considered that a large majority (60%) of vehicle trips travelling from the subject site will travel to the east. These trips are most likely to utilise Hedges Avenue to exit the site. A significant majority of these trips (40% of the total) are considered to travel to Liverpool Road, via Hedges Avenue. The remaining 20% of total are projected to travel to the north-east via Hedges Avenue, Cave Road, Augusta Street / Myrna Road and beyond.

The remaining 40% are projected to exit the site to the west via the southbound Centenary Drive off-ramp to Liverpool Road, thereby being capable of access either Centenary Drive carriageway or the westbound Hume Highway carriageway.

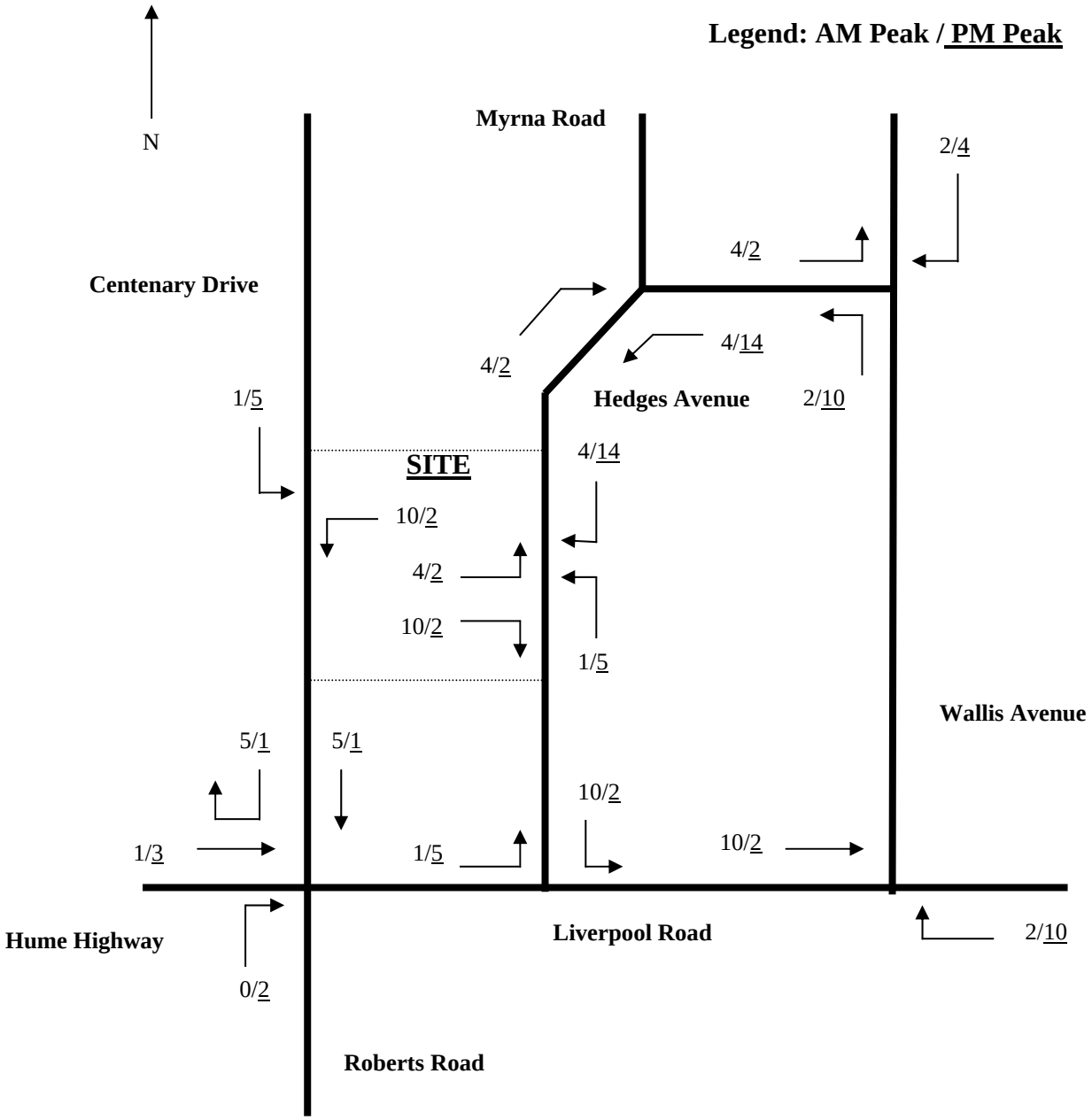
The commuter peak right turn ban from Liverpool Road into Hedges Avenue will result in vehicles approaching the site from the east, being required to utilise Wallis Avenue, Augusta Street and Cave Road to access Hedges Avenue. This is projected to account for 60% of inbound vehicle movements.

Those vehicles approaching the site from the south along Centenary Drive or west along Hume Highway (accounting for 20% of the total) are projected to also utilise Liverpool Road and thence Hedges Avenue to access the site.

Vehicles approaching the site from the north along Centenary Drive (accounting for 20% of the total) are projected to utilise the existing Golf Course access driveway connecting with the southbound off-ramp to Liverpool Road.

Figure 4 below provides a graphical representation of the peak hour trip assignment associated with the additional traffic movements projected to be generated by the residential component of the proposal.

FIGURE 4
PROJECTED PEAK HOUR TRIP ASSIGNMENT OF THE RESIDENTIAL COMPONENT OF THE SUBJECT PROPOSAL



5.2 Projected Traffic Volumes

5.2.1 Road Link Volumes

Projected traffic volumes with and without the subject proposal incorporating the previously presented trip assignment have been summarised within **Table 4**.

TABLE 4
EXISTING & PROJECTED NETWORK TRAFFIC VOLUMES

Road Link	Existing Volumes		Projected Volumes		Increase	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Liverpool Road						
Eastbound	2,429	1,907	2,439	1,912	0.5%	0.3%
Westbound	1,858	2,099	1,860	2,109	0.1%	0.5%
Centenary Drive Off-Ramp						
Southbound	1,275	1,298	1,285	1,303	0.8%	0.4%
Hedges Avenue						
Northbound	374	125	379	130	1.3%	4%
Southbound	79	39	89	53	12.7%	36%
Gold Course Car Park						
Westbound	6	40	16	42	167.7%	5%

Table 4 indicates the following:

- Increases to traffic demands within Liverpool Road and Centenary Drive are projected to insignificant, representing less than 1% of current volumes;

- Increases to traffic demands within Hedges Avenue are projected to be more significant from a percentage viewpoint, however additional directional traffic movements are envisaged to be less than 1 movement every 4 minutes; and

- Increases to the number of vehicles exiting the existing Golf Course car park access driveway to Centenary Drive are minimal despite the significant percentage increase during the morning peak, being a maximum of 1 additional vehicle every 6 minutes.

5.3 Projected Traffic Impacts

5.3.1 Hedges Avenue

Hedges Avenue currently accommodates traffic demands in excess of the normal environmental capacity of a local residential street, with traffic demands, particularly during the morning peak period being more consistent with a collector road. This is primarily due to the significant through traffic component associated with vehicles travelling from the west along Liverpool Road utilising Hedges Avenue to obtain access to the general Homebush West and Strathfield precincts to the north and north-east of the site. To a lesser extent, the additional traffic demands are generated by Strathfield South High School located to the south of the site, associated with the

transportation of students to and from the school, particularly during the morning peak.

Despite the notable through traffic demands with Hedges Avenue, motorists and the abutting community are provided with a reasonable level of service, given the existing traffic calming measures provided along the route in the form of raised thresholds.

The subject proposal is expected to generate in the order of 19 and 23 additional vehicle movements to and from Hedges Avenue during morning and afternoon peak hours. Whilst this is a notable increase in terms of percentage increase in the overall traffic demands, particularly during the afternoon peak, the maximum number of additional vehicle movements is less than 1 movement in each direction every 4 minutes. Such an additional level of traffic is not envisaged to have any noticeable impacts on the overall level of service of Hedges Avenue.

Notwithstanding the above, it is considered that the provision of a roundabout controlled intersection within Hedges Avenue at Morgan Place would provide considerable community benefit in terms of providing an additional traffic calming measure, facilitating U-turning movements associated with parent vehicles dropping students off at Strathfield South High School. The provision of the roundabout could be considered by Council as part of its assessment of the subject proposal.

The previous assessment of the operation of the junction of Liverpool Road and Hedges Avenue has indicated that the junction operates near capacity. The subject proposal is projected to result in a minor additional level of left turn movements to and from Hedges Avenue, observations of which indicate that such movements currently occur with a reasonable level of safety and efficiency. The minor level of additional demand associated with these movements (up to 1 additional movement every 6 minutes), is such that unreasonable operating conditions are not envisaged to occur as a result of the development.

5.3.2 Centenary Drive

It is projected that only minor levels of additional traffic associated with the residential component will be accommodated by the existing Strathfield Golf Course access driveway connecting with the southbound Centenary Drive off-ramp to Liverpool Road, being up to approximately 1 additional vehicle movement every 6 minutes during peak periods.

The level of additional traffic serviced by this driveway would increase in the unlikely event that it is not possible to facilitate site access to / from Hedges Avenue (should the current approval in principle to the purchase the school land be rescinded or a suitable agreement for purchase of an existing single residential allotment not be formulated). This is considered most unlikely, particularly given verbal and written advice from the school and the Local Member, and certainly not an option which will be actively pursued by the Club. However, under this situation, the maximum possible level of additional traffic accommodated by the existing site access driveway connecting with the southbound Centenary Drive off-ramp to Liverpool Road would be 1 vehicle movement every 2 minutes during peak periods.

Whilst it is further acknowledged that the Golf Clubhouse redevelopment has the potential to result in some further additional traffic demand to / from this access, this additional demand is envisaged to be minor and largely generated outside of normal commuter peak periods.

The existence of a long deceleration lane servicing the Golf Course driveway ensures that site access movements can occur without any impedance to trailing through off-ramp traffic. Further, previously presented peak hour surveys of the southbound Centenary Drive off-ramp to Liverpool Road have indicated that existing traffic demands generally do not result in any queuing which impedes access from the existing Golf Course access driveway, with the exception of short 15 minute periods during the morning and evening peak period. During most periods, vehicles are therefore projected to be able to exit the subject site with a reasonable level of safety and efficiency. During the short periods during peak times when queuing does extend past the Golf Course access driveway, vehicles have been observed to be able to exit the site without unreasonable delay under courtesy conditions. In this regard and considering the minor level of additional traffic projected to be generated by the proposal to / from the Centenary Drive off-ramp, unreasonable traffic conditions are not envisaged to result from the proposal.

6. CONCLUSION

This Practice has undertaken an assessment of the potential traffic and transport related impacts resulting from the proposed rezoning of approximately 2.16 hectares of land located within Strathfield Golf Course at 84 Centenary Drive, Strathfield. Based on this assessment, the following conclusions are provided:

- The rezoning primarily proposes the provision of a series of residential apartment buildings, capable of accommodating approximately 100 dwellings, within the portion of the course currently accommodating a practice fairway. The residential buildings are proposed to be serviced by a new internal access road, running along the southern Golf Course boundary, providing external vehicular access to / from Hedges Avenue whilst connectivity to / from the southbound Centenary Drive off ramp to Liverpool Road is also to be facilitated by a right of carriageway through the existing Golf Course car parking area and access driveway. Vehicular connectivity between the Course car parking area and the internal access road servicing the residential buildings is proposed to be governed by boom gate control or similar to ensure there is no unauthorised public or golf course related access to / from the residential development or indeed, Hedges Avenue.

- Further to the residential component, the proposal involves the redevelopment of the existing Golf Course clubhouse, potentially to incorporate a minor accommodation / residential function. The clubhouse redevelopment is proposed to be serviced by the existing Golf Course car parking area and thereby accessed via the existing driveway connecting with the southbound Centenary Drive off ramp to Liverpool Road. The extent of this redevelopment is unknown at this stage, however it is understood that it will be of minor traffic generating consequence, being primarily ancillary to the existing overall Golf Course function of the land. Any minor traffic generation associated with this component of the proposal is expected to be outside of commuter peaks of the adjoining public road network. Accordingly, this assessment provides primary focus on the traffic and transportation impacts associated with the residential component.

- Despite considerable traffic demands within Liverpool Road, motorists have been observed to be able to enter and exit Hedges Avenue, particularly via left turns, with a reasonable level of safety and efficiency. Efficient connectivity to the Hedges Avenue precinct is also facilitated by signalised intersection control at the junction of Liverpool Road and Wallis Avenue.

- The existence of a long deceleration lane servicing the existing Golf Course access driveway results in site access movements from the southbound Centenary Drive off-ramp to Liverpool Road being able to be undertaken without being impacting or being impacted by traffic flows within the off-ramp. Further, the separation of the access driveway results in vehicles being able to exit the site generally without being impacted by vehicle queues on approach to Liverpool Road.

- The residential component of the proposal is projected to generate approximately 30 additional peak hour vehicle trips to and from the site. This generation takes into consideration the proximity of the site to public transport infrastructure, the likely parking provision within the site and the likelihood that the residences will be occupied by primarily aged persons.

- A majority of the abovementioned additional traffic is projected to be assigned to / from Hedges Avenue, in preference to the southbound Centenary Drive off-ramp to Liverpool Road.

- The minor level of additional traffic is not envisaged to result in any noticeable impacts on existing road network levels of service, with road links only expected to accommodate a maximum of one additional vehicular movement every four minutes.

- The possible implementation of a roundabout controlled intersection within Hedges Avenue at Morgan Place is projected to provide considerable community benefit in terms of providing an additional traffic calming measures, facilitating U-turning movements associated with parent vehicles dropping students off at Strathfield South High School.

- Whilst it is acknowledged that the Golf Clubhouse redevelopment has the potential to result in some additional traffic demand to / from the southbound Centenary Drive this access, this additional demand is envisaged to be minor and largely generated outside of normal commuter peak periods. Accordingly, traffic impacts associated with this component are likely to be minimal. In any case, the existing Golf Course access arrangements provide for safe and efficient connectivity between the subject site and the adjoining State Road network.

In consideration of the findings of this report and abovementioned conclusions, there are no traffic or transport related reasons why the subject planning proposal should be not be supported.

APPENDIX 1

1

SURVEY & PROPOSED ZONING
1:800

1. DO NOT SCALE FROM DRAWINGS. USE WRITTEN DIMENSIONS ONLY.
2. BUILDER TO CHECK & VERIFY ALL DIMENSIONS & LEVELS PRIOR TO COMMENCEMENT OF WORK.
3. IT IS THE OWNERS RESPONSIBILITY TO ENSURE THAT THE ENGINEER HAS INVESTIGATED SUBSOIL CONDITIONS & DESIGNED ALL STRUCTURAL ELEMENTS TO SUIT.
4. THE DESIGN & DETAILS CONTAINED ON THIS DRAWING IS SUPPLIED IN CONFIDENCE & IS NOT TO BE USED FOR ANY OTHER PURPOSE, EXCEPT THAT AUTHORISED BY DEANGELIS TAYLOR AND ASSOCIATES

Issue	Amendment	Date	Drwn	Chk'd
A	PLANNING PROPOSAL ISSUED TO COUNCIL	30.6.13	DD	ST

Project North:

de angelis taylor + associates
architecture | interior design | urban design
88 bathurst street liverpool nsw 2170 australia
po box 68 liverpool bc nsw 1871 e: admin@dta.net.au
t: 61 2 9601 1011 f: 61 2 9821 2213 w: www.dta.net.au

Client: **STRATHFIELD GOLF CLUB**

Project: **PROPOSED REZONING - INDICATIVE DESIGN SCHEME**
Address: **84 CENTENARY DRIVE STRATHFIELD NSW 2135**

Dwg Name: **SURVEY / PROPOSED ZONING PLAN**
Job No. 12048
Drawing No. SK02

CAD File: Z:\2012\12048.Strathfield Golf Club\3.Design\3.2 DA\12048.DA.Strathfield Golf Club.pln

Nominated Architect:	Scale:	Date:	Drawn:	No. of sheets	Amend't
Stephen Taylor .... NSW Architects Registration Board No. 7414	As shown @ A1	FEB 13	DD	2 of 10	A

DEVELOPMENT DATA

SITE

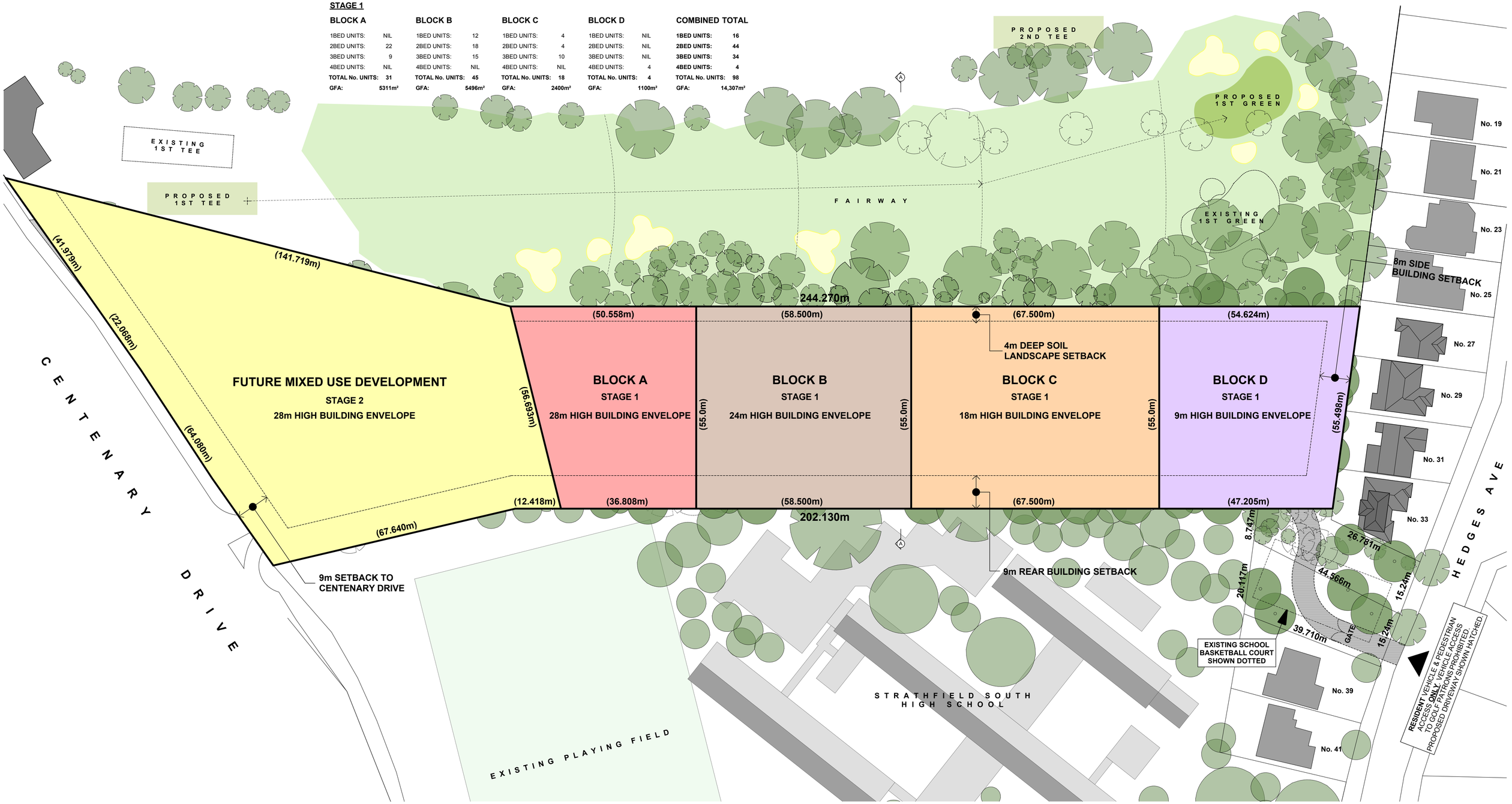
STAGE 1: GOLF COURSE FAIRWAY SITE AREA:	12,133m²
STAGE 2 GOLF CLUB HOUSE SITE AREA:	8,106m²
COMBINED SITE AREA:	**20,239m²**

FSR

STAGE 1: GOLF COURSE FAIRWAY SITE:	14,307m² / 12,133m² = 1.18:1
STAGE 2: MIXED USE DEVELOPMENT:	9,720m² / 8106m² = 1.2:1

STAGE 1

BLOCK A		BLOCK B		BLOCK C		BLOCK D		COMBINED TOTAL	
1BED UNITS:	NIL	1BED UNITS:	12	1BED UNITS:	4	1BED UNITS:	NIL	**1BED UNITS:**	**16**
2BED UNITS:	22	2BED UNITS:	18	2BED UNITS:	4	2BED UNITS:	NIL	**2BED UNITS:**	**44**
3BED UNITS:	9	3BED UNITS:	15	3BED UNITS:	10	3BED UNITS:	NIL	**3BED UNITS:**	**34**
4BED UNITS:	NIL	4BED UNITS:	NIL	4BED UNITS:	NIL	4BED UNITS:	4	**4BED UNITS:**	**4**
TOTAL No. UNITS:	**31**	**TOTAL No. UNITS:**	**45**	**TOTAL No. UNITS:**	**18**	**TOTAL No. UNITS:**	**4**	**TOTAL No. UNITS:**	**98**
GFA:	**5311m²**	**GFA:**	**5496m²**	**GFA:**	**2400m²**	**GFA:**	**1100m²**	**GFA:**	**14,307m²**



1

DEVELOPMENT STAGING PLAN
1:500

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4. THE DESIGN & DETAILS CONTAINED ON THIS DRAWING IS SUPPLIED IN CONFIDENCE & IS NOT TO BE USED FOR ANY OTHER PURPOSE, EXCEPT THAT AUTHORISED BY DEANGELIS TAYLOR AND ASSOCIATES

Issue	Amendment	Date	Drwn	Chk'd
A	PLANNING PROPOSAL ISSUED TO COUNCIL	30.6.13	DD	ST

Project North:

de angelis taylor + associates
architecture | interior design | urban design
88 bathurst street liverpool nsw 2170 australia
po box 68 liverpool bc nsw 1871 e: admin@dta.net.au
t: 61 2 9601 1011 f: 61 2 9821 2213 w: www.dta.net.au

Client:

STRATHFIELD GOLF CLUB

Project: **PROPOSED REZONING - INDICATIVE DESIGN SCHEME**
Address: **84 CENTENARY DRIVE STRATHFIELD NSW 2135**

Dwg Name: **DEVELOPMENT STAGING PLAN**
Job No. **12048**
Drawing No. **SK03**

CAD File: Z:\2012\12048.Strathfield Golf Club\3.Design\3.2 DA\12048.DA.Strathfield Golf Club.pln

Nominated Architect: Stephen Taylor NSW Architects Registration Board No. 7414
Scale: As shown @ A1
Date: FEB 13
Drawn: DD
No. of sheets: 3 of 10
Amend't: A

GROUND FLOOR PLAN
1:500

1

1. DO NOT SCALE FROM DRAWINGS. USE WRITTEN DIMENSIONS ONLY.
2. BUILDER TO CHECK & VERIFY ALL DIMENSIONS & LEVELS PRIOR TO COMMENCEMENT OF WORK.
3. IT IS THE OWNERS RESPONSIBILITY TO ENSURE THAT THE ENGINEER HAS INVESTIGATED SUBSOIL CONDITIONS & DESIGNED ALL STRUCTURAL ELEMENTS TO SUIT.
4. THE DESIGN & DETAILS CONTAINED ON THIS DRAWING IS SUPPLIED IN CONFIDENCE & IS NOT TO BE USED FOR ANY OTHER PURPOSE, EXCEPT THAT AUTHORISED BY DEANGELIS TAYLOR AND ASSOCIATES

Issue	Amendment	Date	Drwn	Chk'd
A	PLANNING PROPOSAL ISSUED TO COUNCIL	30.6.13	DD	ST

Project North:

de angelis taylor + associates
architecture | interior design | urban design
88 bathurst street liverpool nsw 2170 australia
po box 68 liverpool bc nsw 1871 e: admin@dta.net.au
t: 61 2 9601 1011 f: 61 2 9821 2213 w: www.dta.net.au

Client:

STRATHFIELD GOLF CLUB

Project: **PROPOSED REZONING - INDICATIVE DESIGN SCHEME**
Address: **84 CENTENARY DRIVE STRATHFIELD NSW 2135**

Dwg Name: **SITE / GROUND FLOOR PLAN**
Job No. **12048**
Drawing No. **SK04**

CAD File: Z:\2012\12048 Strathfield Golf Club\3 Design\3.2 DA\12048 DA Strathfield Golf Club.pln

Nominated Architect: Stephen Taylor
NSW Architects Registration Board No. 7414

Scale: As shown @ A1
Date: FEB 13
Drawn: DD
No. of sheets: 4 of 10
Amend't: A

APPENDIX 2

Strathfield South High School

Providing quality and equity of education in a caring environment

Neil Hardy,
General Manager
Strathfield Golf Club,
PO Box 586
Flemington, NSW, 2129

Dear Mr Hardy,

Thank you very much for inviting both me and Mr Paterson to the meeting held on Thursday 11 April during which we discussed your plans for the development of Strathfield Golf Club.

The designs and maps which were shown to us were very impressive and gave us great insight into the plans which your organisation has for both the club and the Strathfield South community.

I am personally very supportive of your intentions to develop the areas bordering Strathfield South High School and can see great merit in your intention to acquire some of our land to facilitate access to the proposed residential area.

I would, subject to advice from Department of Education and Communities personnel regarding any assessment and tendering processes and procedures, be interested in working with Strathfield Golf Club to bring its plans to fruition.

Yours Sincerely,

Daryl Currie
Principal
Strathfield South High School
12 April 2013

Principal: Mr D Currie
Deputy Principal: Mr S Paterson
Deputy Principal: Mr Ric Cilona

Phone: 9642 4422
Fax: 9742 5942
ABN: 21 018 011 975

PO Box 342
ENFIELD NSW 2136
Email: strathfies-h.admin@det.nsw.edu.au

Charles Casuscelli RFD MP
Member for Strathfield

www.charlescasuscelli.com.au

7th June 2013

The Hon A Piccoli
Minister for Education
Level 34 [East]
Governor Macquarie Tower
1 Farrer Place
SYDNEY NSW 2000

Part Development of Strathfield Golf Club – Residential Apartments

Dear Adrian

Strathfield Golf Club shares a common boundary with Strathfield South High School (SSHS) and is in the process of submitting a Development Application for land adjacent to the school.

The development has my support because it meets a number of NSW Government objectives, is appropriately scaled and demonstrates a sympathetic understanding of local community needs. I understand that it also has the support of Strathfield Council and the SSHS principal Mr Daryl Currie is also supportive of the project. I have been advised that the project will have benefits for the school as well as the broader local community.

The project requires the acquisition of State land that is currently used as basketball courts but that has been identified by the Department as "surplus to requirements". The principal has already engaged with the Department to progress the selling of the land but time is critical to ensure that the best outcome is achieved for the golf club, the community and the school.

I would be grateful if you would ask the Department to progress this as more than just a routine disposal and to work closely with the Golf Club. I would especially welcome a meeting between the stakeholders, including myself to get the process moving along.

Yours sincerely,

Charles

Charles Casuscelli RFD MP

Copy for Neil.

For Information:

Mr Neil Hardy, CEO Strathfield Golf Club

Phone: (02) 9747 1711 **Fax:** (02) 9747 6054 **Email:** strathfield@parliament.nsw.gov.au
Electorate Office: Shop 1, 54 Burwood Road, Burwood NSW 2134 facebook.com/CharlesCasuscelliMP

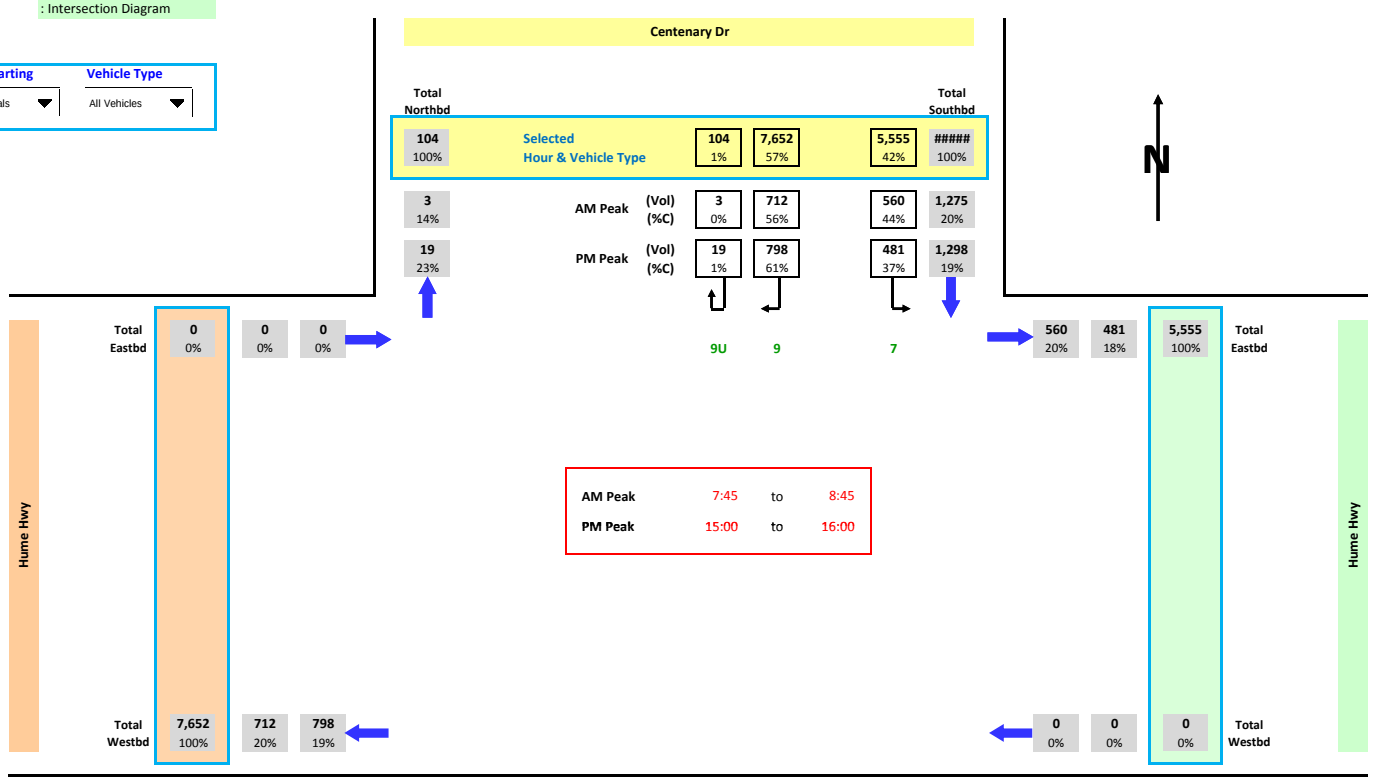
APPENDIX 3

Job No. : N1081
Client : Thompson Stanbury
Suburb : Strathfield
Location : 1. Centenary Dr Off ramp / Hume Hwy

Day/Date : Thu, 30th May 2013
Weather : Fine
Description : Classified Intersection Count
: Intersection Diagram

SKYHIGH - THE TRAFFIC SURVEY COMPANY

Hour Starting 12hr Totals
Vehicle Type All Vehicles



Client	Thompson Stanbury
Location	2. Queue length for SB traffic
Date	Thu, 30th May 2013
Survey Time	6:30-18:30
Description	on approach to the right turn to the Centenary Drive off ramp

SKYHIGH
THE TRAFFIC SURVEY COMPANY

[SB Queue]

Time Periods			SB Queue	
6:30	to	6:45	19	
6:45	to	7:00	22	
7:00	to	7:15	20	
7:15	to	7:30	19	
7:30	to	7:45	21	
7:45	to	8:00	32	* queue extends beyond this number, out of camera vie
8:00	to	8:15	21	
8:15	to	8:30	19	
8:30	to	8:45	19	
8:45	to	9:00	19	
9:00	to	9:15	20	
9:15	to	9:30	18	
9:30	to	9:45	24	
9:45	to	10:00	20	
10:00	to	10:15	17	
10:15	to	10:30	17	
10:30	to	10:45	14	
10:45	to	11:00	22	
11:00	to	11:15	18	
11:15	to	11:30	21	
11:30	to	11:45	20	
11:45	to	12:00	17	
12:00	to	12:15	21	
12:15	to	12:30	17	
12:30	to	12:45	20	
12:45	to	13:00	17	
13:00	to	13:15	19	
13:15	to	13:30	22	
13:30	to	13:45	24	
13:45	to	14:00	17	
14:00	to	14:15	19	
14:15	to	14:30	17	
14:30	to	14:45	19	
14:45	to	15:00	22	
15:00	to	15:15	20	
15:15	to	15:30	24	
15:30	to	15:45	25	
15:45	to	16:00	25	
16:00	to	16:15	22	
16:15	to	16:30	25	
16:30	to	16:45	22	
16:45	to	17:00	14	
17:00	to	17:15	24	
17:15	to	17:30	22	
17:30	to	17:45	32	* queue extends beyond this number, out of camera vie
17:45	to	18:00	21	
18:00	to	18:15	21	
18:15	to	18:30	22	

[Golf Club Out]

Start time	End time	Waiting Time	Vehicle Type
7:03:20	7:03:28	0:00:08	Truck
8:28:52	8:28:54	0:00:02	Car
9:11:09	9:11:17	0:00:08	Motorbike
9:11:57	9:12:44	0:00:47	Car
9:22:56	9:22:58	0:00:02	Car
9:23:34	9:23:47	0:00:13	Truck
9:39:31	9:39:57	0:00:26	Car
9:54:40	9:54:52	0:00:12	Car
10:18:23	10:18:26	0:00:03	Car
10:24:20	10:24:48	0:00:28	Car
10:24:22	10:24:49	0:00:27	Car
10:29:15	10:29:30	0:00:15	Car
10:30:17	10:30:20	0:00:03	Car
10:30:29	10:30:37	0:00:08	Car
10:33:54	10:34:03	0:00:09	Car
10:38:53	10:39:01	0:00:08	Truck
10:38:55	10:39:01	0:00:06	Car
10:42:55	10:43:07	0:00:12	Car
10:46:57	10:47:02	0:00:05	Car
10:55:16	10:55:27	0:00:11	Car
10:56:51	10:57:17	0:00:26	Car
11:00:40	11:00:51	0:00:11	Car
11:11:45	11:11:47	0:00:02	Car
11:13:07	11:13:23	0:00:16	Car
11:13:24	11:13:29	0:00:05	Car
11:15:59	11:16:04	0:00:05	Car
11:20:56	11:21:03	0:00:07	Car
11:23:54	11:23:57	0:00:03	Car
11:26:24	11:26:28	0:00:04	Car
11:33:13	11:33:19	0:00:06	Car
11:33:31	11:33:50	0:00:19	Car
11:33:59	11:34:08	0:00:09	Car
11:34:25	11:34:35	0:00:10	Car
11:51:45	11:51:51	0:00:06	Truck
11:54:42	11:54:47	0:00:05	Car
12:16:26	12:16:51	0:00:25	Car
12:18:59	12:19:04	0:00:05	Car
12:22:31	12:22:35	0:00:04	Car
12:24:31	12:24:34	0:00:03	Car
12:27:35	12:27:38	0:00:03	Car
12:30:49	12:31:27	0:00:38	Car
12:36:47	12:36:52	0:00:05	Car
12:40:17	12:40:27	0:00:10	Car
12:43:27	12:43:31	0:00:04	Car
12:46:39	12:46:44	0:00:05	Car
12:46:43	12:46:46	0:00:03	Car
12:55:47	12:55:57	0:00:10	Car

12:56:25	12:56:27	0:00:02	Car
13:00:07	13:00:11	0:00:04	Car
13:21:22	13:21:25	0:00:03	Car
13:22:42	13:22:50	0:00:08	Car
13:22:42	13:22:51	0:00:09	Car
13:22:57	13:23:01	0:00:04	Car
13:23:21	13:23:25	0:00:04	Car
13:23:31	13:23:49	0:00:18	Car
13:23:36	13:24:01	0:00:25	Car
13:25:05	13:25:09	0:00:04	Car
13:25:36	13:25:39	0:00:03	Car
13:26:33	13:26:38	0:00:05	Car
13:27:20	13:28:43	0:01:23	Car
13:27:34	13:28:46	0:01:12	Car
13:28:31	13:29:13	0:00:42	Car
13:28:49	13:29:18	0:00:29	Car
13:28:51	13:29:19	0:00:28	Car
13:35:26	13:35:32	0:00:06	Car
13:43:30	13:43:45	0:00:15	Car
13:47:27	13:47:30	0:00:03	Car
13:47:41	13:47:43	0:00:02	Car
13:51:39	13:51:45	0:00:06	Car
13:52:05	13:52:24	0:00:19	Car
13:52:31	13:52:36	0:00:05	Car
13:53:53	13:53:57	0:00:04	Car
13:54:48	13:54:53	0:00:05	Car
14:00:54	14:01:26	0:00:32	Car
14:01:29	14:01:36	0:00:07	Car
14:02:54	14:03:45	0:00:51	Car
14:04:53	14:04:57	0:00:04	Car
14:05:15	14:05:50	0:00:35	Car
14:09:25	14:09:57	0:00:32	Car
14:10:46	14:10:50	0:00:04	Car
14:11:58	14:12:55	0:00:57	Car
14:17:20	14:17:27	0:00:07	Car
14:17:59	14:18:02	0:00:03	Car
14:19:08	14:19:29	0:00:21	Car
14:22:18	14:22:22	0:00:04	Car
14:24:37	14:24:53	0:00:16	Car
14:26:02	14:26:15	0:00:13	Car
14:26:47	14:26:51	0:00:04	Car
14:28:00	14:28:29	0:00:29	Car
14:32:24	14:32:53	0:00:29	Car
14:32:36	14:33:09	0:00:33	Car
14:33:41	14:33:53	0:00:12	Car
14:34:39	14:34:55	0:00:16	Car
14:38:47	14:38:51	0:00:04	Car
14:42:02	14:42:11	0:00:09	Car
14:42:24	14:42:30	0:00:06	Car
14:42:36	14:42:40	0:00:04	Car
14:44:30	14:44:56	0:00:26	Car

14:45:31	14:45:36	0:00:05	Car
14:46:21	14:46:51	0:00:30	Car
14:46:50	14:47:30	0:00:40	Car
14:46:17	14:47:39	0:01:22	Car
14:48:19	14:48:26	0:00:07	Car
14:49:52	14:49:58	0:00:06	Car
14:50:52	14:50:54	0:00:02	Car
14:51:00	14:51:06	0:00:06	Car
14:52:23	14:52:35	0:00:12	Car
14:52:48	14:52:53	0:00:05	Car
14:57:06	14:57:10	0:00:04	Car
14:57:58	14:58:02	0:00:04	Car
14:58:09	14:58:48	0:00:39	Car
14:59:55	14:59:59	0:00:04	Car
15:02:01	15:02:15	0:00:14	Car
15:02:49	15:03:18	0:00:29	Car
15:05:44	15:06:04	0:00:20	Car
15:05:52	15:06:50	0:00:58	Car
15:06:44	15:06:52	0:00:08	Car
15:10:47	15:10:56	0:00:09	Car
15:10:49	15:11:33	0:00:44	Car
15:10:56	15:11:36	0:00:40	Car
15:11:34	15:11:40	0:00:06	Car
15:11:58	15:12:03	0:00:05	Car
15:14:18	15:14:22	0:00:04	Car
15:15:23	15:15:44	0:00:21	Car
15:17:14	15:17:17	0:00:03	Car
15:20:15	15:20:42	0:00:27	Car
15:20:50	15:21:41	0:00:51	Car
15:21:28	15:21:51	0:00:23	Car
15:21:45	15:21:53	0:00:08	Car
15:24:17	15:24:27	0:00:10	Car
15:26:25	15:26:51	0:00:26	Car
15:29:46	15:29:50	0:00:04	Car
15:31:35	15:31:56	0:00:21	Car
15:31:43	15:32:00	0:00:17	Car
15:32:00	15:32:03	0:00:03	Car
15:32:03	15:32:07	0:00:04	Car
15:33:01	15:33:12	0:00:11	Car
15:33:47	15:33:55	0:00:08	Car
15:34:32	15:34:53	0:00:21	Car
15:38:28	15:39:29	0:01:01	Car
15:38:30	15:39:35	0:01:05	Car
15:38:40	15:39:43	0:01:03	Car
15:45:21	15:46:17	0:00:56	Car
15:45:33	15:46:54	0:01:21	Car
15:47:13	15:47:21	0:00:08	Car
15:50:02	15:50:05	0:00:03	Car
15:50:10	15:50:35	0:00:25	Car
15:50:42	15:51:21	0:00:39	Car
15:50:59	15:51:29	0:00:30	Car

15:52:01	15:52:29	0:00:28	Car
15:54:53	15:55:01	0:00:08	Car
15:57:29	15:58:09	0:00:40	Car
16:00:34	16:00:39	0:00:05	Car
16:00:58	16:01:47	0:00:49	Car
16:01:43	16:01:53	0:00:10	Car
16:03:57	16:04:01	0:00:04	Car
16:05:35	16:05:42	0:00:07	Car
16:05:47	16:06:40	0:00:53	Car
16:06:56	16:07:03	0:00:07	Car
16:07:42	16:07:55	0:00:13	Car
16:09:10	16:09:13	0:00:03	Car
16:13:53	16:13:58	0:00:05	Car
16:14:37	16:14:43	0:00:06	Car
16:15:33	16:15:45	0:00:12	Car
16:18:00	16:18:25	0:00:25	Car
16:18:26	16:19:09	0:00:43	Car
16:18:30	16:19:10	0:00:40	Car
16:19:44	16:19:48	0:00:04	Car
16:23:34	16:23:49	0:00:15	Car
16:27:52	16:28:48	0:00:56	Car
16:31:12	16:31:21	0:00:09	Car
16:33:11	16:33:15	0:00:04	Car
16:38:46	16:38:53	0:00:07	Car
16:40:35	16:40:39	0:00:04	Car
16:41:34	16:41:47	0:00:13	Car
16:46:33	16:46:53	0:00:20	Car
16:50:15	16:50:33	0:00:18	Car
16:56:50	16:56:55	0:00:05	Car
16:58:11	16:58:27	0:00:16	Car
16:58:52	16:59:01	0:00:09	Car
17:01:03	17:01:51	0:00:48	Car
17:03:19	17:04:17	0:00:58	Car
17:03:35	17:04:23	0:00:48	Car
17:04:03	17:04:25	0:00:22	Car
17:04:22	17:04:28	0:00:06	Car
17:05:38	17:06:11	0:00:33	Car
17:05:51	17:06:42	0:00:51	Car
17:08:10	17:08:46	0:00:36	Car
17:10:41	17:11:03	0:00:22	Car
17:10:47	17:11:30	0:00:43	Car
17:12:46	17:12:50	0:00:04	Car
17:17:14	17:17:16	0:00:02	Car
17:18:41	17:19:00	0:00:19	Car
17:21:11	17:21:15	0:00:04	Car
17:21:31	17:21:54	0:00:23	Car
17:21:59	17:22:02	0:00:03	Car
17:22:35	17:22:43	0:00:08	Car
17:23:52	17:25:06	0:01:14	Car
17:23:57	17:25:34	0:01:37	Car
17:24:17	17:25:40	0:01:23	Car

17:25:30	17:25:44	0:00:14	Car
17:26:12	17:26:55	0:00:43	Car
17:27:18	17:27:21	0:00:03	Car
17:27:27	17:27:35	0:00:08	Car
17:29:01	17:29:19	0:00:18	Car
17:29:38	17:29:42	0:00:04	Car
17:31:47	17:32:15	0:00:28	Car
17:31:51	17:32:28	0:00:37	Car
17:33:18	17:34:29	0:01:11	Car
17:33:57	17:34:36	0:00:39	Car
17:34:30	17:34:44	0:00:14	Car
17:34:48	17:34:50	0:00:02	Car
17:38:23	17:38:38	0:00:15	Car
17:38:32	17:40:06	0:01:34	Car
17:39:26	17:40:13	0:00:47	Car
17:40:17	17:40:31	0:00:14	Car
17:42:33	17:42:43	0:00:10	Car
17:45:35	17:45:41	0:00:06	Car
Avg. waiting time		**0:00:19**	

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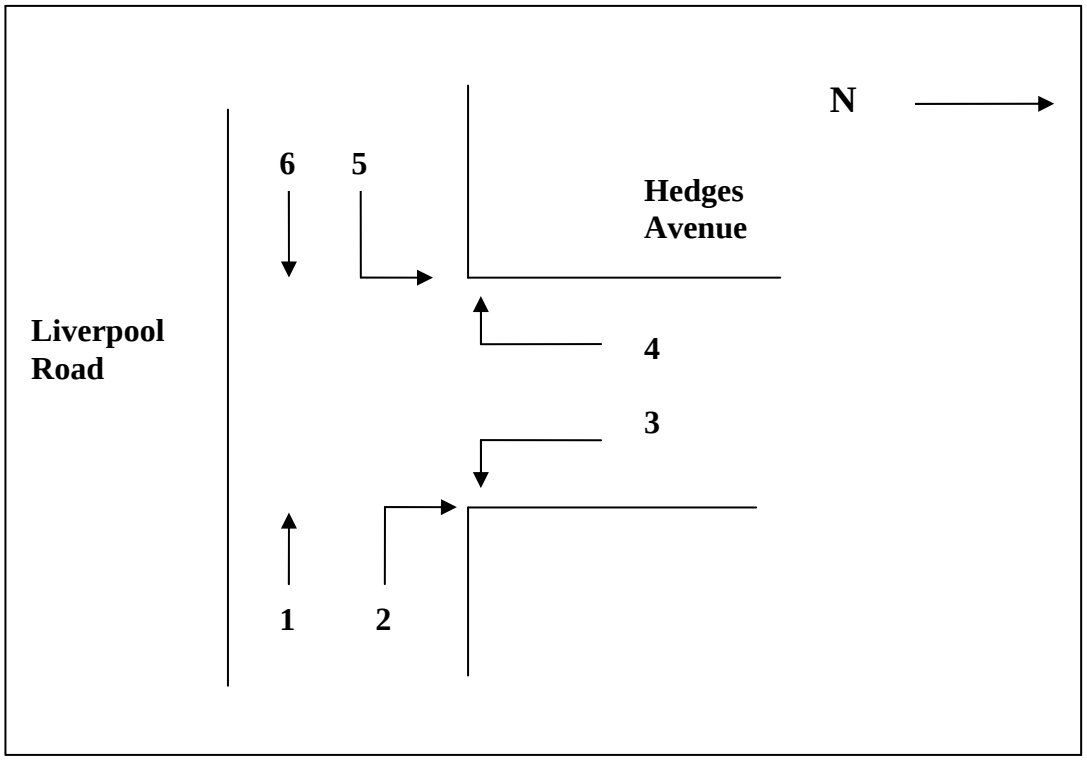
THOMPSON STANBURY ASSOCIATES

ABN: 79 943 737 368

TRAFFIC COUNTS AT: **Liverpool Road & Hedges Avenue, Strathfield**
DATE: **20 June 2013**
TIME: **AM 8.00-9.00 PM 5.00-6.00**
WEATHER: **Overcast**

Time	Direction of Vehicular Traffic					
	1	**2**	**3**	**4**	**5**	**6**
8.00 – 8.15am	449	0	11	3	72	577
8.15 – 8.30am	451	0	11	7	99	501
8.30 – 8.45am	475	0	15	6	111	478
8.45 – 9.00am	463	0	22	4	92	499
TOTAL	**1838**	**0**	**59**	**20**	**374**	**2055**
5.00 – 5.15pm	510	0	2	3	29	433
5.15 – 5.30pm	516	0	6	7	26	444
5.30 – 5.45pm	530	0	5	3	36	454
5.45 – 6.00pm	522	0	5	8	34	451
TOTAL	**2078**	**0**	**18**	**21**	**125**	**1782**



APPENDIX 4

Movement Summary

akcelik & associates
aaTraffic SIDRA

LIVERPOOL ROAD & HEDGES AVENUE

Two-way stop

Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	Cap (veh/h)	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Eff. Stop Rate	Aver Speed (km/h)	Oper Cost ($/h)
LIVERPOOL ROAD EAST										
5	T	1838	5666	0.324	0.0	LOS A	0	0.00	60.0	500
Approach		**1838**	**5666**	**0.324**	**0.0**	**LOS A**		**0.00**	**60.0**	**500**
HEDGES AVENUE										
7	L	59	59	1.000	249.1	LOS F	75	1.00	7.5	110
9	R	20	20	1.000	189884.3	LOS F	18506	1.00	0.0	23659
Approach		**79**	**79**	**1.000**	**48258.0**	**LOS F**	**18506**	**1.00**	**0.0**	**23769**
LIVERPOOL ROAD WEST										
10	L	374	845	0.443	9.2	LOS A	0	0.70	48.0	135
11	T	2055	4644	0.443	0.0	LOS A	0	0.00	60.0	559
Approach		**2429**	**5489**	**0.443**	**1.4**	**LOS A**		**0.11**	**57.8**	**694**
All Vehicles		**4346**	**11234**	**1.000**	**878.0**	**LOS F**	**18506**	**0.08**	**2.4**	**24963**

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Movement Summary

akcelik & associates
aaTraffic SIDRA

LIVERPOOL ROAD & HEDGES AVENUE

Two-way stop

Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	Cap (veh/h)	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Eff. Stop Rate	Aver Speed (km/h)	Oper Cost ($/h)
LIVERPOOL ROAD EAST										
5	T	2078	5666	0.367	0.0	LOS A	0	0.00	60.0	565
Approach		**2078**	**5666**	**0.367**	**0.0**	**LOS A**		**0.00**	**60.0**	**565**
HEDGES AVENUE										
7	L	18	43	0.419	132.7	LOS F	12	1.04	12.5	21
9	R	21	21	1.000	88970.4	LOS F	8969	1.01	0.0	11643
Approach		**39**	**64**	**1.000**	**47968.4**	**LOS F**	**8969**	**1.02**	**0.0**	**11664**
LIVERPOOL ROAD WEST										
10	L	125	366	0.342	9.2	LOS A	0	0.70	48.0	45
11	T	1782	5224	0.341	0.0	LOS A	0	0.00	60.0	485
Approach		**1907**	**5590**	**0.341**	**0.6**	**LOS A**		**0.05**	**59.0**	**530**
All Vehicles		**4024**	**11320**	**1.000**	**465.2**	**LOS F**	**8969**	**0.03**	**4.4**	**12759**

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APPENDIX 5

Summary Crash Report

Transport Centre for Road Safety

# Crash Type		
Car Crash	13	100.0%
Light Truck Crash	2	15.4%
Rigid Truck Crash	0	0.0%
Articulated Truck Crash	0	0.0%
'Heavy Truck Crash	(0)	(0.0%)
Bus Crash	0	0.0%
"Heavy Vehicle Crash	(0)	(0.0%)
Emergency Vehicle Crash	0	0.0%
Motorcycle Crash	0	0.0%
Pedal Cycle Crash	0	0.0%
Pedestrian Crash	0	0.0%

' Rigid or Artic. Truck " Heavy Truck or Heavy Bus
These categories are NOT mutually exclusive

Location Type		
*Intersection	13	100.0%
Non intersection	0	0.0%

* Up to 10 metres from an intersection
~ 07:30-09:30 or 14:30-17:00 on school days

Collision Type		
Single Vehicle	0	0.0%
Multi Vehicle	13	100.0%

Road Classification		
Freeway/Motorway	0	0.0%
State Highway	13	100.0%
Other Classified Road	0	0.0%
Unclassified Road	0	0.0%

Contributing Factors		
Speeding	0	0.0%
Fatigue	0	0.0%

Weather		
Fine	10	76.9%
Rain	2	15.4%
Overcast	1	7.7%
Fog or mist	0	0.0%
Other	0	0.0%

Road Surface Condition		
Wet	3	23.1%
Dry	10	76.9%
Snow or ice	0	0.0%

Natural Lighting		
Dawn	0	0.0%
Daylight	7	53.8%
Dusk	1	7.7%
Darkness	5	38.5%

Crash Movement		
Intersection, adjacent approaches	5	38.5%
Head-on (not overtaking)	1	7.7%
Opposing vehicles; turning	1	7.7%
U-turn	0	0.0%
Rear-end	5	38.5%
Lane change	1	7.7%
Parallel lanes; turning	0	0.0%
Vehicle leaving driveway	0	0.0%
Overtaking; same direction	0	0.0%
Hit parked vehicle	0	0.0%
Hit railway train	0	0.0%
Hit pedestrian	0	0.0%
Permanent obstruction on road	0	0.0%
Hit animal	0	0.0%
Off road, on straight	0	0.0%
Off road on straight, hit object	0	0.0%
Out of control on straight	0	0.0%
Off road, on curve	0	0.0%
Off road on curve, hit object	0	0.0%
Out of control on curve	0	0.0%
Other crash type	0	0.0%

Speed Limit					
40 km/h or less	1	7.7%	80 km/h zone	1	7.7%
50 km/h zone	0	0.0%	90 km/h zone	0	0.0%
60 km/h zone	9	69.2%	100 km/h zone	0	0.0%
70 km/h zone	2	15.4%	110 km/h zone	0	0.0%
~ 40km/h or less	1	50.0%			

CRASHES	13	
Fatal crash	0	0.0%
Injury crash	5	38.5%
Non-casualty crash	8	61.5%

^ Belt fitted but not worn, No restraint fitted to position OR No helmet worn

Time Group		% of Day	
00:01 - 02:59	0	0.0%	12.5%
03:00 - 04:59	0	0.0%	8.3%
05:00 - 05:59	0	0.0%	4.2%
06:00 - 06:59	0	0.0%	4.2%
07:00 - 07:59	1	7.7%	4.2%
08:00 - 08:59	1	7.7%	4.2%
09:00 - 09:59	0	0.0%	4.2%
10:00 - 10:59	1	7.7%	4.2%
11:00 - 11:59	0	0.0%	4.2%
12:00 - 12:59	1	7.7%	4.2%
13:00 - 13:59	1	7.7%	4.2%
14:00 - 14:59	0	0.0%	4.2%
15:00 - 15:59	1	7.7%	4.2%
16:00 - 16:59	0	0.0%	4.2%
17:00 - 17:59	1	7.7%	4.2%
18:00 - 18:59	1	7.7%	4.2%
19:00 - 19:59	1	7.7%	4.2%
20:00 - 21:59	4	30.8%	8.3%
22:00 - 24:00	0	0.0%	8.3%

Street Lighting Off/Nil	% of Dark
0 of 5 in Dark	0.0%

CASUALTIES	7	
Killed	0	0.0%
Injured	7	100.0%
^ Unrestrained	0	0.0%

Crashes		Casualties
3	2012	4
1	2011	1
3	2010	1
4	2009	1
2	2008	0

~ School Travel Time		
Involvement	2	15.4%

McLean Periods			% Week
A	2	15.4%	17.9%
B	0	0.0%	7.1%
C	1	7.7%	17.9%
D	1	7.7%	3.5%
E	1	7.7%	3.6%
F	3	23.1%	10.7%
G	1	7.7%	7.1%
H	2	15.4%	7.1%
I	0	0.0%	12.5%
J	2	15.4%	10.7%

Day of the Week								
Monday	2	15.4%	Thursday	3	23.1%	Sunday	1	7.7%
Tuesday	0	0.0%	Friday	0	0.0%	WEEKDAY	8	61.5%
Wednesday	3	23.1%	Saturday	4	30.8%	WEEKEND	5	38.5%

# Holiday Periods								
New Year	0	0.0%	Queen's BD	0	0.0%	Easter SH	1	7.7%
Aust. Day	0	0.0%	Labour Day	1	7.7%	June/July SH	1	7.7%
Easter	1	7.7%	Christmas	0	0.0%	Sept./Oct. SH	1	7.7%
Anzac Day	0	0.0%	January SH	1	7.7%	December SH	0	0.0%

Crashid dataset Liverpool Road and Hedges Avenue, South Strathfield
Note: Data for the 9 month period prior to the generated date of this report are incomplete and are subject to change.

Percentages are percentages of all crashes. Unknown values for each category are not shown on this report.

Detailed Crash Report

Transport Centre for Road Safety

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
Sydney Region																					
Strathfield LGA																					
South Strathfi																					
Hume Hwy																					
651851	07/01/2009	Wed	12:00		at	HEDGES AVE	TJN	STR	Fine	Dry	60	4	TRK	F19	E in HUME HWY	50 Proceeding in lane		N	0	0	
E36432143							RUM:	30	Rear end				CAR	M77	E in HUME HWY	Unk Proceeding in lane					
													CAR	F U	E in HUME HWY	Unk Proceeding in lane					
													CAR	M55	E in HUME HWY	60 Proceeding in lane					
687252	29/10/2009	Thu	08:46		at	HEDGES AVE	TJN	STR	Fine	Dry	60	2	CAR	F35	S in HEDGES AVE	Unk Turning left		N	0	0	
E39382651							RUM:	16	Left near				CAR	M63	E in HUME HWY	40 Proceeding in lane					
710724	08/05/2010	Sat	17:30	10 m	E	HEDGES AVE	TJN	STR	Fine	Dry	70	2	CAR	M20	W in HUME HWY	50 Proceeding in lane		N	0	0	
E40575835							RUM:	30	Rear end				CAR	M61	W in HUME HWY	10 Proceeding in lane					
Strathfield																					
Hume Hwy																					
631988	12/07/2008	Sat	21:00		at	HEDGES AVE	TJN	STR	Fine	Dry	60	2	VAN	M31	W in HUME HWY	20 Turning right		N	0	0	
E34022337							RUM:	21	Right through				CAR	M17	E in HUME HWY	55 Proceeding in lane					
682978	02/09/2009	Wed	19:20		at	HEDGES AVE	TJN	STR	Fine	Dry	70	2	CAR	F49	S in HEDGES AVE	10 Turning right		I	0	1	
E38547212							RUM:	13	Right near				CAR	M25	E in HUME HWY	40 Proceeding in lane					
705647	01/04/2010	Thu	21:00		at	HEDGES AVE	TJN	STR	Fine	Dry	80	2	CAR	M21	S in HEDGES AVE	20 Turning right		N	0	0	
E40868229							RUM:	13	Right near				CAR	F28	E in HUME HWY	45 Proceeding in lane					
779498	19/12/2011	Mon	07:15		at	HEDGES AVE	TJN	STR	Fine	Dry	60	3	CAR	F28	E in HUME HWY	50 Proceeding in lane		I	0	1	
E46888268							RUM:	33	Lane sideswipe				CAR	F37	E in HUME HWY	50 Proceeding in lane					
													4WD	M40	E in HUME HWY	50 Proceeding in lane					
808448	27/08/2012	Mon	15:20		at	HEDGES AVE	TJN	STR	Fine	Dry	40	2	CAR	M17	S in HEDGES AVE	5 Proceeding in lane		N	0	0	
E43325709							RUM:	10	Cross traffic				CAR	F53	E in HUME HWY	20 Proceeding in lane					
821972	20/12/2012	Thu	20:00		at	HEDGES AVE	TJN	STR	Fine	Dry	60	2	CAR	M34	S in HEDGES AVE	20 Turning right		I	0	2	
E50669967							RUM:	13	Right near				CAR	F21	E in HUME HWY	60 Proceeding in lane					
733226	01/12/2010	Wed	20:10	5 m	E	HEDGES AVE	TJN	STR	Raining	Wet	60	2	CAR	F26	W in HUME HWY	60 Veering right		I	0	1	
E373070791							RUM:	30	Rear end				CAR	F57	W in HUME HWY	10 Proceeding in lane					
806894	21/07/2012	Sat	18:40	10 m	E	HEDGES AVE	TJN	STR	Fine	Wet	60	2	CAR	F20	E in HUME HWY	50 Proceeding in lane		I	0	2	
E50665889							RUM:	30	Rear end				CAR	M55	E in HUME HWY	0 Stationary					

Detailed Crash Report

Transport Centre for Road Safety

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																				S F
640287	04/10/2008	Sat	13:20	10 m W	HEDGES AVE	TJN	STR	Raining	Wet	60	3	CAR	M71	E in HUME HWY	30	Proceeding in lane	N	0	0	
E34942036						RUM:	30	Rear end				TRK	F60	E in HUME HWY	0	Stationary				
												CAR	M45	E in HUME HWY	0	Stationary				
673224	14/06/2009	Sun	10:39	10 m W	HEDGES AVE	TJN	STR	Overcast	Dry	60	2	VAN	M24	W in HUME HWY	40	Incorrect side	N	0	0	
E37677548						RUM:	20	Head on				CAR	M29	E in HUME HWY	50	Proceeding in lane				

Report Totals: Total Crashes: 13 Fatal Crashes: 0 Injury Crashes: 5 Killed: 0 Injured: 7

Crashid dataset Liverpool Road and Hedges Avenue, South Strathfield

Note: Data for the 9 month period prior to the generated date of this report are incomplete and are subject to change.