Woolacotts.
CONSULTING ENGINEERS

Gledswood Hills Public School Traffic Report

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Contents

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1. Introduction

The new Gledswood Hills Public School is to be located on The Hermitage Way, Gledswood Hills. The site will have frontages on The Hermitage Way and new roads MC 06 and MC 07. See Figure 1 for the approximate location of the site. The new school will eventually cater for 1,000 students, but will be constructed in stages accommodating up to 600 students in the initial stage.

This report has been prepared to address traffic issues associated with the proposed public school, including parking, bus zones and traffic generated by the site and to cover issues raised in the SEARs. Traffic requirements for the site have been determined using the RMS *Guide to Traffic Generating Developments*. Where this does not provide data or guidance, reference is made to similar developments. As Oran Park Public School is a similar size to the proposed new school, it is used as a reference.

The site is located within a new development area. See Figure 2 for the overall Master Plan. Traffic reports prepared by Aecom were provided, which detail assumptions made regarding future traffic flows in the area. Copies of these reports are provided in Appendix A.

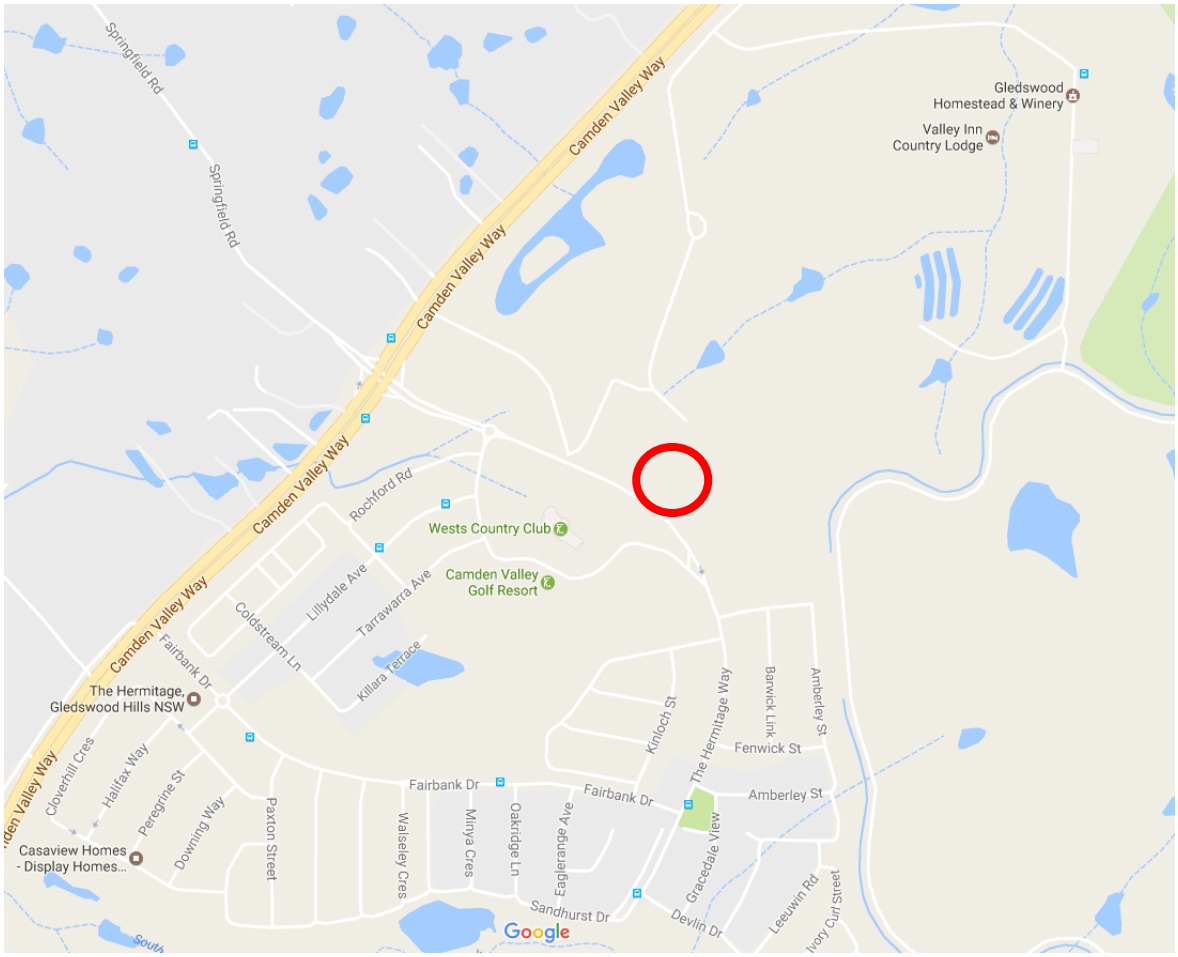

Figure 1 – Approximate Site Location

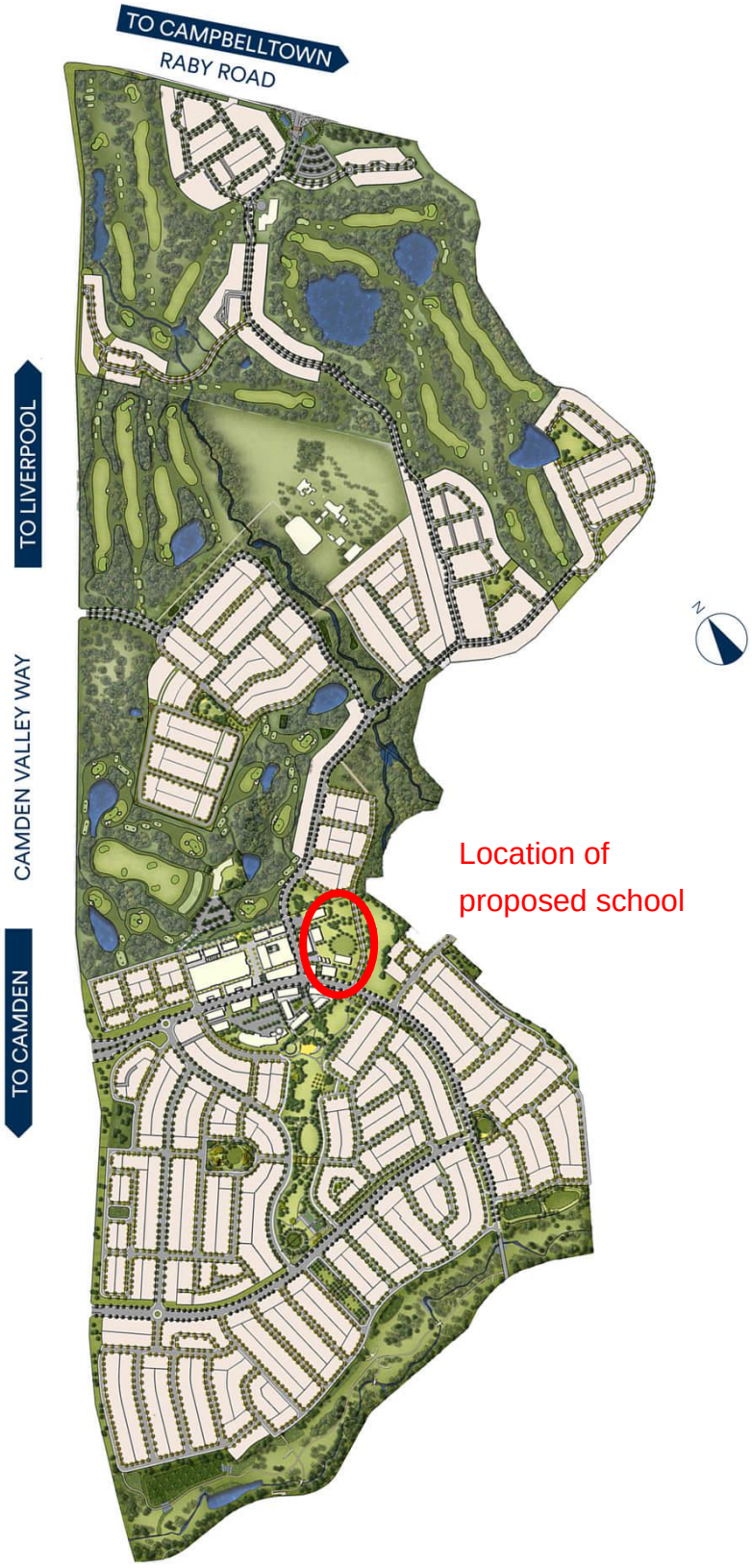

Figure 2 –Gledswood Hills (The Hermitage) Master Plan

2. Existing conditions

2.1 The site and existing roads

The site is located on The Hermitage Way and will also have frontages to new roads MC06 and MC07. The section of The Hermitage Way past the site has recently been completed and handed over to Council. New Roads MC06 and MC07 have not yet been constructed. Construction of MC07 is forecast for completion in February 2018, while MC06 in April 2018. Construction of both roads will be complete before the opening of the school.

The Hermitage Way will be the collector road for the area, connecting Camden Valley Way with the rest of The Hermitage development precinct. It is planned to extend it through to Gregory Hills Road in the future.

In the future, new road MC07 will also act as a collector road, linking The Hermitage Way to Raby Road via El Caballo Blanco and Lakeside.

New road MC06 will be a local access road.

2.2 Public Transport

The current bus routes serving the area are:

- Route 841 – Narellan to Lepppington Station via Gledswood Hills
- Route 850 - Narellan to Minto via Oran Park, Gregory Hills and Catherine Fields
- Route 857 – Narellan to Liverpool via Prestons and Casula
- Route 858 - Oran Park Town Centre to Leppington Station
- Route 899 - Camden to Catherine Field via Narellen.

The 841 bus has a circuit through Gledswood Hills. It currently does not pass the school site. However, a bus stop will be located on The Hermitage Way just before the school, and it is intended that this route will use the stop. The route operates from Monday to Friday and takes approximately 25 minutes to travel from Leppington to Gledswood Hills. It has a 1 hour frequency during the day, increasing to 30 minutes during morning and evening peak.

The 850 bus has a stop at the intersection of Camden Valley Way and Springfield Road, approximately 400m from the school site. It takes approximately 25 minutes to travel from Minto to Gledswood Hills. The service operates 7 days a week. During weekdays it operates on an hourly frequency, increasing to a 30 minute frequency during the morning and evening peaks.

The 857 bus has a stop at the intersection of Camden Valley Way and Springfield Road, approximately 400m from the school site. It takes approximately 10 minutes to travel from Narellen to Gledswood Hills. While it operates 7 days a week, it is an infrequent service.

The 858 bus has a stop at the intersection of Camden Valley Way and Springfield Road, approximately 400m from the school site. It takes approximately 12 minutes to travel from

Leppington Station to Gledswood Hills and operates 7 days a week. During weekdays it has a service at 30 minute intervals

The 899 bus has a stop at the intersection of Camden Valley Way and Springfield Road, approximately 400m from the school site. It is a school service only, and has 4 services in the morning going to Camden and two in the afternoon leaving Camden.

The closest railway stations to the school are Leppinton and Minto. From both, a bus is required to reach the site.

2.3 Parking

The site is currently undeveloped, with no on-site parking.

On-street parking will be available on new roads MC06 and MC07. Along The Hermitage Way, immediately fronting the site, on-street parking is currently available. However, this space has been designated as a bus bay for the proposed school.

2.4 Existing traffic

The Hermitage Way in front of the site has only recently opened to traffic. As such, traffic volumes are low and existing figures are not available.

2.5 Existing cyclists and pedestrians

Plans for the precinct include a network of cycle and shared paths. The path on the western side of The Hermitage Way is currently under construction and will provide a link from the school site to the precinct network.

3. The development and impact

3.1 Proposed works

The development proposed for the site consists of public school that when fully developed will cater for a total of up to 1,000 students. The anticipated number of staff at the school will be nominally 65.

The major use of the site will occur on weekdays, during normal school hours of approximately 8:30am to 3:30pm. Extracurricular activities will occur after school and on weekends. It is anticipated that there will be before and after school care provided at the school.

3.2 Public transport and bus zones

The current bus routes serving Gledswood Hills are:

- Route 841 – Narellan to Lepppington Station via Gledswood Hills
- Route 850 - Narellan to Minto via Oran Park, Gregory Hills and Catherine Fields
- Route 857 – Narellan to Liverpool via Prestons and Casula
- Route 858 - Oran Park Town Centre to Leppington Station
- Route 899 - Camden to Catherine Field via Narellen.

Route 841 is the only route that will pass the school, with the rest travelling along Camden Valley Way. However, with the ongoing development of the area, it is possible that additional routes could pass the site in the future. The local bus companies, Busabout and Interline, have advised that with development in the area routes and frequency will be adjusted to suit demand and growth, including demand generated by a new school. Staff at the school will be able to utilise these regular services.

The closest railway stations to the school are Leppington and Minto. Bus routes 841 and 850 will be able to be used to get to the site from these stations. The railway station is approximately a 10km away from the south which makes it unsuitable for walking.

The regular bus routes will be able to be used by students. However, dedicated school services will be required, to transport students within the school's catchment zone and they will be provided by the local bus companies.

Bus bay arrangement

The bus bay on The Hermitage Way is exclusively designed for dedicated school buses from the local catchment, as opposed to public buses. There are a variety of factors that influence the number of dedicated school buses, including:

- The number of students attending the school
- Public versus private school
- Primary versus high school

- Availability of alternate transportation such as public buses, trains, cars, walking/cycling paths

As the school population increases it is likely that the number of students requiring bus transportation will also increase. More buses will be added as the population increases.

Private schools generally have a larger catchment area and will consequently use public transport more than a public school.

High school students are older than primary school students and because of safety and independence aspects, bus usage is generally higher than for primary school students. Gledswood Hills Public School is intended to draw only students from the immediate local catchment.

The availability of alternate local transportation will also determine how many dedicated buses service a school. For instance, if the train station is too far away to walk, students will have to use a combination of trains and buses. Additionally, if safe walking pathways are available to the school it is more likely that students will walk to school.

To estimate the number of school buses that is expected to service Gledswood Hills Public School, three similar schools located in Western Sydney were compared, including Oran Park Public School, St Justin's Catholic Primary School and Harrington Street Primary School. With the possible exception of St Justin's Catholic Primary School, the public schools will source their student population from a local catchment area. A summary of the comparisons is presented in Table 1 below.

Table 1 – Local School Comparison

School	Oran Park Public School	St Justin's Catholic Primary School	Harrington Street Primary School	Proposed Gledswood Hills Public School
Type:	Public	Private	Public	Public
	Primary	Primary	Primary	Primary
Student Population	700	800	1000	1000
Distance of closest train station	> 10km	> 10km	3km	> 10km
Safe walking/cycling access	Yes	Yes	Yes	Yes
Dedicated Bus Services	- 4 in the morning - 3 in the afternoon	- 7 in the morning - 8 in the afternoon	No designated school buses	
Bus Bay Length	62m	64m	64m	58m
Maximum buses in the bus bay at one time	3	3	-	To be determined

From Table 1 above, Oran Park Public School most closely resembles Gledswood Hills Public School in terms of its proximity to the proposed site and its characteristics, albeit with a smaller maximum student population. Extrapolating Oran Park's bus services to student population ratio, Gledswood Hills Public School will need approximately 5 school buses in the morning and 4 in the afternoon. But note that this will be determined by the school bus companies servicing the site as the school population increases.

There is an existing 58m bus bay on The Hermitage Way along the school frontage. This will have room for two standard (12.5m) buses at one time, allowing for independent operation. However normal practice involves buses parking front to rear in succession, with the front bus arriving first and leaving first, the second bus arriving second and leaving second and so on. This allows more buses to fit into a space and is typical across all schools. This standard operating procedure currently occurs at the three schools nominated in Table 1 above. Consequently three buses can fit into Gledswood Hills Public School's designated existing bus bay. Refer to Figure 3 for the location of the bus bay.

Additionally the lengths of the bus bays for the different schools, as shown Table 1 above, are all similar even though they have different student populations and different numbers of school buses. This further reinforces the fact that bus bays are designed for a maximum of three buses at any one time. For instance, St Justin's Catholic Primary School has 7 buses in the morning and 8 in the afternoon and its bus bay length is almost identical to the length of Oran Park Public School's bus bay which has 3 buses in the morning and 3 in the afternoon. When Gledswood Hills Public School has more than 3 buses servicing the school in the morning or afternoon, the bus companies will space out the timing of the buses so that a maximum of three buses will be in the bus bay at any one time.

The standard practice of the bus companies is to space out the timing of buses leaving the school, so that there is a maximum of three buses in a bus bay at any one time, as seen in Table 1 above for Oran Park Public School and Saint Justin's Catholic Primary School. Oran Park Public School's online bus timetable shows three buses arriving in the morning within 2 mins of each other followed by a forth bus arriving 13 minutes after the first bus. St Justin's Catholic Primary School online bus timetable shows three buses arriving in the morning peak within 2 minutes of each other followed by a forth bus arriving 6 minutes after the first bus. In the afternoon peak three buses arrive within 2 minutes of each other follow by a fourth bus 19 minutes after the first bus.

A 16-22 seater min-bus will be used to transport students with a disability. As the existing grade along The Hermitage Way exceeds disabled access requirements, a separate drop off space will be provided on new road MC07, adjacent to the main entry to the school. This space will be 8.5m long by 3.2m wide, with a 1.6m minimum wide footpath, to comply with access parking requirements. Refer to Figure 3 for the location of this space.

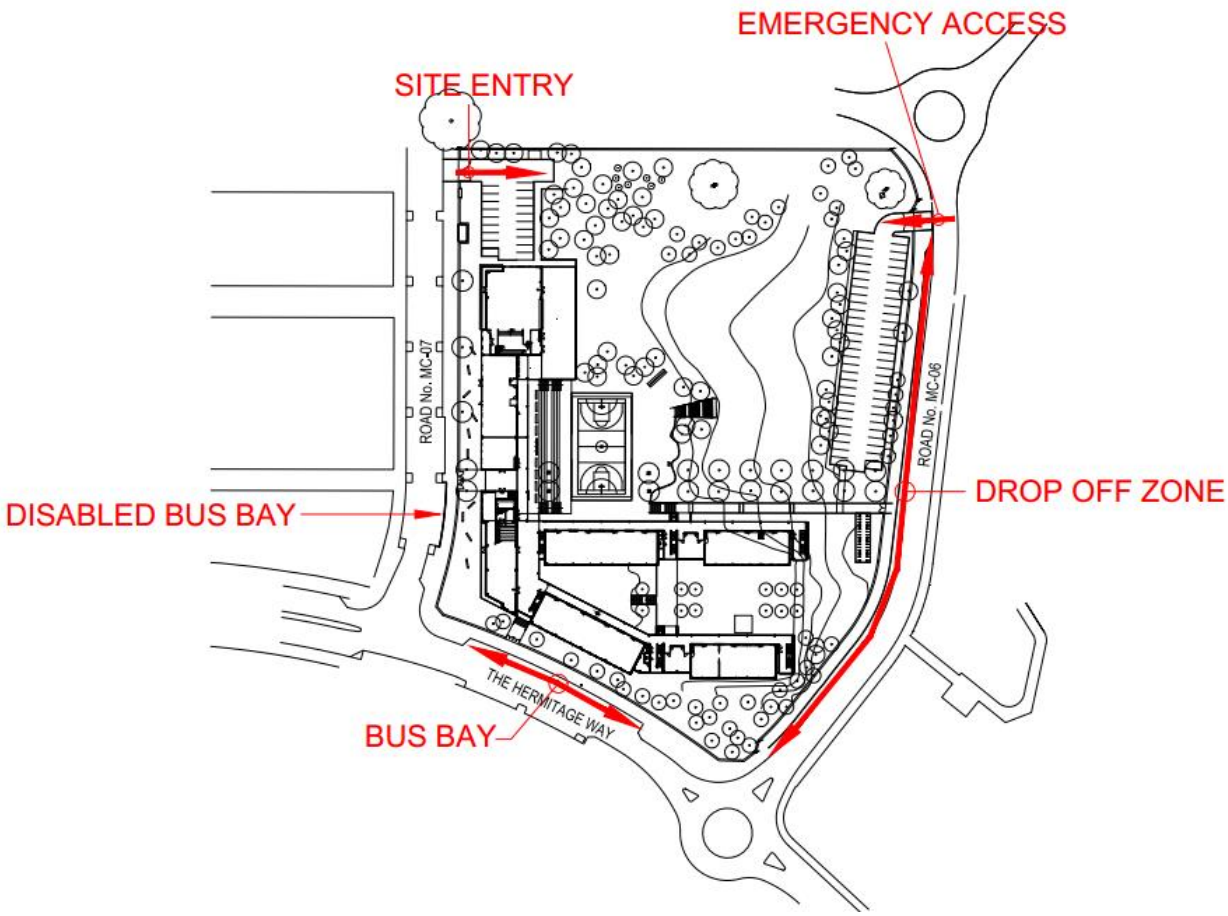

Figure 3 – Location of Bus Bay and Drop Off Zone

Road suitability for school buses

The main road used to access the school will be The Hermitage Way. This road has been designed as a collector road and is sized to cater for bus traffic.

3.3 Drop off / pick up

Drop off / pick up zones are required at schools to provide a safe location where students can be dropped off and picked up and minimise traffic congestion in the area. The space required is dependent on the number of vehicles dropping off or picking up students.

From our experience at other schools and the data obtained from the traffic counts for Oran Park Public School, (a similar sized school to the proposed Gledswood Hills Public School) the following rates have been adopted as typical rates for drop off / pick up:

- In the morning, the number of vehicles dropping off students is 50% of the total student population.
- In the afternoon, the number of vehicles picking up students is 35% of the total student population
- After the peak period, the number of vehicles picking up student from after school care is 10-15% of the total student population.

Sustainable transport measures are to be encouraged at the school, with the intent to reduce the above rates.

A drop off zone will be provided along new road MC06, with space for approximately 28 vehicles. Refer to Figure 3 for location. During the morning peak, if students are dropped off over a 15 minute period, each vehicle can be in the drop off zone for approximately 50 seconds. During the afternoon peak, if students are picked up over a 10 minute period, each vehicle can be in the drop off zone for 50 seconds, which increases to 1.2 minutes per vehicle if the pick-up extends to 15 minutes.

While parking will be available in new road MC07, the spaces will not be signposted as drop off / pick up and parents will be discouraged from using this area unless they have meetings with school staff.

The roundabout at the intersection of The Hermitage Way and new Road MC06 and the future roundabout on new road MC06 past the school will facilitate use of the proposed drop off zone, as they will provide easy access to and from The Hermitage Way and will also provide a location to undertake a safe and legal U-turn. Alternatively they can turn left at the first intersection past the school and then join to new road MC07 to reach The Hermitage Way. Therefore, unless parents need to meet with school staff, new road MC06 will be the preferred location to drop off and pick up students, and will be the location specified in all school documents and correspondence regarding student drop off and pick up.

Gates and paths will be provided at the drop off zone, to allow student access before and after school.

3.4 Parking

The Camden Council DCP 2011 details the minimum car parking requirements for developments. For Schools, the DCP requires the following:

- 1 car parking space per full time equivalent staff member, plus
- 1 car parking space per 100 students, plus
- Adequate space for delivery vehicles, drop off / pick up and buses.

For a 1,000 student school with 65 staff, the number of parking spaces required is 75. It is proposed to provide this number of spaces on site, with 17 spaces near the Hall (accessed from new road MC07) and 58 spaces at the bottom of the site, access off new road MC06. The parking will be constructed in stages, with 45 spaces provided in Stage 1 (17 spaces near the Hall plus 28 access off new road MC06) and a further 30 in Stage 2.

The new parking spaces to be provided will comply with the requirements of AS2890.1. As both parking areas are blind aisles, a dedicated turning bay will be provided at the end of each area.

3.5 Access

Driveways

There will be two vehicle access points to the site. The first will be off New Road MC07 and will provide access to the smaller parking area and to the garbage area. The second will be off New Road MC06 and will provide access to the larger parking area.

The driveway off New Road MC07 will be 7.0m wide and be a combined entry and exit. The design of the parking area allows a 9.3m garbage truck to turn around and leave the site in a forward facing direction. Refer to Drawing TP1 in Appendix A for details of the garbage truck turning path. Sight distances in accordance with AS2890.1 are available for the driveway.

The driveway off New Road MC06, will be located approximately 15m from the intersection / future roundabout and 5m clear of the drop off zone. It will be a combined entry / exit with a width of 6.0m. Due to the proximity to the intersection / future roundabout and the traffic generated by the drop off zone, the exit from the parking area will be left turn only. Drivers wishing to head to The Hermitage Way will be able to perform a U-turn at the future roundabout or turn left into the first street to travel to new road MC07 and The Hermitage Way.

Sight distances in accordance with AS2890.1 are available for the driveways.

Emergency vehicle access

Emergency vehicle access will be available to both parking areas. From the lower parking area, accessed from New Road MC06, access will be available to the playgrounds and the lower part of the school.

3.6 Traffic generation and modal split

The RMS *Guide to Traffic Generating Developments* does not give advice on traffic generation for educational establishments. Therefore, estimates need to be made based on data from existing establishments and knowledge of the development.

As the site is a school, the following traffic movements will occur:

- Staff will arrive in the morning, typically in the 30minutes before school starts. Some staff will be in earlier, to undertake administrative tasks. Based on 90% of staff driving their own vehicles, this will result in approximately 64 vehicle movements to the school.
- Parents dropping students will typically arrive and depart in the 30minutes before school begins, with the larger number of movements occurring in the 15minutes before classes start. Based on counts undertaken at Oran Park Public School, during the morning, the number of vehicles dropping students to school is 50% of the total student population, generating 500 vehicles.
- School buses will arrive, set down students and depart. Typically these occur 15minutes before classes begin. We have estimated that there will be 3-4 bus movements to and from the primary school in the morning.
- Staff will depart in the afternoon, after classes finish. Leaving times will vary depending on administrative tasks required. Typically all movements will occur in the hour after classes finish. We have estimated that there will be 64 vehicles leaving after school finishes.
- Parents will typically arrive just before or just after classes finish, pick up students and then depart. Based on counts at Oran Park Public School, the number of vehicles used to collect students is 35% of the total student population, which will result in 350 vehicles.
- School buses will arrive around school finish time, pick up students and then depart. This generates 3-4 movements to and from the site.
- Visitors and deliveries will occur throughout the day.

In summary, the traffic generated during the morning and afternoon peaks when the school is at peak capacity is estimated as follows:

- AM peak - 568 vehicles driving to the school
  - 504 vehicles leaving the school
- PM peak - 354 vehicles driving to school
  - 418 vehicles leaving the school

The AM Peak associated with the schools will occur in the period from 50 minutes before school commences and the 10 minutes after school starts. This will be from approximately 8:20 – 9:20am. The PM peak associated with the schools will occur in the period from 15 minutes before classes finish until 45 minutes after classes finish. This will be approximately 2:45 – 3:45pm.

3.7 Future traffic conditions and impact of generated traffic

As detailed in Section 2.1, The Hermitage Way has only recently opened to traffic. It has one lane in each direction, with a bus bay provided along the school frontage (currently used for parking) and parking bays on the opposite (western) side.

New road MC 07 is due to be complete in February 2018. Its intersection with The Hermitage Way will be a standard T intersection. It will have one traffic lane in each direction, with parking bays on both sides.

New road MC06 is due to be complete in April 2018. Its intersection with The Hermitage Way is a roundabout, which has already been constructed. In will have one lane of traffic flow in each direction. Along the school frontage, a drop off zone will be provided for use during school start and finish times and for parking at other times. There is no parking on the opposite side of the road.

At present the area around the school is relatively undeveloped. As part of the traffic management prepared for the precinct, Aecom have prepared reports on traffic volumes an intersection operation in the area. Refer to Appendix A for copies of reports.

Aecom have estimated the traffic volumes in the area for 2026, when full development of the precinct has occurred. In their estimations, they allowed for a 1,000 student school on the site with a staff of 50. They allowed for 390 trips by parents and 50 trips by teachers in the AM Peak. As the school finish time, and hence peak traffic period, occurs before the afternoon commuter peak, they did not allow for any traffic associated with the school in the afternoon commuter peak.

In their January 2016 memorandum, Aecom assumed that all school traffic arrived via MC06 and left via MC07. Since that time, a future roundabout has been proposed for MC06, which will allow parents to drop off at the bottom of the school, perform a U-turn at the roundabout and leave via MC06. This reduces traffic flows on MC07, which will become a collector road in the future.

The traffic volumes estimated by Aecom for the school site are potentially low. We have estimated that number of drops offs are 50 per 100 students, with Aecom estimating 39 per 100 students.

Aecom's analysis of the intersection of The Hermitage Way with new road MC06 and MC07 show a level of Service of A, the best level of service under RMS guidelines. While Aecom's estimation of traffic generated by parent drop off in the morning may potentially be low (at a rate of 39 trips / 100 students compared with our estimate of 45/100 students), the intersections do have capacity for the higher traffic volumes. Additionally, the addition of the roundabout on road MC06 will allow parents to enter and leave via the roundabout on The Hermitage Way, which will have greater capacity than the T intersection at MC07. Therefore, the road network has capacity to cater for the proposed school.

RMS requested that the impact of the development on the intersection of The Hermitage Way and Camden Valley Way be considered. As part of the planning for the precinct, Aecom analysed the intersection for the AM and PM commuter peaks. A copy of their report is presented in Appendix A. The analysis allowed for a school on the site and included school traffic during the AM commuter peak. School traffic was excluded from the PM commuter peak as it occurs earlier in the afternoon and does not impact on the commuter peak.

3.8 Pedestrians and cyclists

Pedestrian access to the school will be available from new roads MC06 and MC07. Footpaths along these roads will connect to the area wide cycle and shared path system.

The Gledswood Hills development includes 50km of cycle and shared paths. Links will be available from the school onto the path network. These paths, and the remainder of the network throughout the Gledswood Hills Precinct, will provide cycle and pedestrian access to the school.

To facilitate students and staff riding to school, bicycle storage racks will be provided, which allow students and staff to store and lock bicycles. At least 60 spaces will be provided at the school.

To facilitate staff walking or cycling to school, end of journey facilities, including lockers and showers, will be provided for staff.

3.9 After-hours activities

It is expected that the hall will be used for activities outside of normal school hours (8:30am to 3:30pm) on weekdays only, no weekend use expected. The type of activities, intended users and operating hours/days were based on feedback provided by the principal of Oran Park Public School (OPPS). This feedback included the use of the hall for after-hour activities such as OOSH Care and school events/rehearsals during the school week. Details on these activities is provided in Table 2 below.

It is not expected that the sports court will be used outside of normal school hours.

Table 2 – After Hours Activities for the Hall

Anticipated Activities	Intended Users	Operating Days	Operating Hours	Maximum number of expected attendees
OOSH Care	- School Children - Child care workers	Weekdays	6:45am – 6pm	22
School events / rehearsals	- School Children - Teachers - Parents	Weekdays	4pm – 10pm	500 Standing or 310 seated

The maximum number of expected attendees provided in Table 2 above was determined according to the following assumptions:

- It was assumed that the Out of School Hours (OOSH) care would cater for a maximum of 20 school children based on existing OPPS figures and two teachers.
- Expected school events/rehearsals include: dance clubs, band practice, performances, school discos, movie nights etc. The maximum number of expected attendees for a school event/rehearsal was based on the maximum standing capacity of the hall which is approximately 500 people or the maximum seating capacity of the hall which is 310. It is assumed that the maximum standing or seating capacity of the hall will be reached in large events involving multiple school grades, parents and teachers such as school discos (maximum standing capacity) and school award nights (maximum seating capacity).

Traffic generation

The Roads and Maritime Services' (RMS) *Guide to Traffic Generating Developments* gives traffic generation rates for before and after school care based on the number of children attending, this includes:

- 7am – 9am – 0.5 Peak Vehicle Trips per Child
- 4pm – 6pm – 0.7 Peak Vehicle Trips per Child

Applying the above rates with the maximum number of attendees from Table 1 above, gives 10 peak vehicle trips in the AM and 14 in the PM. This is summarised in Table 3 below.

The RMS' *Guide to Traffic Generating Developments* does not give advice on traffic generation for after-hours school events/rehearsals. Hence, the traffic generation for these events/rehearsals was based on the maximum number of expect attendees as detailed in Table 2 above.

For school events it is assumed that the maximum traffic flow would be generated in events such as a school disco where the maximum standing capacity is achieved or an award nights where the maximum seating capacity is achieved.

For a school disco it was assumed that 10% of the usage would be teachers/parents (approximately 50/50 split) and 90% school children As this event is to take place after school hours at night, it is assumed that all parents drive their children, and for worst case scenario, that all teachers drive separately. Hence the total number of vehicle trips is 475, as shown in Table 3 below.

For an awards night it was assumed that 5% would be teachers and the remaining 95% would be split 50/50 with parents and students. As this event is to take place after school hours at night, it is assumed that all parents drive their children, and for worst case, all teachers drive separately. Therefore the total number of vehicles trips is 236, as shown in Table 3 below.

Table 3 – Traffic Generation for After-hours Activities			
Anticipated Activities	**Maximum number of expected attendees**	**Peak vehicle trips**	
		AM	PM
OOSH Care	10 – 20 school children	10	14
School events / rehearsals	500 (School Disco)	-	475 (School Disco)
	310 (Awards Night)		163 (Awards night)

Impact of Traffic

The AM and PM peaks occur Monday to Friday between 8:20am – 9:20am and 2:45pm – 3:45pm. The after-hour school activities occur outside of these hours and therefore do not coincide/intensify these peaks.

For the OOSH Care it is assumed that parents will use the drop off/pick up zone which has space for approximately 28 vehicles (as per Section 3.3 above). This drop off/pick up zone will comfortably be able to accommodate the generated traffic shown in Table 3 above.

For events such as the school disco it is assumed that the parents/teachers attending the event (approximately 50) will park on-site (75 parking spaces available) and the remaining 425 trips would be parents dropping off their children via the designated drop off/pick up zone. It is further assumed students will be dropped off over a 30 minute period which will result in an average dwell time for each car of approximately 1.8 minutes. To ease pressure off the designated drop off/pick up zone, the new road MC07 and existing bus bay can also be utilised.

For events such as award nights, it is assumed that the parents and teachers will drive their children to school, park and attend the event. According to Table 2, this will involve 163 cars parking at the school. The school has 75 designated parking spaces on site including 58 staff parking spaces at the bottom of the site and 17 visitors spaces near the hall. It is assumed that once the onsite carparks reach capacity that parents will park in the 28 spaces provided in the designated drop off/pick up zone, the 10 spaces in the bus bay and 32 spaces along new road MC07. This gives a total number of parking spaces of 145. This results in a deficit of 18 spaces, which will require parents parking in the surrounding residential streets and walking to the school. However, this can be alleviated by the school encouraging carpooling when announcing these events.

4 Construction traffic

The main access to the construction site will be from Camden Valley Way via The Hermitage Way and new road MC06. Refer to Appendix B for Construction Traffic Management Plan.

Truck movements will occur throughout construction, with delivery of materials occurring on a daily basis, throughout the day. The largest number of truck movements is typically during concrete pours, when up to 30 trucks a day could be attending the site.

Contractors' vehicles will generally arrive in the morning and leave at the end of the working day. Additional movements of these vehicles may occur at lunch, with groups of contractors driving to the town centre to purchase food and drinks. Parking for contractors' vehicles will be provided on site, with entry and exit to the parking area from the main access on new road MC06. Based on 60 to 80 contractors on site on any one day, temporary parking will be provided for approximately 45-65 contractors' vehicles.

Pedestrian and cyclist routes past the site will be protected during construction where required. Fencing and/or hoarding in accordance with the relevant standards will be provided around the site to provide protection and prevent unauthorised access. Where works are required in the public domain, safe routes will be provided around the worksite, which will require a site specific management plan. All vehicles leaving the site and crossing a pathway will be required to be going forwards (and not reverse). At times when large pedestrian movements occur at a site access a traffic controller will be provided at the gate when vehicles arrive or leave.

5 Conclusion

The proposed new Public School will result in increased traffic volumes in the area compared with current volumes. However, the entire area is being progressively developed, with traffic volumes increasing throughout the area as new areas open and houses are constructed. Additionally, the site location was planned as a school site in all the development plans for the area, which allowed for traffic volumes associated with a school.

It is estimated that the school will require 5 school buses in the morning and 4 in the afternoon, however this will be determined by the school bus companies servicing the site as the school population increases.

The existing bus bay on The Hermitage Way is exclusively designed for dedicated school buses from the local catchment, as opposed to public buses. The bus bay is 58m long and can fit a maximum 3 buses. The standard practice of the bus companies is to space out the timing of buses arriving/leaving the school so that there is a maximum of three buses in a bus bay at any one time. Consequently, when there are more than 3 buses servicing the school in the morning or afternoon, the bus companies will space out the timing of the buses so that a maximum of 3 buses will be in the bus bay at one time.

A drop zone will be provided along New Road MC06, with space for 28 vehicles. Direct access is then available into the school.

A drop off zone for disabled students will be provided on new road MC07, adjacent to the main entry. This space will be sized to cater for a 16-22 seater mini-bus and footpath grades in the area will be compliant with disabled access requirements.

Parking spaces for 75 vehicles will be provided for the site, in accordance with Camden Council's requirements. The new parking areas will be in accordance with AS2890.1.

The network of pedestrian and cycle paths provided for the Gledswood Hills area will provide access to the school for cyclists and pedestrians. Bicycle storage facilities will be provided at the school to encourage this transport mode. End of trip facilities, including showers and lockers, will be provided within the school for staff, to enable use of sustainable transport measures.

It is expected that the hall will be used for activities outside of normal school hours (8:30am to 3:30pm) on weekdays only, no weekend use expected. These after-hour activities include OOSH Care and school events/rehearsals during the school week. It is not expected that the sports court will be used for activities outside of normal school hours.

The after-hour school activities occur outside of the AM and PM Peaks, consequently the traffic generated from these activities does not coincide/intensify these peaks.

The drop off/pick up zone will comfortably be able to accommodate the traffic generated by the OOSH Care. For events such as the school disco it is assumed that the parents/teachers attending the event will park on-site and the remaining parents would use the designated drop off/pick up zone.

For events such as award nights, it is assumed that the parents and teachers will utilise: on-site parking, drop off/pick up zones, the bus bay and new road MC07. To avoid potential deficits in parking, the school should encourage carpooling when announcing these events.

A Green Travel Plan has been developed for the site. Refer to Appendix C for details.

Appendix A

Aecom Traffic Statements

Appendix B
Drawings

Appendix C

Green Travel Plan