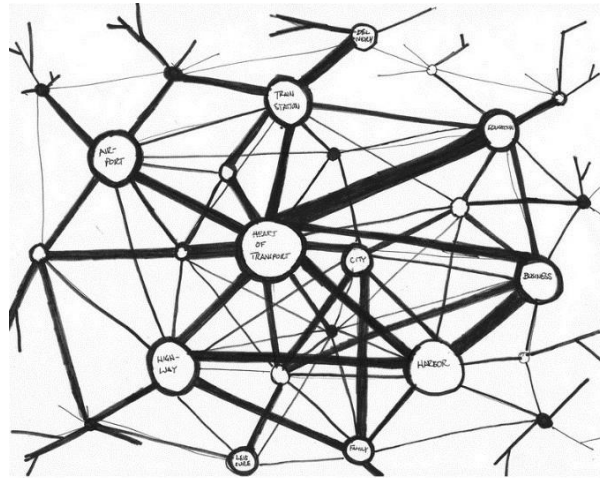


# TSA

ABN: 79 943 737 368

# TRAFFIC AND PARKING IMPACT STATEMENT

## PROPOSED ADDITIONS AND ALTERATIONS TO EXISTING ALL SAINTS CATHOLIC SENIOR COLLEGE (20 - 30 LEACOCKS LANE, CASULA)



**Date:**  
August 2017

**Office:**  
Suite 15/9 Hoyle Ave., Castle Hill  
NSW 2154

**All Correspondence:**  
75 Gindurra Ave., Castle Hill NSW  
2154

Ph: (02) 8850 2788

Mob:  
0418 262 125 (David Thompson)  
0450 747 401 (Yafeng Zhu)

Email:  
david@thompsonstanbury.com.au  
yafeng@thompsonstanbury.com.au

Website:  
www.thompsonstanbury.com.au

**COPYRIGHT:** The concepts and information contained within this document are the property of Thompson Stanbury Associates. Use or copying of this document in whole or in part without the written permission of Thompson Stanbury Associates constitutes an infringement of copyright.

## TABLE OF CONTENTS

	<b>PAGE NO.</b>
<b>1. INTRODUCTION .....</b>	<b>3</b>
<b>2. SITE DETAILS.....</b>	<b>4</b>
2.1 SITE LOCATION .....	4
2.2 SITE DESCRIPTION .....	4
<b>3. PROPOSED DEVELOPMENT .....</b>	<b>6</b>
3.1 BUILT FORM .....	6
<b>4. ACCESS &amp; INTERNAL CONSIDERATIONS.....</b>	<b>7</b>
4.1 VEHICULAR ACCESS .....	7
4.2 CAR PARKING PROVISION .....	7
4.2.1 <i>Existing and Proposed Car Parking Provision</i> .....	7
4.3 INTERNAL CIRCULATION AND MANOEUVRABILITY .....	7
4.3.1 <i>Passenger Vehicles</i> .....	7
4.3.2 <i>Heavy Vehicles</i> .....	9
<b>5. EXISTING TRANSPORT CONDITIONS.....</b>	<b>10</b>
5.1 ROAD NETWORK.....	10
5.2 EXISTING TRAFFIC VOLUMES AND CONDITIONS .....	10
5.3 PUBLIC PEDESTRIAN INFRASTRUCTURE .....	12
5.4 PUBLIC TRANSPORT .....	12
<b>6. INTERNAL CONSIDERATIONS.....</b>	<b>13</b>
6.1 STUDENT SET-DOWN / PICK-UP CONSIDERATIONS .....	13
<b>7. INTERNAL MANAGEMENT .....</b>	<b>14</b>
7.1 OPERATIONAL TRAFFIC & PEDESTRIAN MANAGEMENT .....	14
7.1.1 <i>General Items</i> .....	14
7.1.2 <i>Internal Staff Parking</i> .....	14
7.1.3 <i>Internal Student Set-Down / Pick-Up</i> .....	15
<b>8. CONCLUSION .....</b>	<b>16</b>

## 1. **INTRODUCTION**

This Practice has been commissioned by Sydney Catholic Schools to prepare a traffic and parking impact assessment accompanying a Development Application (DA) lodged with Liverpool City Council. The subject DA proposes additions and alterations to All Saints Catholic Senior College (ASCSC), located at 20 – 30 Leacocks Lane, Casula (hereafter referred to as the ‘subject site’).

The school currently accommodates a population of 560 students (between Years 11 and 12) and 60 staff (comprising 47 permanent and 13 support staff), which is not proposed to be altered as part of the proposed modifications to the school forming the subject DA. In this regard, no additional traffic is expected to be generated by the subject development. As such, the purpose of this report is therefore limited to assessing the internal development traffic considerations and the current external traffic conditions associated with the school. Specifically, this report assesses:

- The suitability and safety of the parking arrangements as relevant to the site and local conditions;
- Identifying any alterations to the access and vehicular circulation arrangements resulting from the proposed development;
- The suitability of the proposed modifications to the on-site parking area to accommodate the additional parking demand potentially generated by the expansion of the school; and
- The existing road network conditions within the vicinity of the site including traffic volumes and general traffic safety.

Reference has been made in this report to the following:

- The Australian Standards for *Parking Facilities Part 1: Off-Street Car Parking* (AS2890.1-2004);
- The Australian Standard for *Parking Facilities Part 6: Off-Street Parking for People with Disabilities* (AS2890.6-2009); and
- Liverpool City Council’s *Liverpool Development Control Plan 2008* (DCP 2008).

This report should be read in conjunction with the architectural plans prepared by Fulton Trotter Architects (FTA), copies of which are submitted under separate cover.

## **2. SITE DETAILS**

### **2.1 Site Location**

The subject site is located on the eastern side of Leacocks Lane, approximately 90m south of its junction with Kendall Drive, Casula. The site location is shown overleaf within a neighbourhood and aerial context by **Figures 1** and **2** respectively.

### **2.2 Site Description**

The subject site has a legal description of Lot 2 within Deposited Plan 773140 and a street address of 20 - 30 Leacocks Lane, Casula. The subject allotment forms an irregularly shaped parcel of land providing a single frontage to Leacocks Lane of approximately 195m. The total site area is in the order of 5.655ha.

### **2.3 Existing Uses**

The subject site currently accommodates numerous buildings, an outdoor sports field and amenities associated with an existing educational establishment (All Saints Catholic Senior College). The College is serviced by two separate off-street parking areas allocated for ‘employees/visitors’ and ‘students’ respectively, providing a total of 91 car spaces and an internal bus bay. Access to the employee/visitor parking and bus pick-up/drop-off area is facilitated by separate ingress and egress driveways connecting with Leacocks Lane at the western property alignment. Access to the student parking area is provided via a combined ingress/egress driveway connecting with Leacocks Lane at the south-western corner of the site.

In addition to the above, an indented temporary parking bay is provided along the eastern side of Leacocks Lane, between the separate entry and exit driveways servicing the on-site “employee/visitor” parking area.

The normal hours of operation of the College is between 7:30am – 4:30pm. It is noted that the College also hosts parent information sessions, which are infrequently held (approximately three per school term) outside of normal school operations, where the majority of on-site parking are expected to be available to visitors/parents to the site.

### **2.4 Surrounding Uses**

The subject site is landlocked by recreational park reserve to the north, east and south. Detached single storey and double storey residential dwellings form the dominant land profile to the west of the site (across Leacocks lane).

**FIGURE 1**  
**SITE LOCATION – ROAD NETWORK CONTEXT**



Source: Google Maps

**FIGURE 2**  
**SITE LOCATION – AERIAL CONTEXT**



Source: Six Maps

### 3. **PROPOSED DEVELOPMENT**

#### 3.1 **Built Form**

The subject DA seeks consent for the following building works:

- Alterations and additions to the existing administration/reception building building (Block A);
- Modifications to the existing library/drama (Block P) & GLA building, art building (Block N) to accommodate art & TAS classes
- The refurbishment of the existing art building (Block B5) to accommodate a canteen and student amenities
- The extension of an existing gravel path adjacent to the library to provide pedestrian connectivity between the front office and the art/TAS building.

In addition to the above, the following modifications have been proposed within the off-street parking area:

#### Employee/Visitor Parking Area

- Three existing parallel parking bays (allocated to staff), located close to the egress driveway are proposed to be deleted, which will reduce the total site wide parking provision from 91 to 88 spaces;
- The kerb 'kick-out' adjoining the egress taper of the internal bus bay is to be removed to ensure that up to three buses can be accommodated at any one time; and
- The above measures are intended to assist with improving the safety and efficiency of bus manoeuvrability through the internal bus bay.

#### Student Parking Area

- Removal of landscaping material occupying up to four existing parking spaces to ensure their availability for use by students.

No alterations to the existing vehicular access and the existing parking numbers within student on-site parking area are proposed as part of the subject application. Further no changes are proposed to the current approved student and staff populations

## **4. ACCESS & INTERNAL CONSIDERATIONS**

### **4.1 Vehicular Access**

The on-site employee/visitor parking area and the internal bus bay is accessed via separate entry and exit driveways servicing Leacocks Lane, providing widths of 13.0m and 10.0m respectively at the western property alignment. A further 5m wide combined ingress/egress driveway provides connectivity between Leacocks Lane and the on-site student parking area.

The abovementioned existing access driveways are controlled remotely by electrically operated gates, which open prior to the start/finish of school & special school events (e.g. parent/teacher info nights) and remain closed at all other times.

Our observations during peak school starting and finishing periods indicate that both passenger vehicles and school buses are able to enter and exit the site via the existing driveways with no encroachment on adjoining kerbs and public/private infrastructure.

The consistent horizontal and vertical alignment of Leacocks Lane in the vicinity of the site access driveways provides drivers with adequate site distance to negotiate access movements to and from the site in a safe and efficient manner provided common driver courtesy and road rules are followed.

### **4.2 Car Parking Provision**

#### **4.2.1 Existing and Proposed Car Parking Provision**

The site is proposed to provide a total site-wide parking provision of 88 car spaces.

In order to undertake an assessment of the proposed parking provision with respect to the proposed land-use, reference is made to Part 1 of Liverpool Development Control Plan 2008 (DCP 2008). This document provides locally sensitive parking requirements for various land-uses to ensure that new developments provide adequate off-street parking, providing the following requirements for educational establishments:

*1 space per 1 staff member, plus 1 space per 30 students*

Based on a maximum student and staff population of 560 students and 60 staff, the proposed school is required to provide a total of 79 spaces in accordance with DCP 2008. Considering that 88 formalised car spaces are proposed, compliance with Council's requirements is therefore readily achieved.

### **4.3 Internal Circulation and Manoeuvrability**

#### **4.3.1 Passenger Vehicles**

The off-street parking areas generally provide single rows of 90 degree angled parking spaces being serviced by adjoining parking aisles. Further, parallel parking is provided along the northern kerb immediately adjacent to the ingress driveway servicing the employee/visitor car park. Upon entry into the off-street parking areas, passenger



vehicles can proceed in a forward direction to access/manoeuvre into the parking space, before exiting the site in a forward direction.

In order to assess the suitability of the existing internal circulation design within the off-street parking areas servicing the development, an audit of the architectural plans has been undertaken with respect to the design criterion of AS2890.1-2004. A schedule of compliance with the relevant sections of AS2890.1-2004 is contained within **Table 1** provided below.

<b>TABLE 1 ASSESSMENT OF COMPLIANCE OF ON-SITE PARKING AREA WITH AUSTRALIAN STANDARD (AS 2890.1-2004)</b>			
<b>Section</b>	<b>Requirement</b>	<b>Provided</b>	<b>Compliance</b>
2.3.3	< 100m parking module length	Maximum 62m	Yes
2.4.1	90 degree space dimensions (User Class 1) = 2.4m x 5.4m	Minimum space dimensions = 2.4m x 5.4m	Yes
2.4.2 (a)	Parking aisle adjacent to 90 degree residential spaces = 5.8m	Minimum parking aisle = 5.8m	Yes
2.4.2 (c)	Blind aisles to be extended a minimum of 1m beyond last space	1m	Yes
2.4.6	Maximum gradients, 1:20 parallel to angle of parking and 1:16 @ 90 degrees to angle of parking	All parking areas are generally provided on level ground	Yes
3.2.4	Sight distance at driveway minimum 45m	>45m	Yes
3.4.2	Sight distance triangle 2.5m x 2m at corner of driveway adjacent to egressing vehicle must be clear of obstructions	Sight distance triangle provided at egress driveway clear of obstructions	Yes
5.3	Minimum headroom = 2.2m	Unrestricted clearance (outdoors)	Yes

It is therefore considered that the existing car park layouts servicing the development suitably conform to the intentions of the requirements of AS2890.1-2004.

Further to the above, the following design criterion is provided with respect to disabled parking spaces in accordance with AS2890.6-2009:

- Disabled space width = 2.4m (plus adjoining 2.4m wide shared area, some of which are contained within the adjoining manoeuvring aisle);
- Disabled parking space length = 5.4m; and
- Clearance above disabled spaces = 2.5m.

In consideration of this and the above discussion, the existing internal passenger vehicle circulation arrangements servicing the development are satisfactory.

Student drop-off/pick-up provisions are currently facilitated within an indented bay, immediately fronting the site, adjoining the eastern kerb of Leacocks Lane. Our observations during peak starting and finishing times of the school indicate that the student pick-up/drop-off zone (approximately 50m in length) accommodates an



instantaneous parking demand of up to eight vehicles at any one time, with minimal impedance on the through traffic flow.

#### **4.3.2 Heavy Vehicles**

It has been previously presented that the employee/visitor car park accommodates an internalised bus bay in the immediate vicinity of the front office. This loading area services both school buses and small delivery vehicles. Our observations indicate that such vehicles are capable of accessing/vacating the internal bus bay in a safe and efficient manner.

In addition to the above, it is noted that the proposed deletion of three staff parking spaces and the setback of the kerb in the vicinity of the internal bus bay will assist with improving the circulation/movement of buses through the bus bay and minimise conflict with passenger vehicles.

## 5. **EXISTING TRANSPORT CONDITIONS**

### 5.1 **Road Network**

The following provides a description of the road network adjoining the site:

**Leacocks Lane** performs a collector road function under the care and control of Liverpool City Council. The road configuration forms a circulating loop that connects with Hume Highway at its north-eastern and south-western extremities under signalised traffic control.

Leacocks Lane primarily provides a 10m wide pavement providing one through lane of traffic in each direction separated by a painted island between formalised kerb and guttering. “No-Stopping” parking restrictions are imposed along both sides of the road, between Roberts Road and Leacock Regional Park Reserve, immediately adjacent to the school frontage. Traffic flow is governed by a sign posted 50km/h speed limit, however a 40km/h speed limit applies between 8:00am – 9:30am and 2:30pm – 4:00pm, in the vicinity of the site, which coincides with the peak student pick-up and drop-off activities associated with All Saints Catholic Senior College.

**Hume Highway** performs a State Road function under the care and control of the Roads & Maritime Services. In this regard, it forms an important arterial link between Parramatta Road at Summer Hill in the north-east and M5 / M7 Motorway at Casula in the south-west.

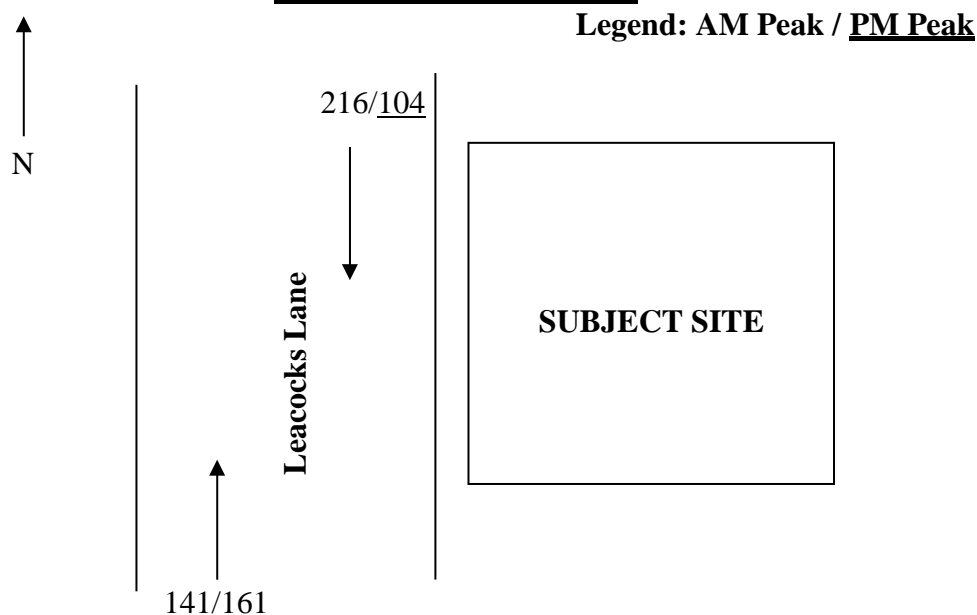
Within the periphery of the subject site, Hume Highway primarily forms a six lane divided carriageway, providing three through lanes in each direction separated by a central median. On approach to its signalised intersection with Kurrajong Road and Leacocks Lane, the pavement widens to accommodate auxiliary turning lanes to facilitate turning movements to the intersecting side roads. Traffic flow within Hume Highway is governed by a sign posted speed limit of 70 km/h.

### 5.2 **Existing Traffic Volumes and Conditions**

In order to obtain an accurate indication of the existing traffic demands in the immediate vicinity of the subject site, weekday peak hour traffic surveys were commissioned to be undertaken along Leacocks lane immediately adjacent to the development site. The surveys were undertaken between 7.00am – 8.00am and 2.30pm - 3.30pm on the 23<sup>rd</sup> of May 2016 to capture peak traffic activity corresponding to the starting and finishing periods of the school. It is noted that whilst these results are some months old, a recent inspection indicates that the previously surveyed data remains valid.

**Figure 3** overleaf provide a summary of the results of the survey whilst full details are available upon request. **Figure 3** indicates that Leacocks Lane accommodates two directional hourly traffic demands in the order of between 250 – 350 vehicles (with 216 vehicles being the highest recorded hourly flow in a single direction).

**FIGURE 3**  
**EXISTING PEAK HOUR (7.00AM – 8.00AM AND 2.30PM – 3.30PM)**  
**TRAFFIC MOVEMENTS**



In order to undertake an assessment of the operational performance of the mid-block capacity of the frontage road in the immediate vicinity of the subject site, reference is made to the Roads & Maritime Services' *Guide to Traffic Generating Developments*. The Authority indicates that a two lane two way urban road accommodating between 200 – 380 vehicles per hour in each direction provides a Level of Service (LoS) 'A/B'

The Roads & Maritime Services define a route LoS of 'A/B' as indicating free or stable flow where drivers are reasonably unaffected by others in the traffic stream. Freedom to select desired speeds and to manoeuvre within the traffic stream is high, and the general level of comfort and convenience provided is good.

The above Roads & Maritime Services LoS definition is commensurate with overall traffic conditions observed by this Practice immediately adjoining the subject site. In this regard, motorists have generally been observed to experience minimal delay at public road intersections and when accessing / exiting the subject site.

Further to the above, our observations have also identified the following traffic issues within the immediate vicinity of the subject site during morning and afternoon peak school periods:

- Some minor turnaround movements from the indented student drop-off and pick-up bay adjoining the eastern kerb of Leacocks Lane have been observed to temporarily impede on the traffic flow in both directions leading to minor delays and increases the risk of accidents in the form of collisions. It is noted that the two edge lines forming the sides of the central painted island within Leacocks Lane makes such turning manoeuvres illegal. However, the current deterrence have not prevented turnaround manoeuvres from being undertaken upon egressing the indented bay. In this regard, it is recommended that further discussions is required with Council to determine appropriate measures (e.g.

barriers, appropriate sign posting) to prevent turnaround action and improve the safety of vehicles exiting the indented bay.

- Some minor queuing have been identified within the indented student pick-up/drop-off bay. The instantaneous nature of the parking demand associated with pick-up and drop-off activity is such that these queues quickly dissipate. Further, the width of the southbound carriageway and the “No-Stopping” restrictions along the frontage of the site enables a through vehicle to pass a stationary vehicle in the queue. As such, the southbound traffic flow with Leacocks Lane is not observed to be significantly affected by minor queues extending from the indented student pick-up/drop-off area.

### **5.3 Public Pedestrian Infrastructure**

The following provides a summary of the external pedestrian facilities close to the subject site:

- Paved footpaths are provided along the both sides of Leacocks lane;
- A pedestrian refuge island is provided across Leacocks Lane to the immediate south of the existing egress driveway servicing the employee/visitor car park; and
- Signalised pedestrian crossings across all approaches at the intersection of Hume Highway and Kurrajong Road/Leacocks lane.

The above pedestrian facilities provide safe and efficient pedestrian connectivity between the subject site and public transport facilities in the immediate vicinity of the site.

### **5.4 Public Transport**

The closest bus stop to the subject site is located along the eastern side of Leacocks Lane adjacent to the western property alignment. This bus stop is operated by Interline, which services routes 870 and 871 running between Campbelltown to Liverpool. It generally provides 60 minute frequencies during weekdays and weekends.

## **6. INTERNAL CONSIDERATIONS**

### **6.1 Student Set-Down / Pick-Up Considerations**

It is noted that the student pick-up/set-down procedure is usually an instantaneous process, whereby a high parking turnover relating to short term parking is expected to occur within the pick-up/set-down area. In this regard, whilst our observations have identified some minor queuing within the designated pick-up/set-down area adjacent to the frontage of the site, it is expected that the staggered nature of vehicle arrivals and departures would generally minimise the impact associated with pick-up/drop-off activity.

Further to the above, it should be acknowledged that there are some vacant spaces identified within the existing on-site staff/visitor parking area during peak school operations, which could be used to alleviate the increase in instantaneous parking demand within the designated pick-up/drop-off area. In order to better manage this process, it is recommended that consideration be given to the school for implementing an Operational Traffic & Pedestrian Management Plan (OMP) to govern the use of the on-site and on-street student set-down / pick-up areas as well as general traffic safety within and around the school. The purpose of this OMP is to govern the implementation of the proposed altered parking arrangements and also to improve the safety and efficiency with which students are set-down / picked-up by private vehicles. The OMP should address issues which are considered vital to the safety of school students as well as to the sound site and public road management as they relate to traffic and pedestrian safety.

It is considered that the requirement for the OMP can reasonably be imposed by Council as a condition of development consent. Incorporating the satisfactory implementation of an OMP (provided in the following section), it is considered that the subject proposal will not have any unreasonable impacts on the general safety and efficiency of the surrounding road network or indeed, the school site during normal operational periods.

## **7. INTERNAL MANAGEMENT**

In order to ensure safe and efficient school operations during peak start and finish periods, it is recommended that an Operational Traffic & Pedestrian Management Plan (OMP) be implemented. The following subsections of this report provide a summary of the key strategies which should be incorporated within the Plan, the requirement for which could be reasonably imposed by Council as a condition of Development Consent.

### **7.1 Operational Traffic & Pedestrian Management**

#### **7.1.1 General Items**

- A Management & Safety Committee is to be established to implement the operational traffic and pedestrian management measures incorporated within this Plan and to develop further guidelines in order to ensure that on-site and off-site vehicular and pedestrian safety is maximised.

The Committee shall comprise the school principal or his / her senior representative, a parent's representative as well as an independent traffic consultant to provide initial assistance in the implementation of the Plan and subsequent periodic guidance in ongoing review of the Plan.

- The Management & Safety Committee shall ensure that the procedures contained within the OPTM are put in place with respect to: on and off-site traffic and pedestrian management and safety issues.
- The Committee shall put in place measures which should ensure parent / guardian compliance with the Plan. These should take the form of specific instructions via student newsletters and indications that such instructions are to be observed as may be applicable to any private property and could therefore form part of the initial enrolment procedures.
- The Plan should also be subject to periodic review by the school (in consultation with Council for endorsement), to ensure that road safety issues as they relate to the public roads close the school, are appropriately documented and implemented in accordance with sound traffic engineering and road safety practices.

#### **7.1.2 Internal Staff Parking**

- Staff parking is to occur within the designated off-street parking areas that are separate to parents/visitor and pick-up/drop-off parking areas.
- Staff who wish to utilise the site parking facilities are to arrive prior to 7.30am and exit after 4.30pm on school days to minimise the interaction of this vehicle movements with the peak student set-down / pick-up periods during school start and finish periods.

### **7.1.3 Internal Student Set-Down / Pick-Up**

- Student drop-off / pick-up are to be undertaken within the existing indented set-down/pick-up area adjacent to the front of the site. Further, some spaces adjoining the western site boundary may be considered to service Student drop-off / pick-up activity.

#### School Start

- Parents setting-down students during the morning peak are to do so in the abovementioned signposted area(s).
- Students set-down within the area are to access the school buildings to the east via the existing pedestrian walkway.
- No staff parking is to occur within the set-down / pick-up area during the morning school start period.
- During the initial stages of the implementation of this TMP, a traffic warden (wearing an appropriate clean high visibility reflective vest) will supervise the set-down / pick-up area during the morning prior to school start to ensure that students disembark parent vehicles in a safe and efficient manner.

#### School Finish

- The school will implement the following operational management arrangements during the afternoon school finish period:
  - Students assemble under the supervision of a warden at the pick-up area following the completion of the school day;
  - Parents display the names of children to be picked-up on the windscreen of the vehicle when entering the pick-up area; and
  - The warden supervising the student assembly area arranges for the relevant student/s to be brought to the front of the assembly area upon the arrival of the parent vehicle to the pick-up location.
- No staff parking is to occur within the student pick-up area during the afternoon school finish period.



## **8. CONCLUSION**

This report details our assessment of the traffic, access and safety considerations associated with proposed alterations and additions to the All Saints Catholic Senior College (ASCSC) located 20 - 30 Leacocks Lane, Casula. Having regard to the contents of this report, the following conclusions are now made:

- The existing access, internal circulation and manoeuvring arrangements are capable of providing for safe and efficient vehicular movements during peak times;
- The slightly modified on-site car parking areas providing a total parking provision reduced from 91 to 88 spaces still exceeds the minimum requirements specified within Liverpool Development Control Plan 2008;
- The proposed deletion of three staff parking spaces adjacent to the internal bus bay improves the circulation and safety of buses exiting the site through better separation of passenger and heavy vehicle movements;
- The existing condition of the frontage and surrounding roads currently operates with a good level of service during peak school periods; and
- Safe and efficient internal operations of the school is to be guided by the measures proposed within the Operational Traffic & Pedestrian Management Plan detailed within Section 8 of this report.

Incorporating the recommendations contained within this report, there are no parking and traffic related issues associated with the proposed development which would prevent this Practice from recommending the proposal for Council approval.