Schools Infrastructure NSW

Alexandria Park Community School

Transport Assessment – Modification 2

Issue 2 | 19 May 2020

Job number 256193

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ARUP

Contents

Appendices

Appendix A

Bicycle and Scooter Parking layout

1 Introduction

This Transport Assessment has been prepared by Arup on behalf of Richard Crookes Construction. The assessment has been developed to capture the changes to SSD 17_873 as part of Modification 2 which includes the extension of the football pitch across Park Road. It is a modification under clause 4.55 (2) of the EP&A Act.

This assessment concludes that the modification is substantially the same as the previously approved SSDA. The modification will not impact the trip generation in either of the school peak hours, which were the key time periods assessed as part of the SSDA. It is estimated out of hours trips relating to the football pitch can be accommodated within the previously proposed transport provisions.

1.1 Planning context

The original Transport Assessment was submitted as part of State Significant Development Application SSD 17_8373 in 2017. This assessed Alexandria Park Community School prior to it moving into temporary facilities to enable the construction of the new school buildings.

Due to the change of use outlined in Modification 2, it was deemed appropriate to update the SSD Transport Assessment. It should be noted that all data collected in 2017 is still presented as the base/existing scenario in this report as it represents the school when it was assessed as an SSDA.

As the extended football pitch will be available for community use outside of school operating hours (Monday to Friday 18:00 to 22:00, Weekends 08:00-22:00). The trip generation relating to this use has been considered as part of this assessment.

1.2 The Project

Modification 2 will involve the widening of the school football pitch so it extends across Park Road. The extension of the football pitch will require the existing footpath on Park Road to be amended to a shared path. As part of this modification a further section of Park Road would be closed north of the existing bus turnaround.

1.3 Scope

This report will be a Transport Assessment, to assess the changes within Modification 2. The general scope of works includes:

- Existing travel and parking conditions
- Existing travel behaviour of students and staff
- Generation of people and car trips relating to community use of the football pitch

- Car parking arrangements for community of the football pitch
- Demand for events using the football pitch after hours and on weekends
- Pedestrian and bicycle access to the football pitch

2 SEARS Report

A Secretary's Environmental Assessment Requirements (SEARs) report have been provided by the Department of Planning, Industry & Environment.

- Application Number SSD: 8373
- Proposal Name: Alexandria Park Community School Redevelopment
- Location: Park Road, Alexandria
- Applicant: Urbis, on behalf of the Department of Education
- Date of Issue 27 April 2017

The submission meets all the requirements of the SEARs in relation to the traffic and transport details. This is subject to several transport improvements for the efficient running of the school, which are detailed in this report. The following details in Table 1 responds to the requirements raised in the SEARs report.

Table 1: Secretary's Environmental Assessment Requirements and response

#	SEARs Report	Arup response
1	Include a transport and accessibility impact assessment, which details, but not limited to the following:	This report details a transport and accessibility impact assessment of the proposed school development and out of hours football pitch use
2	accurate details of the current daily and peak hour vehicle, public transport, pedestrian and cycle movement and existing traffic and transport facilities provided on the road network located adjacent to the proposed development;	Discussed in section 3 relating to 2017 data
3	an assessment of the operation of existing and future transport networks including the bus network and their ability to accommodate the forecast number of trips to and from the development;	Discussed in section 6
4	details of the estimated total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and cycle trips based on traffic surveys of similar schools, including the existing school on site;	Discussed in section 6
5	the adequacy of public transport, pedestrian and bicycle networks and infrastructure to meet the likely future demand of the proposed development;	Existing pedestrian and cycle network (A2MP to further improve cycling in the future) is considered adequate for the future school.
6	the impact of the proposed development on existing and future public transport infrastructure within the vicinity of the site in consultation with Roads and Maritime Services and Transport for NSW and identify measures to integrate the development with the transport network;	Discussed in section 4

#	SEARs Report	Arup response
7	details of any upgrading or road improvement works required to accommodate the proposed development;	Discussed in section 5.
8	details of travel demand management measures to minimise the impact on general traffic and bus operations and to encourage sustainable travel choices and details programs for implementation;	Discussed in the Green Travel Plant
9	the impact of trips generated by the development on nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for upgrading or road improvement works, if required (note: traffic modelling is to be undertaken with scope to be agreed by TfNSW and RMS in advance);	Discussed in the previous SSC Transport Assessment
10	the proposed active transport access arrangements and connections to public transport services;	The future connections to public transport will not differ from the current provision which is considered adequate.
11	details of proposed school bus routes along bus capable roads and infrastructure (bus stops, bus layovers etc.);	Discussed in section 3.6
12	the proposed access arrangements, including car and bus pick- up/drop-off facilities, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and bicycle networks, including pedestrian crossings and refuges and speed control devices and zones;	Discussed in section 1.1
13	measures to maintain road and personal safety in line with CPTED principles;	No changes to existing road network are proposed that would impact the safety of users.
14	the proposed car and bicycle parking provision, including end of trip facilities, which must be taken into consideration of the availability of public transport and the requirements of Council's relevant parking codes and Australian Standards;	Discussed in section 5.3
15	proposed bicycle parking facilities in secure, convenient, accessible areas close to main entries incorporating lighting and passive surveillance;	Discussed in section 5.3
16	details of the proposed number of car parking spaces and compliance with appropriate parking codes and justify the level of car parking provided on-site;	Discussed in section 5.2
17	details of emergency vehicle access arrangements;	Discussed in section 5.5
18	an assessment of road and pedestrian safety adjacent to the proposed development and the details of required road safety measures;	Existing pedestrian and cycle network (A2MP to further improve cycling in

#	SEARs Report	Arup response
		the future) is considered adequate for the future school.
19	service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times);	Discussed in section 5
20	in relation to construction traffic: assessment of cumulative impacts associated with other construction activities (if any);	Detailed in the CTMP appended to report
21	an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity;	
22	details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process;	
23	details of anticipated peak hour and daily construction vehicle movements to and from the site;	
24	details of access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle;	
25	details of temporary cycling and pedestrian access during construction;	
26	traffic and transport impacts during construction, including cumulative impacts associated with other construction activities, and how these impacts will be mitigated for any associated traffic, pedestrian, cyclists, parking and public transport, including the preparation of a draft Construction Traffic Management Plan to demonstrate the proposed management of the impact (which must include vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures for all demolition/construction activities).	

Relevant Policies and Guidelines:

- Guide to Traffic Generating Developments (Roads and Maritime Services)
- EIS Guidelines - Road and Related Facilities (DPIE)
- Cycling Aspects of Austroads Guides
- NSW Planning Guidelines for Walking and Cycling
- Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development Standards Australia AS2890.3 (Bicycle Parking Facilities)

3 Existing conditions

3.1 Study area

Alexandria Park Community School Park Road Campus is a Kindergarten to Year 12 School. The school is bounded by Buckland Street in the north, Park Road in the east and a shared pedestrian path connecting Belmont Street and Buckland Street in the west. Alexandria Park is located just east of the school which is segregated by Park Road. The location of the school is shown in Figure 1.

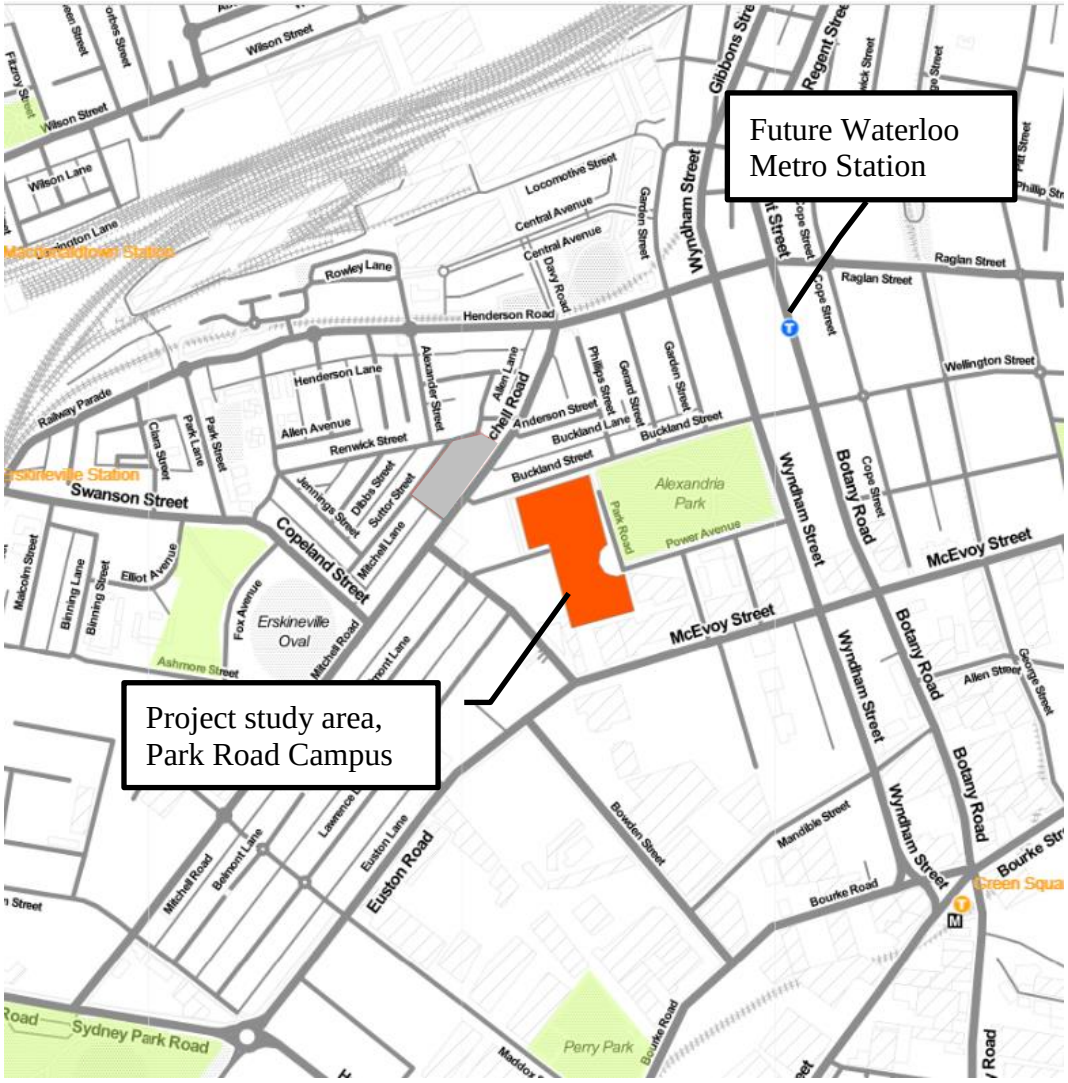


Figure 1: Site location map

3.2 Existing land uses

The existing land uses surrounding the site defined by the Sydney Local Environmental Plan (2012), as illustrated in Figure 2. There is a diverse range of General Residential, Mixed Use, Business Park, and Local Centre land uses surrounding the site.

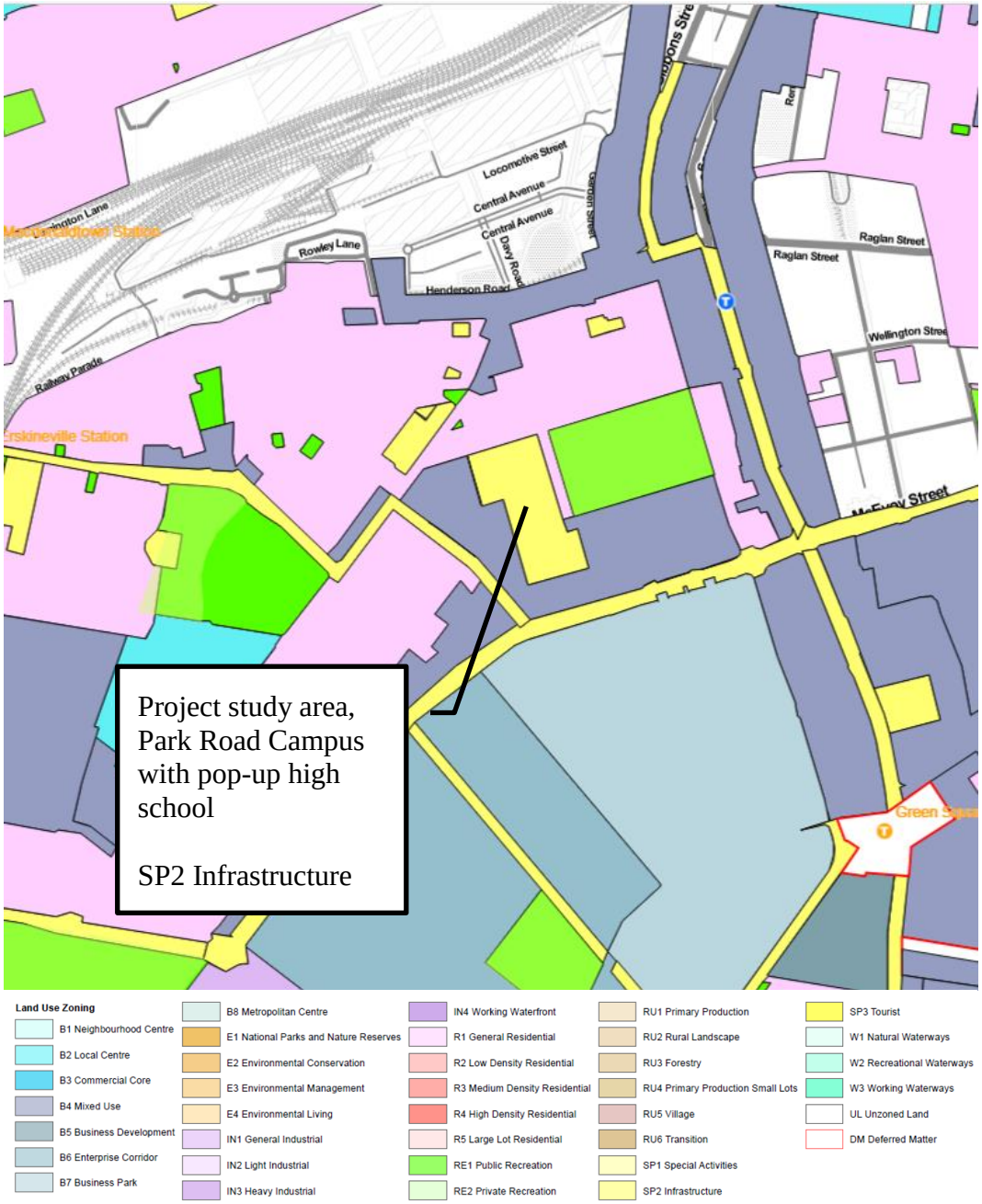


Figure 2: Land zoning map

3.3 Travel characteristics

3.3.1 Journey to Work

The travel characteristics of the workers in the local employment area are provided by the Bureau of Transport Statistics 2016 Journey to Work data. The data identified 1,279 people as working in the local travel zones that cover the Alexandria Park Community School. The mode split of those commuting to the area is presented in Figure 3.

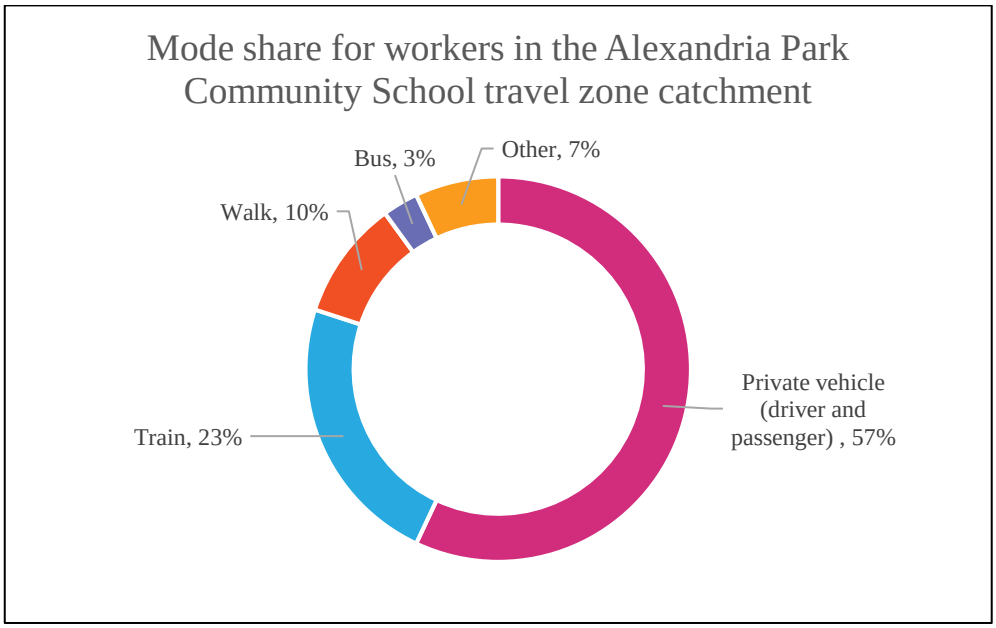


Figure 3: Journey to work mode share data for the local travel zones around Alexandria Park Community School (BTS 2016 Journey to Work[1])

Public transport accounts for over a quarter of all commuting trips to the area, with train use relatively high due to the proximity to Erskineville, Green Square and Redfern train stations (see Section 3.6 for additional detail). The levels of active transport (i.e. walking and cycling) are relatively low, however, given the anticipated future increase in residential population in the Erskineville and Alexandria area, this would be expected to improve.

Travel by private car is high, with workers likely utilising unrestricted parking on the surrounding streets.

[1] http://visual.bts.nsw.gov.au/jtwbasic/#258,257

3.3.2 2017 Site Surveys

Site surveys were carried out by Arup in 2017 to understand the volume and behaviour of drop-off and pick-up activity associated with Alexandria Park Community School. The surveys were carried out along Park Road, Power Avenue, Belmont Street and Buckland Street. Overall, the existing drop-off and pick-up arrangement was found to operate efficiently with parents following traffic rules and minimal double-parking occurrences observed.

Photograph 1: Park Road at 8.30am found to be quieter

Photograph 2: Park Road at 8.55 found to be busy but with a high turnover rate

AM Peak drop-off

The results of the AM peak period drop-off are presented in Figure 4 and Figure 5. The main findings from the surveys were:

- Between 8.15 and 9.15am, a total of 116 students were observed being dropped-off in 90 vehicles
- Approximately 75% of drop-off activity occurs along Park Road which is the main access to the primary school, with younger students typically being escorted into the building by parents
- Around half of all drop-off's take place between 8.45 – 9am
- Average car occupancy is 1.3 students per car
- The overall estimated student drop-off mode share is 20%
- On Park Road, unrestricted spaces are generally all occupied before 8.15 (not staff). The 15-minute parking is used for drop-off as well as to escort children into the school.
- Some informal drop-off occurs outside of the school entrance on Park Road and occasional double-parking to escorting children into the school (two times in total)

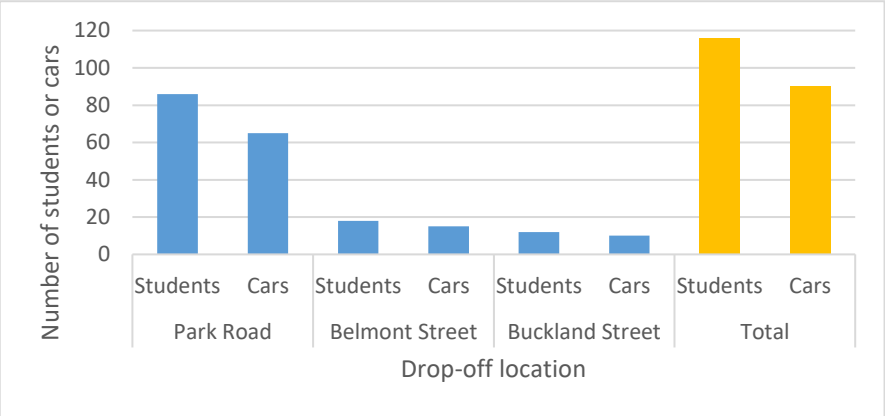


Figure 4: Alexandria Park Community School drop-off activity

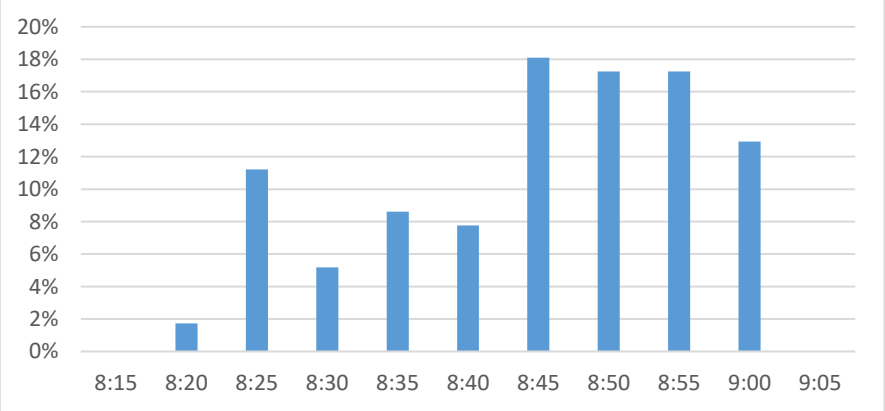


Figure 5: Alexandria Park Community School drop-off times

Afternoon Pick Up

The results of the AM peak period drop-off are presented in Figure 6 and Figure 7. The main findings from the surveys were:

- Primary school finishes at 3pm while secondary school finishes at 3.10pm.
- Between 3pm and 3.30pm, a total of 48 students were observed being picked-up in 36 vehicles, with almost all activity occurring between 3pm and 3.15pm.
- Pick-ups concentrated into shorter time period (3pm – 3.15pm), however volumes much lower than AM drop-off
- Most of the 15-minutes spaces on Park Road occupied at 3pm, with staff using 2 of the unrestricted spaces
- Some informal pick-up occurs in the bus turnaround area, while occasional double-parking noted all streets (three times in total).

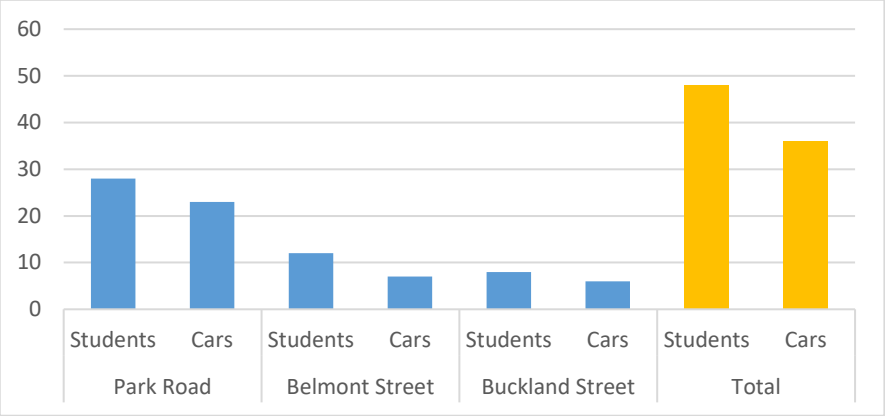


Figure 6: Alexandria Park Community School pick-up activity

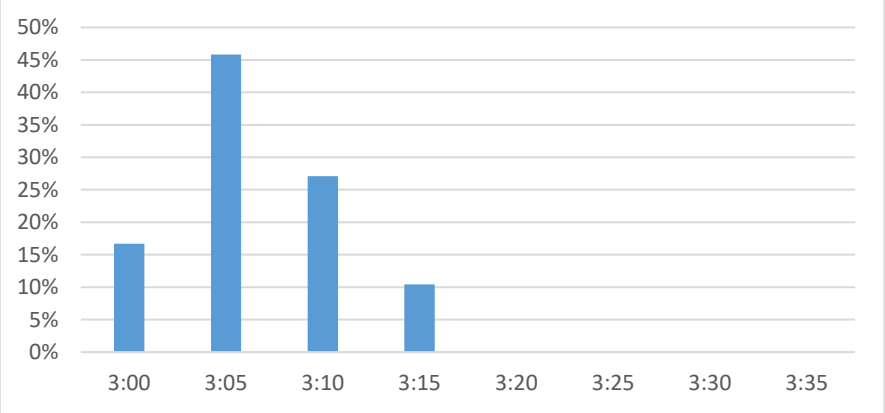


Figure 7: Alexandria Park Community School pick-up times

3.4 Existing Road Network

The study area is surrounded by a series of State and Regional roads, as illustrated in Figure 8. The key roads identified as supporting the primary access into the Alexandria Park Community School campuses include:

- Botany Road (State road)
- McEvoy Street (State road)
- Wyndham Street (Regional road)
- Mitchell Road (Regional road)

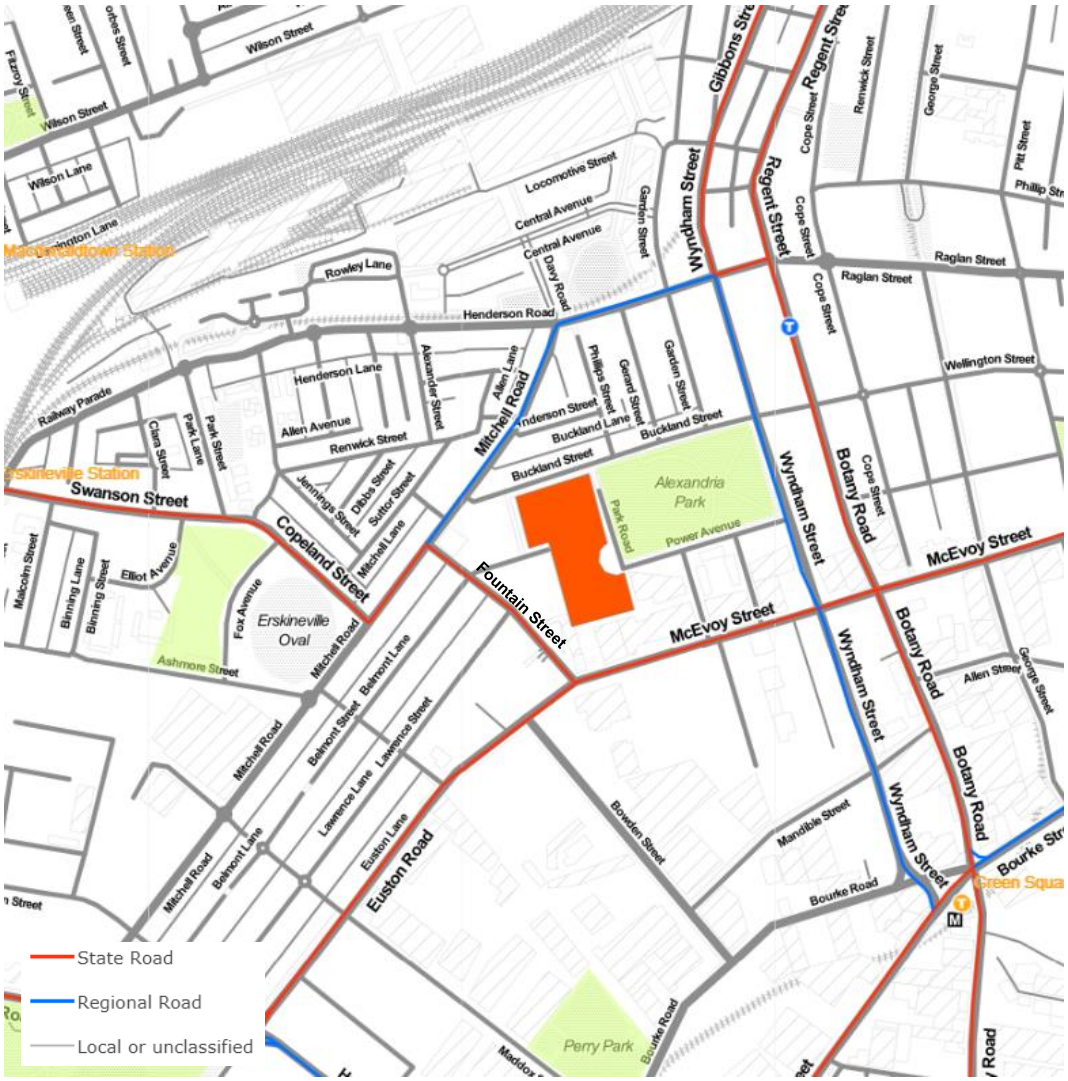


Figure 8: Road classification map

3.4.1 2017 traffic volumes

The 2017 two-way traffic volumes in the surrounding road network are shown in Figure 9, from 8:00am to 9:00am. This morning peak period coincides with the morning commuter peak traffic and the school drop-offs and was found to be higher than the afternoon school peak from 2:00pm to 3:00pm. The AM traffic volume numbers will therefore be used for quantitative traffic modelling further discussed in section **Error! Reference source not found.**.

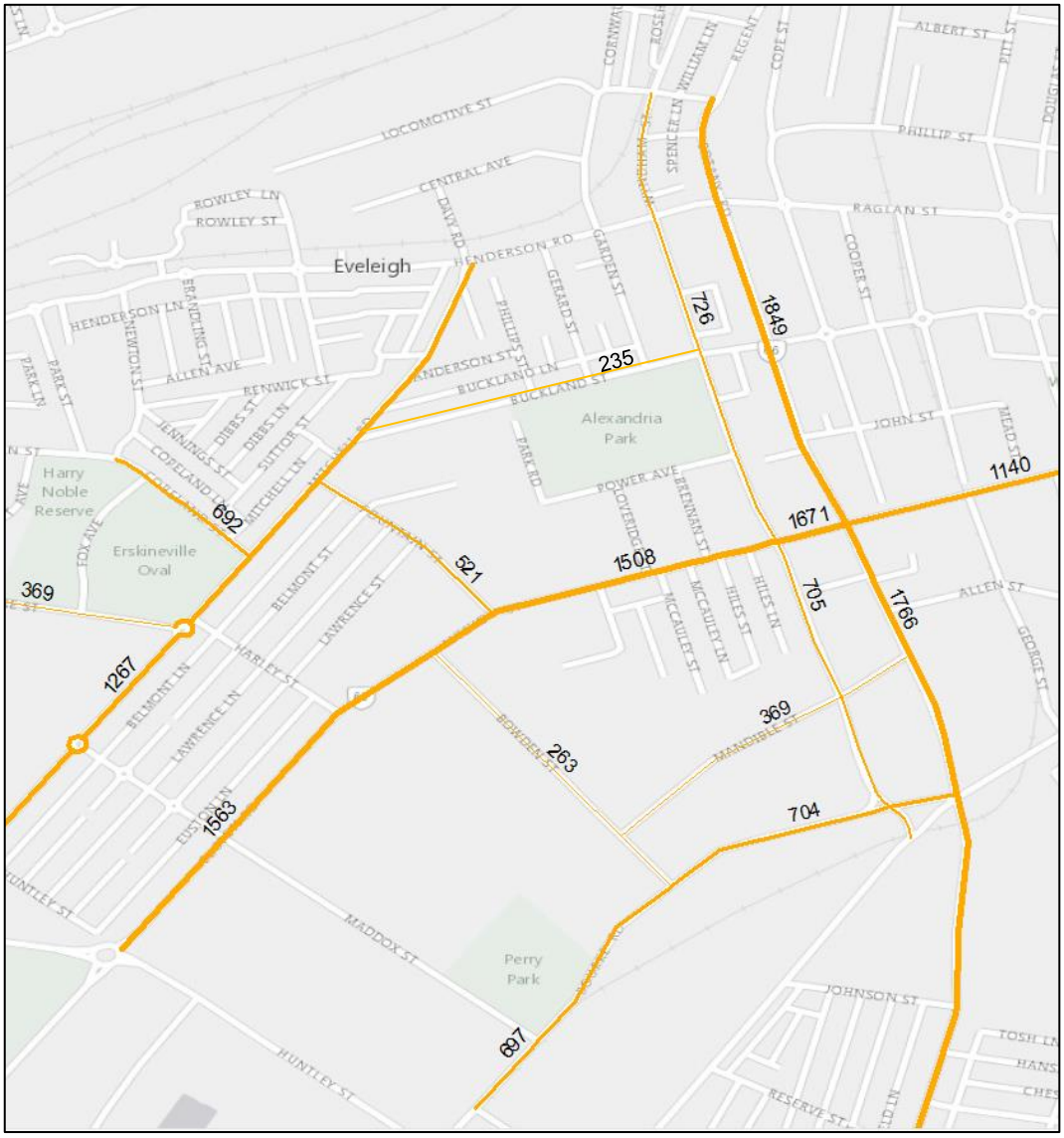
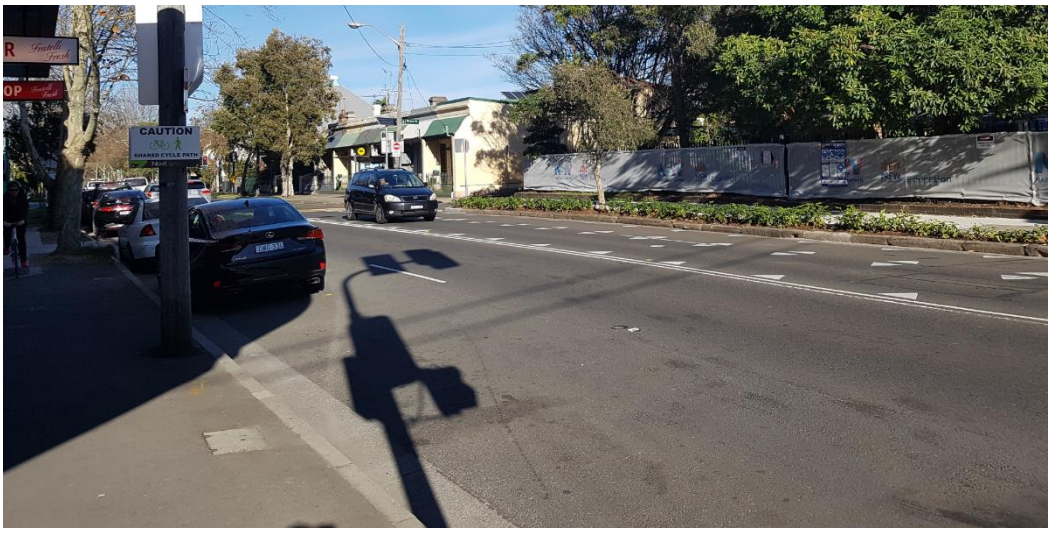


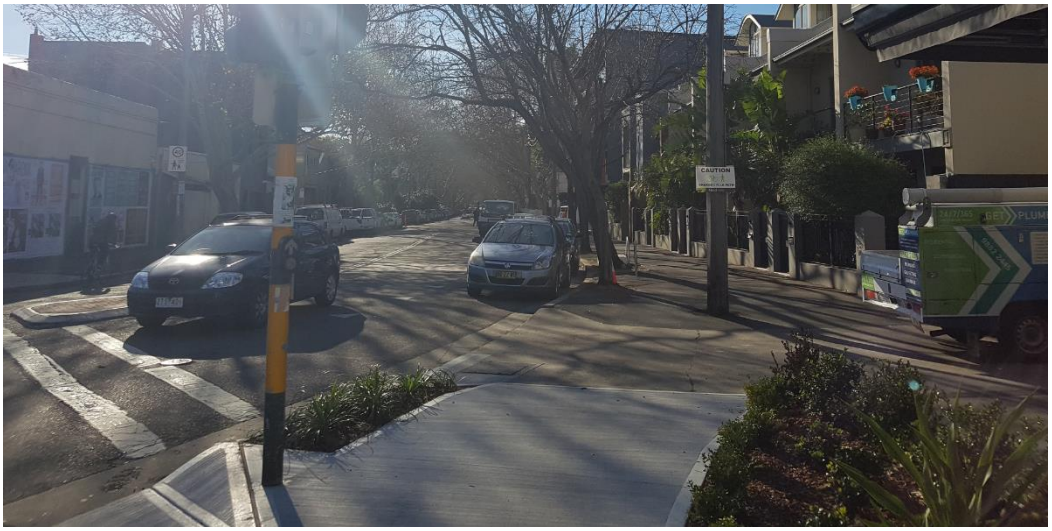
Figure 9: Two-way traffic volumes for the 2017 morning peak hour from 8:00am to 9:00am

3.4.2 Mitchell Road

Mitchell Road, near the intersection of Buckland Street was found to operate efficiently with little to no queuing or congestion issues. No right turns are permitted out of Buckland Street. Traffic volume surveys collected in August 2017 indicated that 1,074 vehicles were travelling along Mitchell Road in either direction.



Photograph 3 Mitchell Road facing south. No significant northbound queues were observed



Photograph 4 Mitchell Road / Buckland Street intersection, facing Buckland Street. Minimal queuing and traffic volumes were observed.

3.4.3 Buckland Street

Buckland Street has shared cycling and pedestrian footpaths along the southern side of the road. Traffic volumes are generally low and mainly from residents. Limited drop-off and pick-up activity was observed along Buckland Street during the site visits, likely due to the existing on-street parking spaces being fully occupied. Unrestricted parking can be found on the southern side of the street fronting the school, and 2P (8am-6pm Mon-Fri) Permit holders excepted restrictions on the northern side.

Photograph 5 Buckland Street facing east at 8:30am

Photograph 6 Buckland Street facing west at 8:45am

3.4.4 Wyndham Street

Wyndham Street near the intersection of Buckland Street was found to have a slow rolling northbound queue during the AM peak. The congestion is caused by downstream intersections towards the city. At certain periods, northbound vehicles were unable to cross the intersection as a result of the vehicles queuing up to the intersection shown in the photographs below. Queue lengths along Buckland Street west of Wyndham Street were observed to be minimal.

Photograph 7 Wyndham Street / Buckland Street, facing north. Vehicles queued to the intersection at 8:50am

Photograph 8 Buckland Street queues at the Wyndham Street / Buckland Street intersection at 9:00am

3.5 Crash data

Historical crash data was provided by RMS from 2012 to 2017. In the five years, no injuries or pedestrian incidents were recorded along Power Avenue, Park Road or Belmont Street. One pedestrian related incident was recorded along Buckland Street at the intersection of Gerard Street. A majority of the crashes occurred along McEvoy Road.

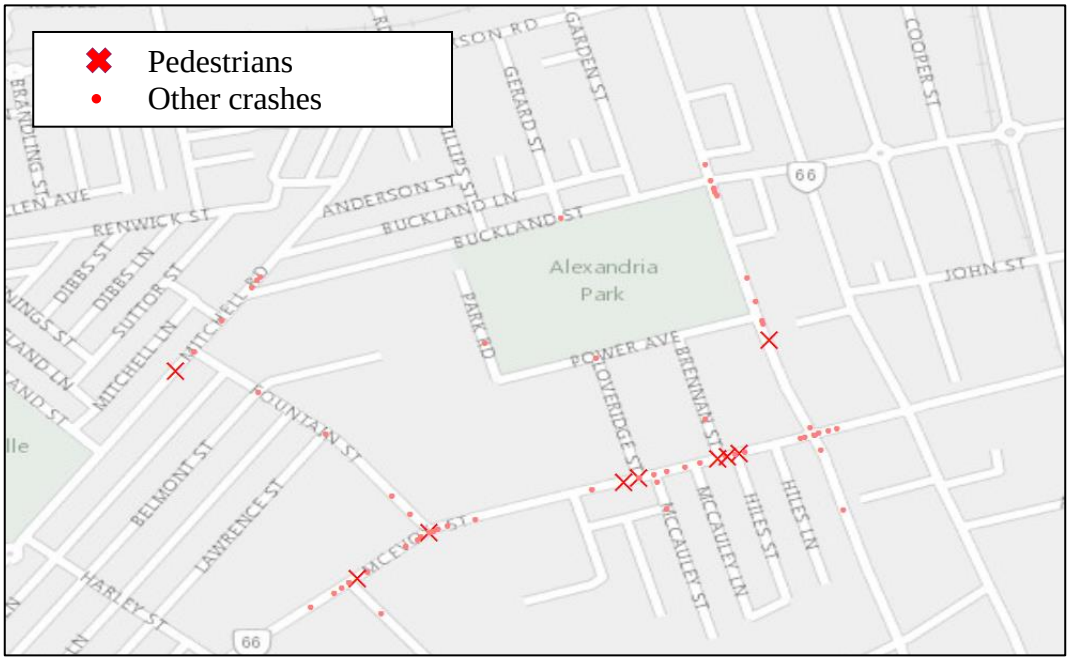


Figure 10: Pedestrian related crashes

Figure 11: Crashes which resulted in injuries

3.6 Public transport

The existing public transport offering in the area consists of rail and bus (public and special school/community services) and is described in further detail in the following sections.

3.6.1 Sydney buses

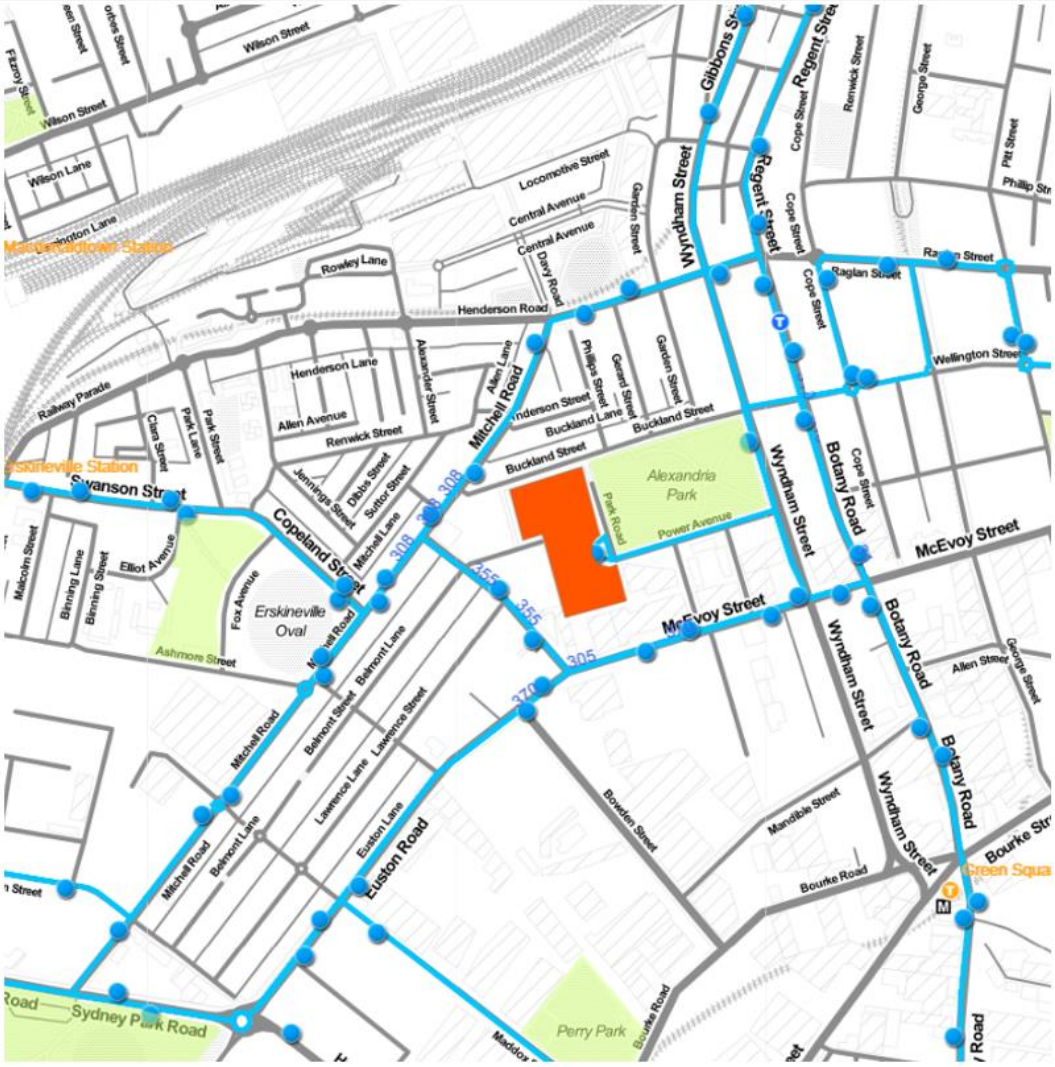


Figure 12: Public bus infrastructure map

The school is served by the following bus services:

- From the city, the 309 stops on Botany Road while the 308 stops on Mitchell Road.
- From the south, the 309 stops on Botany Road.
- From the east, the 355 stops outside the school on Park Road while the 370 stops on McEvoy Street.
- From the west, the 308 stops on Mitchell Road, the 355 stops outside the school and the 370 stops on McEvoy Street.

Table 2: Bus route frequency

Bus route	Bus frequency during school day peak (8-9AM, 3-4PM)
305	2 in AM, 2 in PM (using Redfern as reference)
308	6 in AM, 4 in PM (using St Peters Station as reference)
309	12 in AM, 12 in PM (using Central Station as reference)
355	3 in AM peak, 3 in PM peak (stops at Alexandria school on weekday peaks)
370	12 in the AM peak, 9 in the PM peak (using Green Square as a reference)

Bus route 355 stops directly outside the school along the bus loop and provides service between Marrickville Station and Bondi Junction Interchange. Arup conducted school bus occupancy surveys Thursday 15 June 2017 with the following findings:

- The bus arrives once in each school peak hour
  - 8:35am: 5 students alighted
  - 8:56am: 4 students alighted
  - 3:22pm: 10 students boarded
  - 3:37pm: 5 students boarded

Public buses were generally not utilised by students and staff.

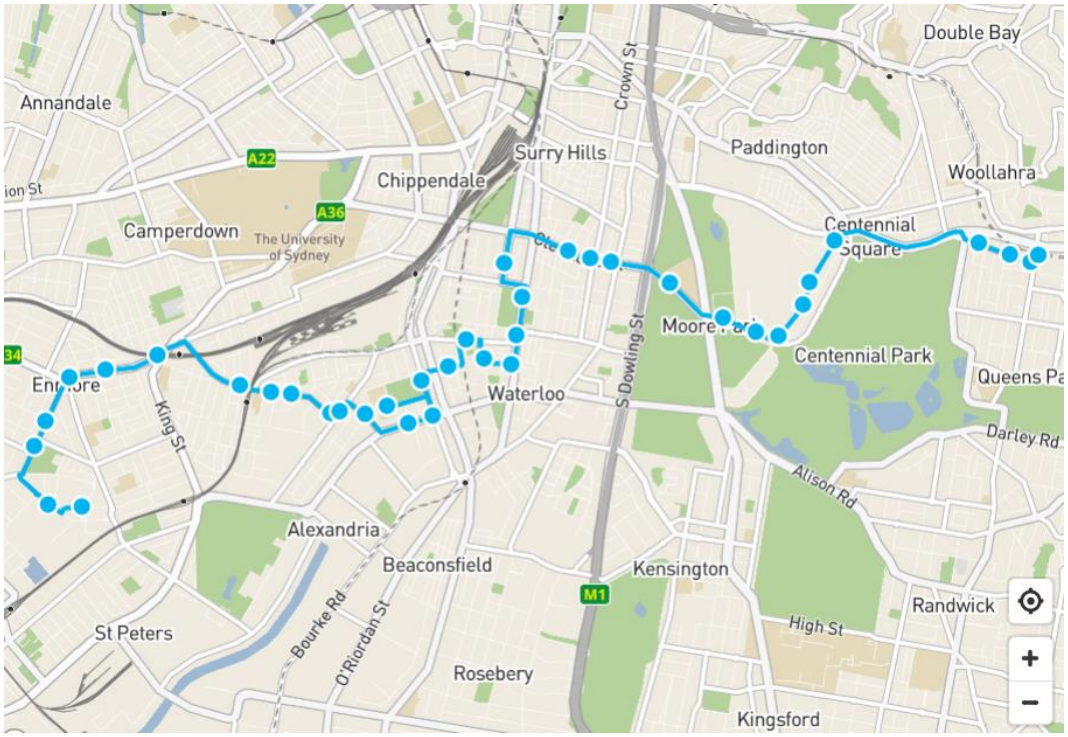


Figure 13 355 Bus Route Marrickville Metro to Bondi Junction

3.6.2 School bus

School bus 750E currently operates to the school, Waterloo Station and Redfern Station, with the route shown in Figure 14. Arup conducted school bus occupancy surveys Thursday 15 June 2017 with the following findings:

- The bus arrives once in each school peak hour
  - 8:45am: 35 students alighted
  - 3:20pm: 25 students boarded

School buses typically have 43 seats and can accommodate up to 60 students standing. The existing school bus has additional capacity to accommodate more Alexandria Park Community School students. However, the school bus also serves other schools which need to be consulted with, along with TfNSW, should there be an increase in patronage.

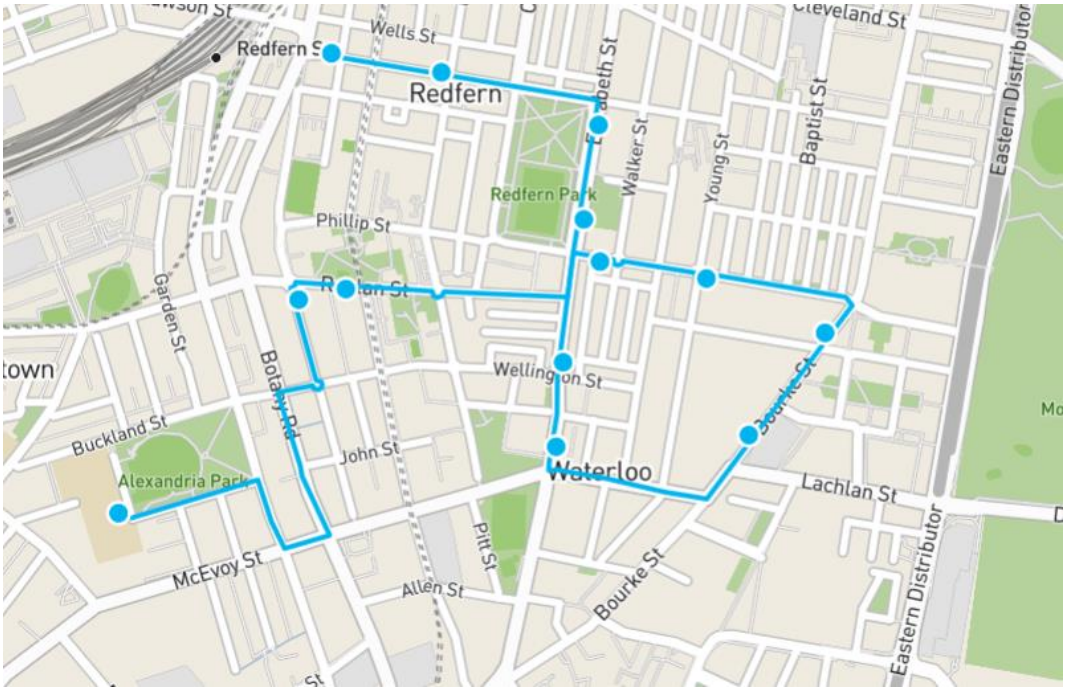


Figure 14 750E School Bus Redfern and George Street to Alexandria Park School

Photograph 9: Students boarding school bus 750E

3.6.3 Train

Alexandria Park Community School is easily accessible to multiple train stations. The campuses are within a 15 minute walk to Redfern, Erskineville and Green Square Railway Stations.

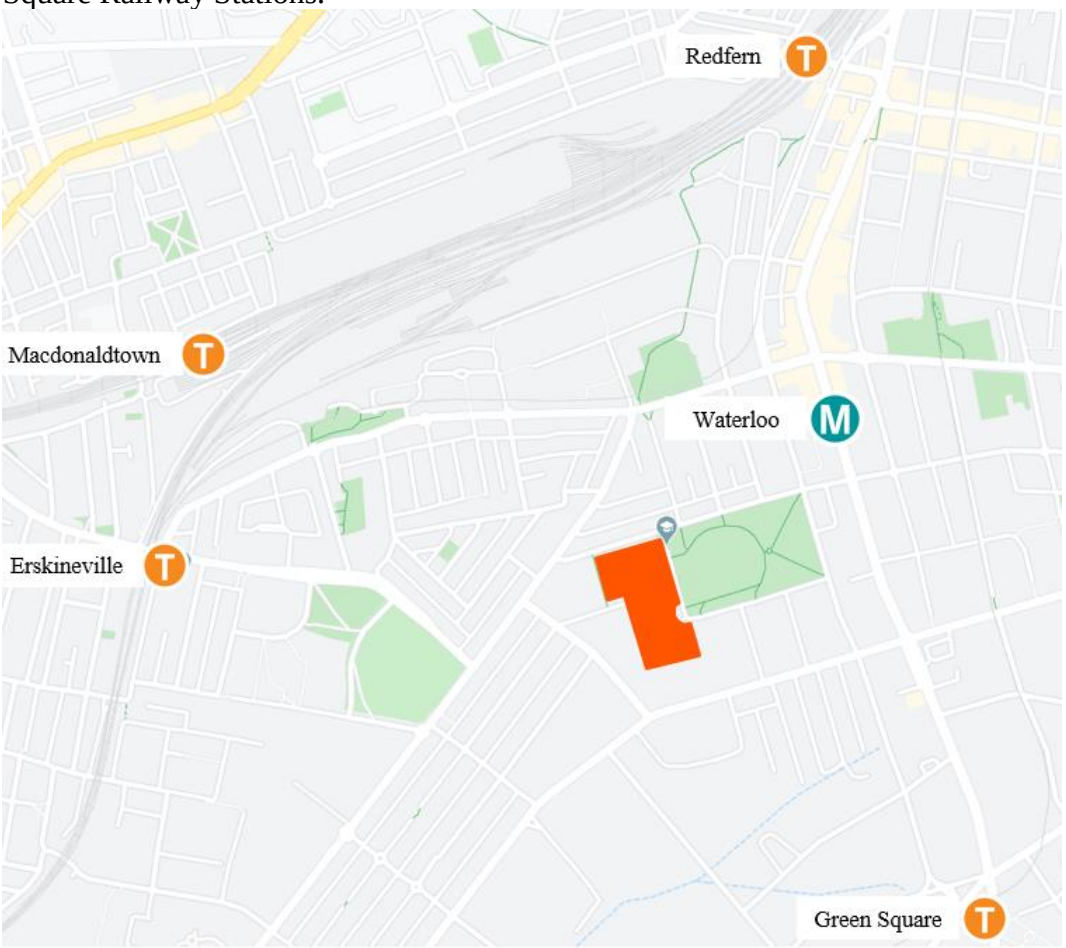


Figure 15: Train infrastructure map

The accessibility to Redfern Railway Station provides high frequency services during peak and off peak periods to a large number of rail routes, including:

- T1 North Shore, Northern and Western Line
- T2 Airport, Inner West and South Line
- T3 Bankstown Line
- T4 Eastern Suburbs and Illawarra Line
- T8 Airport and South Line
- T9 Northern Line

3.7 Active transport

3.7.1 Cycling

The cycling facilities surrounding the site are illustrated in Figure 16, identifying dedicated bicycle lanes, shoulder lanes and mixed traffic roads suitable for riders. The overall cycling infrastructure surrounding the school is robust with good cycling connections in each direction. The residential streets around the school are bicycle friendly with low traffic volumes observed.

Figure 16: City of Sydney Green Square Cycling Map

Photograph 10: Primary school student cycling after school

3.7.2 Walking

The streets surrounding the school sites have good pedestrian accessibility and infrastructure with good quality zebra crossings, footpaths and ramps.

Park Road has a pedestrian crossing across the bus turnaround that facilitates the school (see Photograph 11) allowing safe pedestrian movements towards Buckland Street. A pedestrian crossing is also located on the corner of Park Road and Power Avenue, between the school and Alexandria Park (see Photograph 12). These crossings ensure the safe movement of children to and from the school. A significant number of students were observed walking to and from the school, both accompanied by a parent and unaccompanied.

Photograph 11 Pedestrian crossing at bus turnaround

Photograph 12 Pedestrian crossing across Power Avenue

Photograph 13 Pedestrian path through Alexandria Park. Photo shows a traffic warden assisting students in crossing the roads.

Photograph 14 Pedestrians along Buckland Street

3.8 On-street parking provision

3.8.1 Capacity and restrictions

The existing parking restrictions and supply on streets which border the school site are presented on Figure 17.

Figure 17: Kerbside restrictions on streets bordering the school

Since the 2017 SSD, a section of Park Road has been permanently closed to create a playground for the school.

On the remaining section of Park Road, the eastern side has a section of 2P (9:30am-2pm, 4pm-6pm) with a P15 restriction applying in school peak hours with space for three vehicles. The 2P restriction also applies on a small section on the southern side of Power Avenue. At school peak times a 'No Parking' restrictions applies here.

Belmont Street acts as a drop-off and pick-up zone for the Senior Campus with the a P15 Minute restrictions in place for three bays on the north side of the street. The remainder of Belmont Street is comprised of unrestricted parking, with 21 bays in total. The entrance to the staff car park is also located on Belmont Street (28 spaces).

On Buckland Street, between Mitchell Road and Phillips Road, there are 31 unrestricted parking bays on the south side of the road, and a further 27 2P parking bays on the north side of the road. These parking bays were observed to be full during the morning peak. Power Avenue has 64 unrestricted parking bays, the majority of which were observed to be full during the morning and afternoon peak.

3.8.2 Occupancy

3.8.2.1 School periods

Arup conducted an on-street parking survey during school hours on 15 June 2017. Key findings were:

- Unrestricted on-street parking spaces on local roads near the school were either at or close to capacity at 9:30am.
- These unrestricted spaces remained at a similar level of occupancy at 2:55pm before school finishes.

Photograph 15: On-street unrestricted parking spaces along Power Avenue found to be close to capacity on Thursday at 2:56pm

Photograph 16: On-street unrestricted parking occupancy along Loveridge Street found to be close to capacity on Thursday at 2:56pm

3.8.2.2 School holidays 2017

Arup conducted on-street parking surveys during school holidays on:

- Wednesday 12 July 2017 10:00am: Surveys identify number of residents and employees (not including teachers) parked on -street
- Wednesday 12 July 2017 8:00pm: Surveys identify number of residents parked on-street once employees have left the precinct
- Thursday 13 July 2017 10:00am: Surveys identify number of residents and employees (not including teachers) parked on -street

Surveys included recording number plates to ascertain the number of parking spaces utilised by residents, compared to staff of the surrounding industrial dwellings. The number of unoccupied spaces on each road along with the maximum available capacity is shown in Table 3.

The data shows that some 96 spaces were available during the PM survey, indicating that some 27% of the existing spaces were used by employees (no teachers were parked during this time). Surveys also showed that Park Road was fully occupied during the AM period despite teachers not working during school holidays. This shows that vehicles using Park Road predominantly consist of employees of surrounding businesses rather than teachers.

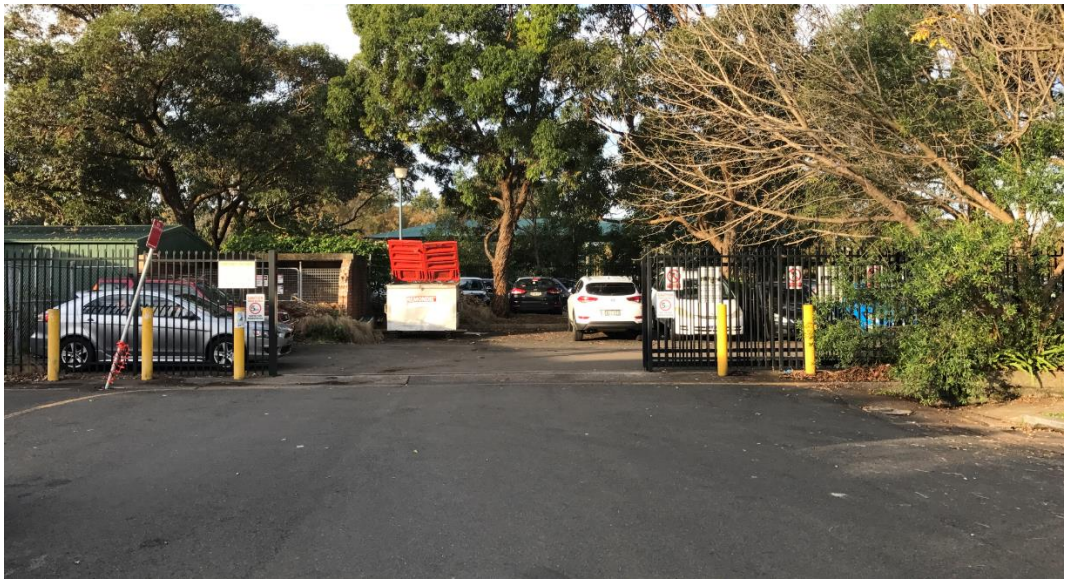
Table 3: On-street parking occupancy survey

Road	Capacity	Number of empty spaces surveyed		
		Wed AM	Wed PM	Thu AM
Park Road	32	1	26	5
Power Avenue	64	0	25	3
Loveridge Street	32	1	6	1
Brennan Street	33	1	0	2

Road	Capacity	Number of empty spaces surveyed		
		Wed AM	Wed PM	Thu AM
Wyndham Street	66	0	12	0
Buckland Street	107	2	24	7
Belmont Street	25	1	3	0
Total	359	6	96	18

3.9 Off-street staff parking

The staff car park is located along Belmont Street and has 28 unmarked parking spaces allocated to staff. Site visits carried out on Thursday 15 June 2017 indicated that the car park was fully occupied.



Photograph 17: Staff parking entry along Belmont Street

Photograph 18: Existing staff car park

3.10 Existing School Entrances

There are three access points to the school campus at present as described below and shown in Figure 18:

- Primary School – main access at corner of Park Road and Power Avenue. Bus turnaround and pick-up/drop-off also located there.
- Secondary School – main pedestrian access is on Buckland Street, with an additional access off Belmont Street. The staff car park is located at the end of, and accessed from, Belmont Street. The Wunanbiri Pre-School is accessed via Belmont Street also.

Figure 18: Pedestrian entry locations

4 Future Upgrades

4.1 Sydney Metro

By 2024, the Sydney Metro is expected to be operating and running from Sydney's North West region under Sydney Harbour, through new underground stations in the CBD and beyond to the south west. Trains will operate at a four minute frequency during peak times. Indicative travel times from Waterloo are two minutes to Central Station and six minutes to Martin Place Station. The Chatswood to Sydenham section of the Sydney Metro has been approved and includes a new station at Waterloo.

This station will be accessed via the corner of Raglan and Cope Streets, about a 10 minute walk from the Park Road school entrance. The route shown in Figure 19 has a comprehensive network of footpaths and pedestrian crossing facilities.

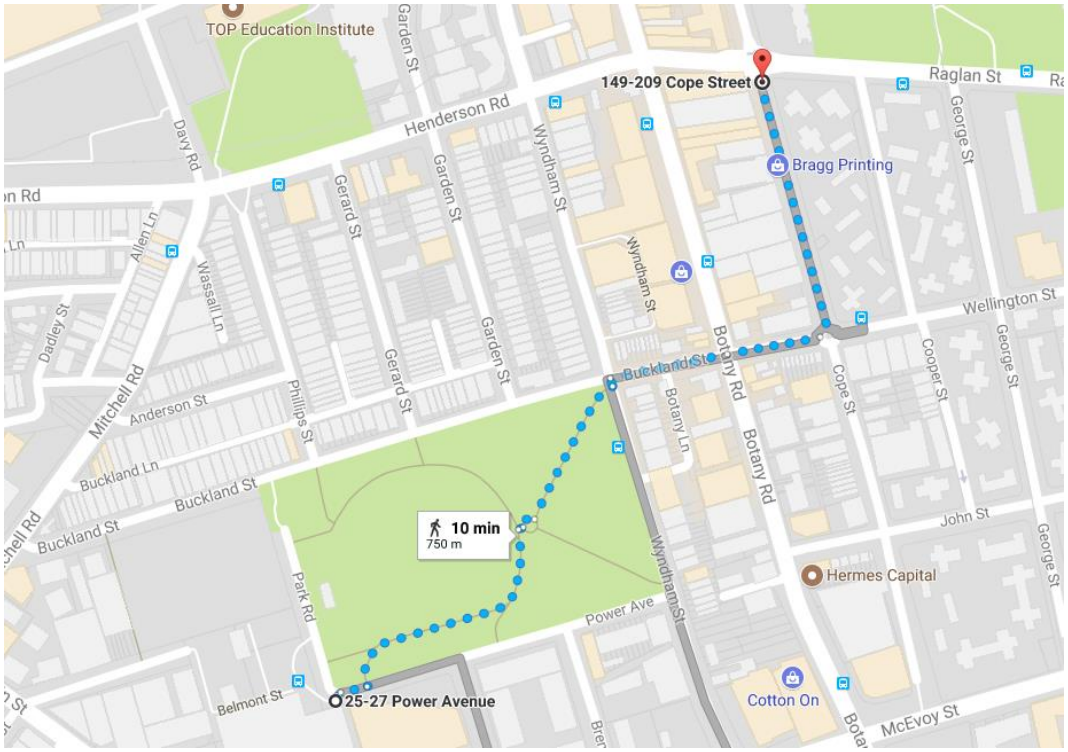


Figure 19: Walk time from the school to the future Waterloo Metro Station

4.2 Green Square

Green Square is an urban renewal project which will see the creation of a new town centre and result in over 30,000 residential dwellings. By 2030, Green Square is expected to be home to 61,000 new residents and 22,000 new workers. The school is a 12 minute walk from Green Square train station.

4.3 Alexandria to Moore Park Connectivity Upgrade

The Alexandria to Moore Park Connectivity Upgrade includes improvements to traffic capacity at key intersections and pinch points to improve traffic flow and provide better access for pedestrians and cyclists. These improvements are being planned to integrate with the CBD and South East Light Rail and WestConnex New M5 projects. The proposed upgrades would improve traffic flows to and from the school.

By 2021 traffic volumes along this key corridor are projected to grow by 50% or more in peak periods. The proposed improvements will support urban renewal along the corridor and encourage motorists to use alternate routes away from the CBD, a key focus of the Sydney City Centre Access Strategy (Transport for NSW, 2013).[2]

In the vicinity of the school, the key features of the proposal include:

- Pedestrian and cyclist improvements for the length of the corridor and clearways on both sides of the corridor for extended periods
- Upgrades at the Fountain Street and Botany Road intersection with McEvoy Street
- A median to be introduced along McEvoy Street

This report has used the Submissions Report relating to Stage 1 (released April 2020) as the basis for the assessment.

[2] Source: RMS website

5 Proposed Development

Modification 2 will widen the school football pitch to adhere to FIFA standards. Due to this the pitch will extend across Park Road and the footpath will be amended to a shared path. A further section of Park Road will be closed north of the bus turnaround. Two pedestrian accesses to the pitch will be provided on the north east and south east corners. The revised extent of the football pitch is presented in Figure 20.

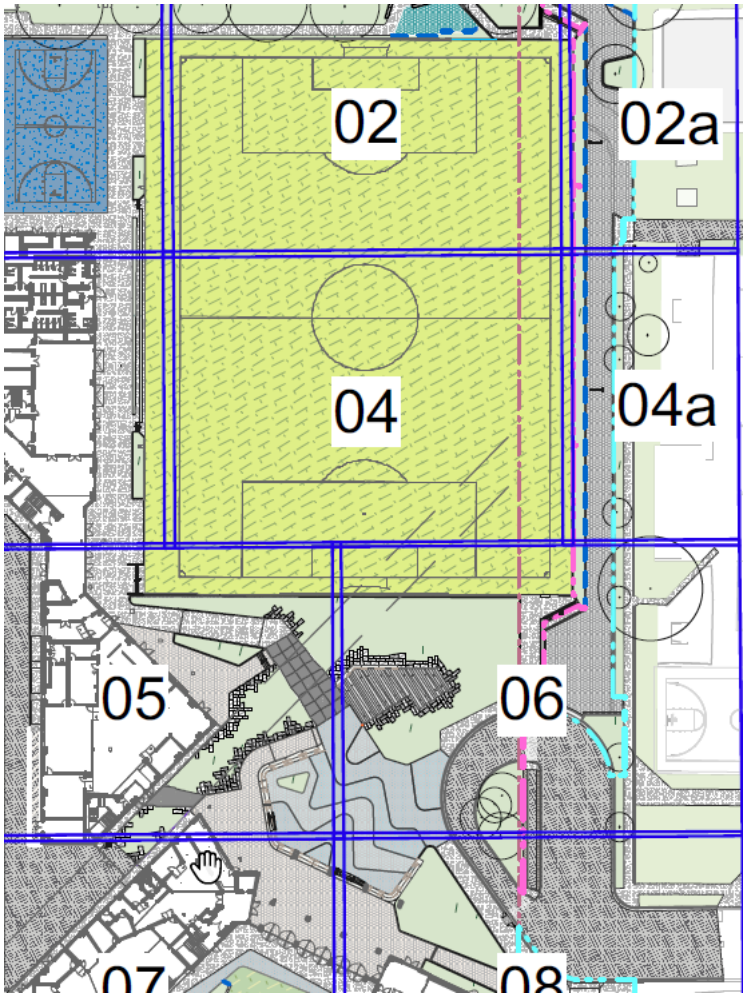


Figure 20: Modification 2 scheme layout

5.1 Road closure

A large section of Park Road has already been closed to accommodate a play zone for the school. To accommodate the revised extents of the football pitch a further section of Park Road will need to be closed removing all kerbside provision north of the bus turnaround. 'No parking' restrictions currently on the further section of Park Road to be closed so it is no expected to a negligible impact of parking supply in the local area. The adjustment to the existing carriageway is presented on Figure 21.

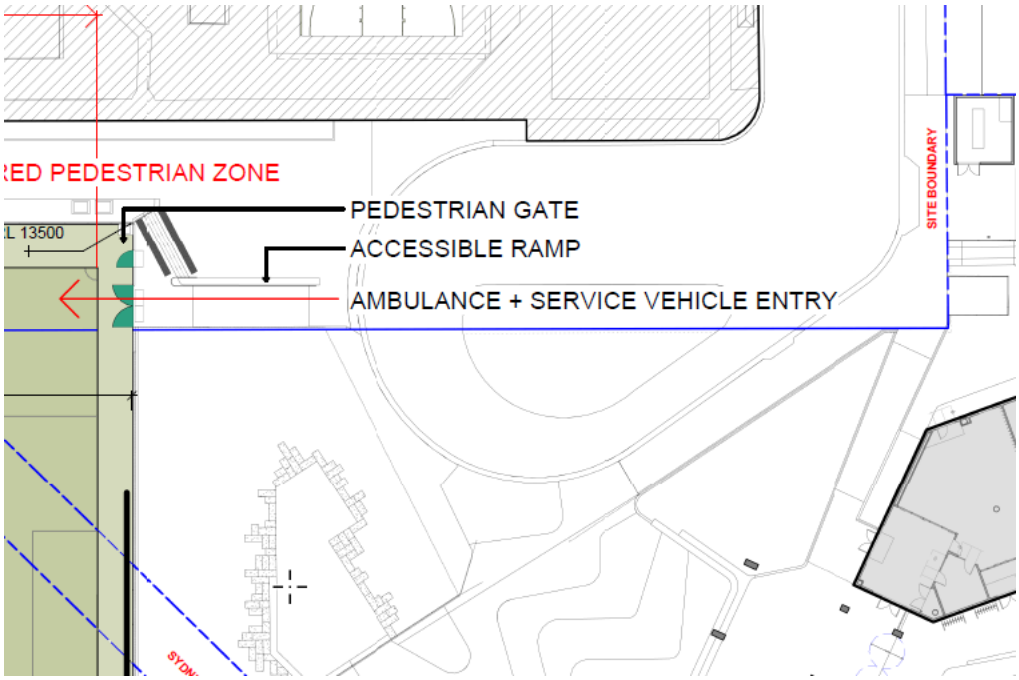


Figure 21: Adjustment to Park Road carriageway

It is noted that following the submission of Modification 2, a Traffic Management Plan would need to be lodged with Council to confirm the additional road closure of Park Road.

The remaining footpath to the west of the football field would be converted to a shared pedestrian zone.

5.2 Car Parking

No new parking is proposed as part of Modification 2. It is expected that users of the football pitch may use the school staff car park which has 28 spaces.

5.3 Bike parking

No additional bicycle parking is proposed as part of Modification 2. A number of bicycle rails will be provided throughout the school campus which could be used by people accessing the football pitch out of hours. Due to this provision it is not deemed the football pitch would require any additional cycle parking.

Appendix A presents the current plan for the layout of bicycle parking within the new school.

5.4 Service access

The football pitch is no expected to generate many servicing trips. However, the servicing arrangements would be the same as the school. The proposed service area is located off Belmont Street, with an area provided to allow vehicles to reverse into the laneway. The area has been designed to accommodate a standard sized 9.25m City of Sydney Garbage vehicle as shown in

Figure 22. This area is also designated to serve emergency vehicles.

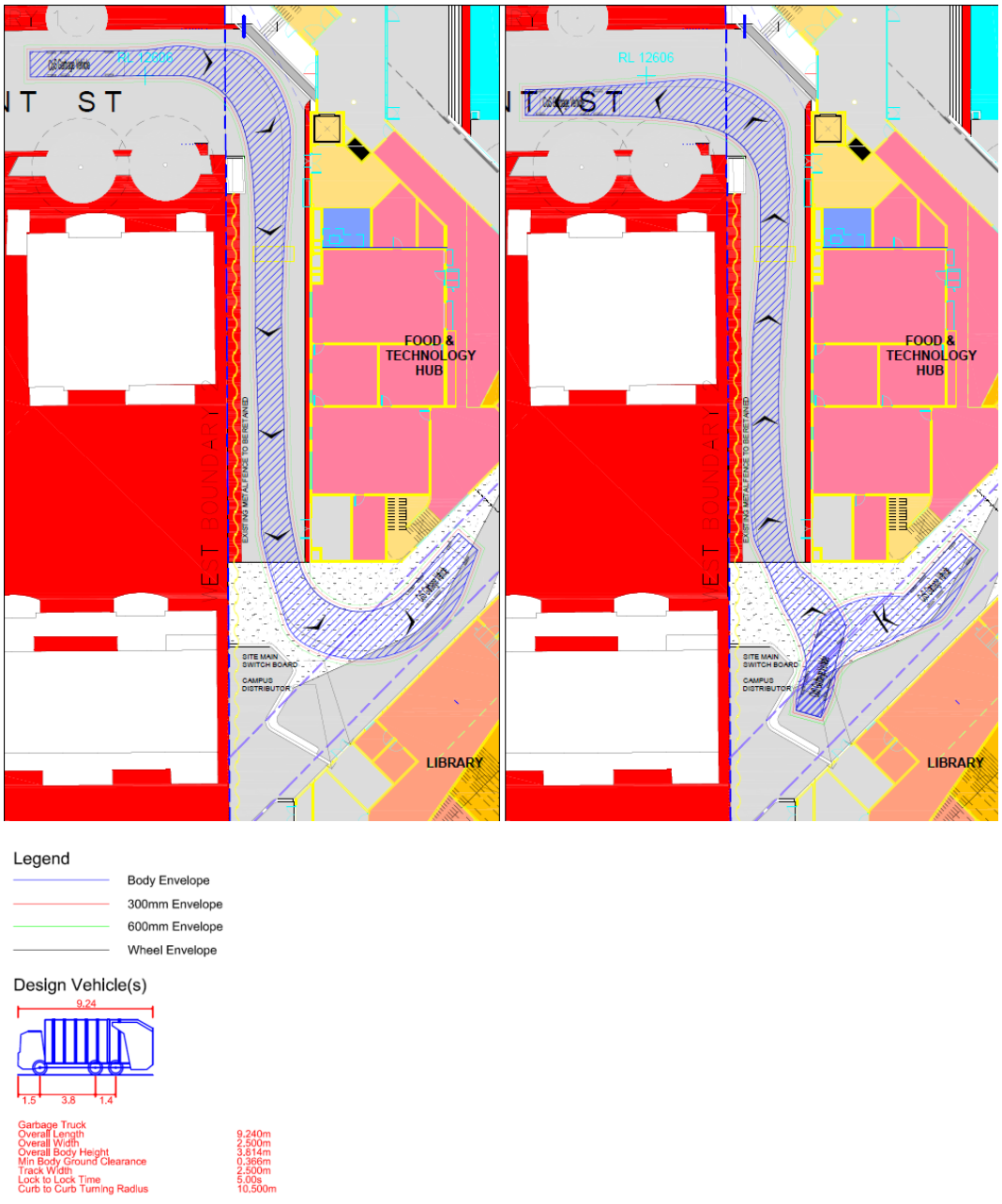


Figure 22 Garbage vehicle swept path

5.5 Emergency vehicles

Emergency vehicle access for the football pitch will be the same as the plans for the new school.

Emergency vehicles will access the fire pump room via Power Avenue. The area has been designed to accommodate a 12.5 HRV Fire Aerial Appliance vehicle as shown in Figure 23. The truck is shown utilising the existing bus loop to exit the site.

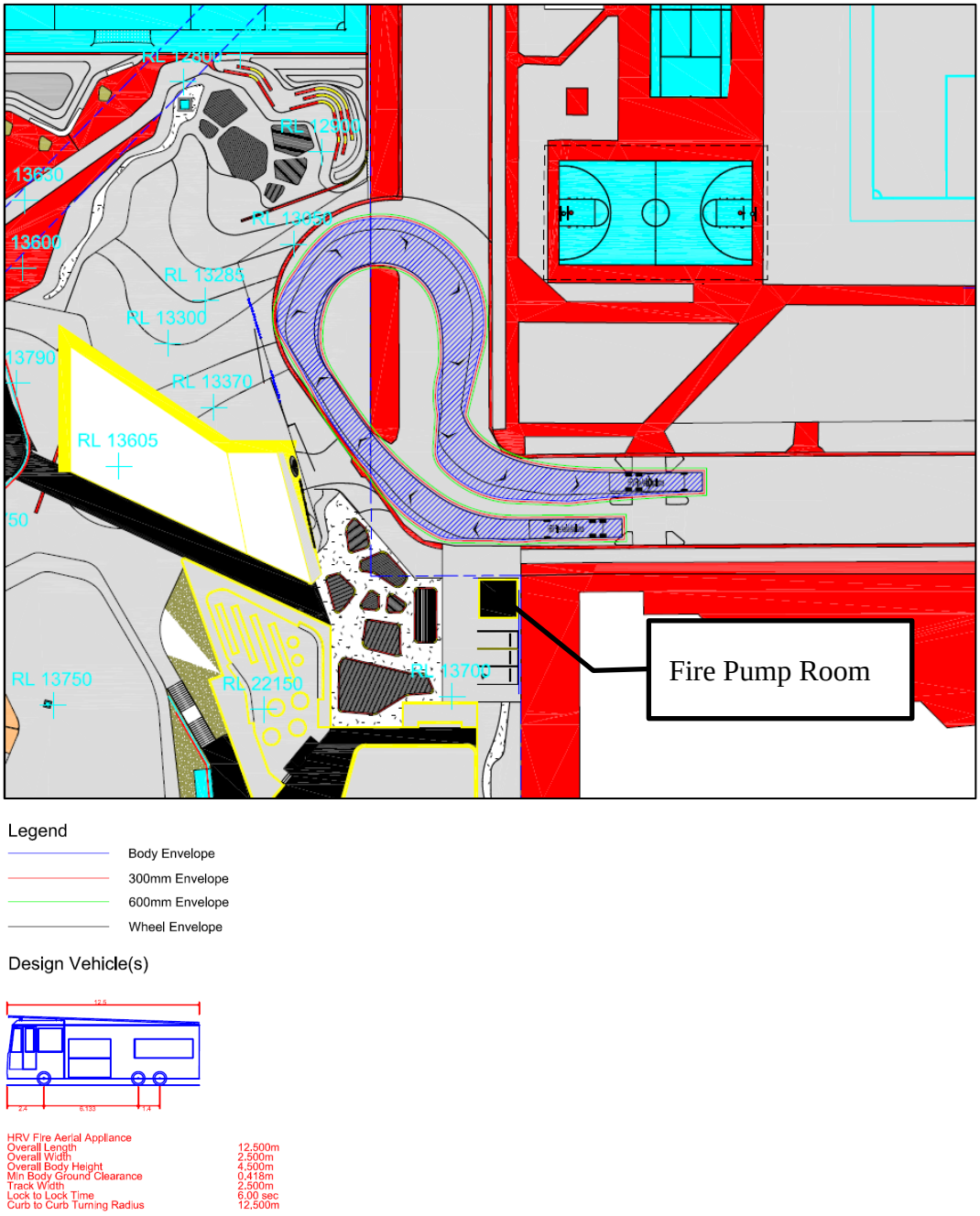


Figure 23: Fire Truck vehicle swept path accessing the fire pump room and using the bus loop to turnaround

Emergency access to the sports field would also be through Power Avenue and Park Road. A gate access will be provided on the western side of the bus loop, shown in Figure 24.

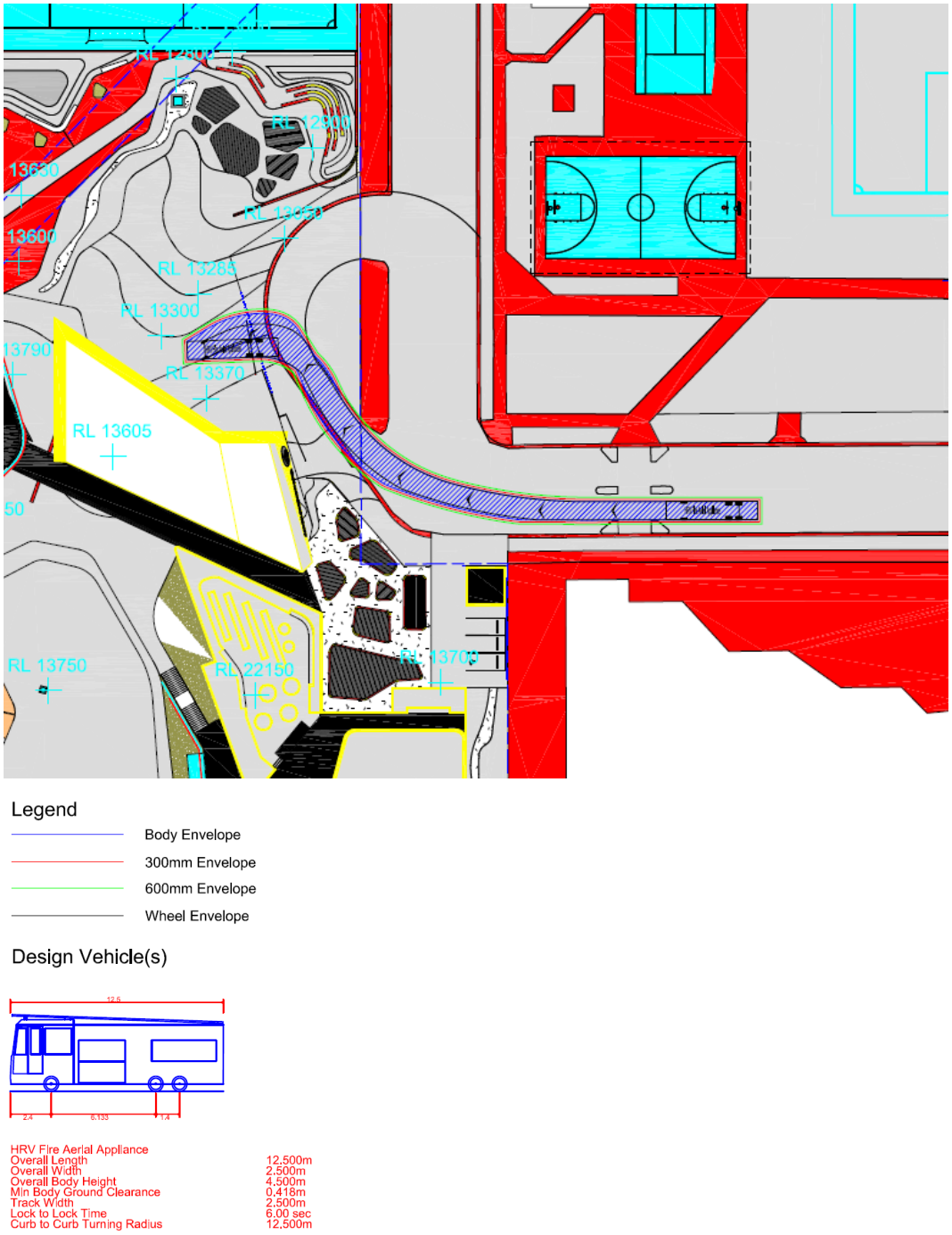


Figure 24: Fire Truck vehicle swept path accessing the school via Park Road

An alternative access to the school is via Belmont Street, shown in Figure 25.

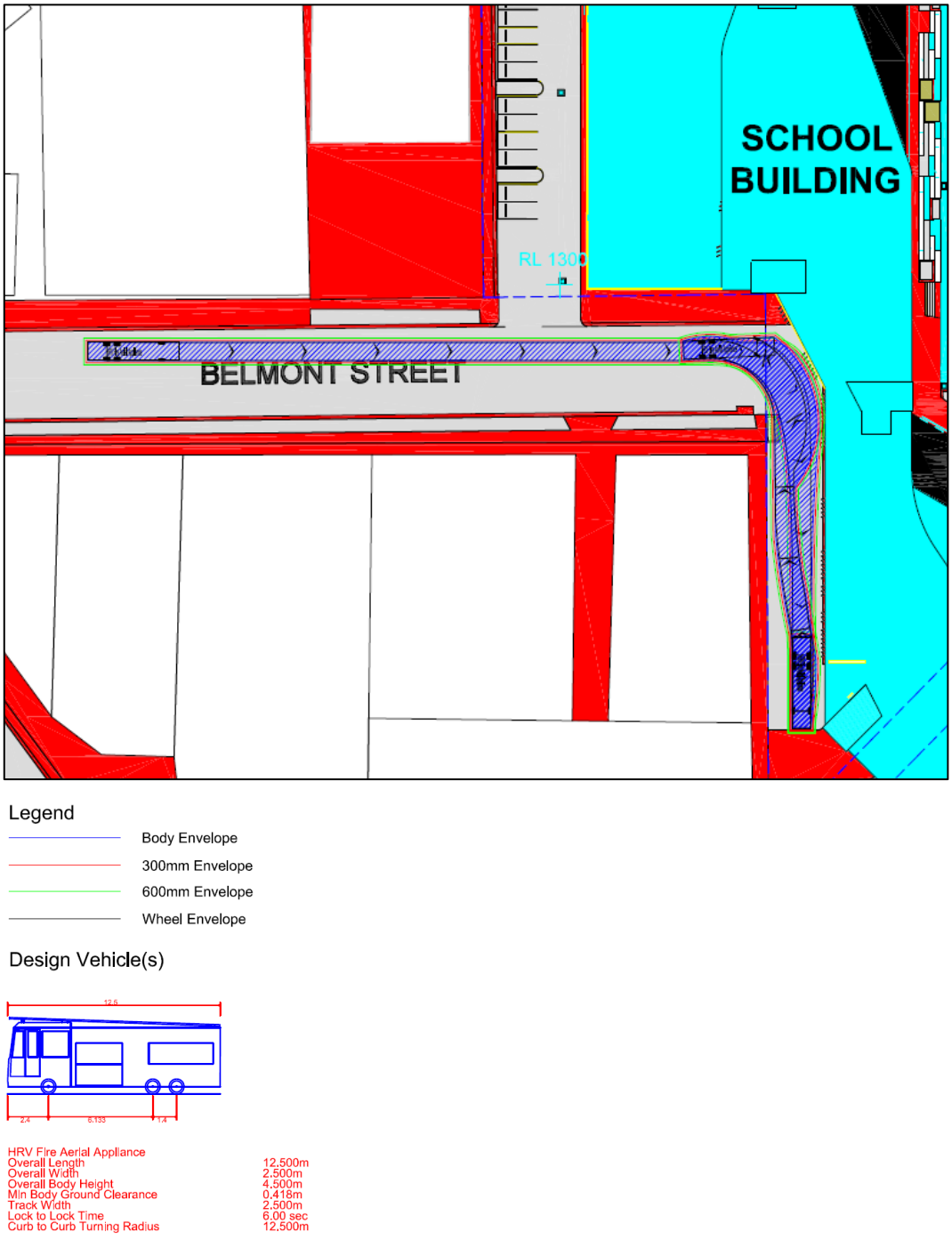


Figure 25: Fire Truck vehicle swept path accessing the school via Belmont Street

5.6 Public transport improvements

5.6.1 Sydney buses

The current bus route 355 is underutilised by existing students. The bus arrives at convenient timings for students and staff. No additional buses are proposed but should be subject to monitoring. The school should encourage the usage of this bus by providing travel information on the school website or through school newsletters.

5.6.2 School buses

Completion of the school will result in an additional demand for the existing school bus. This school bus also serves other schools along the existing route. Further consultation is required between schools using the existing school bus route 750E and TfNSW to ensure that there is sufficient capacity on the school bus to accommodate the increase in number of students.

The school should also explore alternative routes to further promote the use of school buses. This can be determined by the future students' residential address and other existing school bus routes which could include the APCS as a destination.

6 Traffic Assessment

The SSD Transport Assessment submitted in 2017 documented the trip generation relating to students and staff in the school peak hours.

As the staff parking on site will remain at 28 spaces and unrestricted parking on surrounding streets is already heavily utilised it expected many staff would shift to other modes. This would be supported by the opening of Sydney Metro in 2024.

It was estimated the increase in student numbers would contribute to an additional 185 vehicle trips in the AM peak hour. These additional trips were applied to the surrounding road network to understand the impact on traffic conditions and intersection operation.

The previous analysis highlighted that the hours when the school generates significant drop off and pick up trips are at school opening and closing times.

Analysis relating to the school peak hours has not been presented in this report as Modification 2 is not expected to generate trips in these hours and will not impact student trips. This Mod proposes no changes to this aspect of the development.

Any trips generated by the community use of the football pitch will occur outside school peak hours and would therefore not have a cumulative impact on the 2017 assessment. It is noted that when the football pitch is in use on weekday evenings staff may still be using the school car park and this has been considered in the assessment.

6.1 Football pitch trip generation

As the football pitch will be available for community use outside of school hours (Monday to Friday 18:00-22:00, Weekends 08:00-22:00). The impact of trips accessing this facility have been assessed for an evening or weekend scenario.

The pitch will be large enough to host an 11 aside game and it is estimated that up to 30 players could be using the pitch as part of any match (11 players plus four substitutes for each team).

As the facility is being upgraded to FIFA standards it is expected that it may host semi-professional or professional games that could attract up to 30 spectators. This number of spectators is not expected for all games but is considered a robust assumption for the assessment.

Journey to Work 2016 census data in the area (Section 3.3) indicates a 57% private vehicle mode share for commuter trips. It is expected that this mode share would be higher for out of hours use when public transport services are less appealing due to reduced frequencies.

A private vehicle mode share of 75% has been assumed for people accessing the football pitch. Given soccer is a team game it is also assumed that 25% of people accessing the pitch using private vehicle would have a passenger with them.

Applying these factors to the overall expected number of players and spectators indicate the number of private vehicle trips generated from any match would be

36 (carrying 45 players or spectators). It is also noted that there may be times when match timeslots are crossing over and this could increase the demand for parking in the interim. To capture this an uplift factor of 50% has been applied suggesting the maximum parking demand that would need to be accommodated at any one time could be approximately 54 vehicles.

6.2 Road network impact

The impacts of the school traffic on the road network were assessed as part of the SSD Transport Assessment submitted back in 2017. As trips generated by the community use of the football pitch occur at times out side of the school peak hours, the 2017 analysis has not been updated as part of this assessment. Further details on the road network assessment for student and staff traffic can be found in the 2017 report.

This section focuses on the traffic and parking impacts relating to the community use of the football pitch on evenings and weekends.

Section 6.2 indicates that a football match would attract up to 30 players and 30 spectators in approximately 36 private vehicles. As use of the pitch by the community would occur outside the road network peaks the car trips generated by the pitch are expected to have a negligible impact on the surrounding road network.

The maximum parking demand relating to the community use of the pitch is expected to occur between matches. Considering an overlap of demand from two matches the parking demand could be up to 54 spaces.

It is expected that the school car park could be used by the community when using the football pitch. The car park has capacity for 28 cars which could accommodate a large proportion of the estimated parking demand. If the school car park is full, unrestricted parking on Buckland Street or Power Avenue could be used. A site visit on a weekend in May 2020 indicated that there was ample supply of unrestricted parking available on both these streets.

We note that when the pitch is being used in the evenings school staff may still be using the car park and would have priority over community users. This would not need to be enforced as staff would always be parked in the facility prior to any community users arriving.

7 Outline Construction Traffic Management Plan

The construction of the development will require access for heavy vehicles travelling to and from the site. Prior to the commencement of construction, a Construction Pedestrian and Traffic Management Plan (CPTMP) should be prepared to ensure the safest possible management of construction access and appropriate mitigation measures. The CPTMP would be prepared by the Construction Contractor and address:

- The likely construction vehicle numbers and frequency;
- Approach and departure routes;
- Parking access arrangements during construction; and
- Provision of acceptable pedestrian management measures

A preliminary CTMP has been prepared alongside the Construction Management Plan and follows the following framework:

- Description of proposed works
- Impact of proposed measures
- Effects on existing and future developments
- Detailed of provisions made for emergency vehicles, heavy vehicles and cyclists
- Measures to ameliorate impacts
- Public transport services affected
- Public consultation

8 Conclusion

The SSD Transport Assessment has been updated to capture changes to existing transport provision and assess any transport impacts relating to the out of hours use of the football pitch. Key findings of the report are:

- Most transport provisions are similar to what was captured in the 2017 assessment. Key changes are that the 310 bus service no longer exists, and a large portion of Park Road is now closed to traffic;
- To enable the extension of the football pitch a further section of Park Road would need to be closed north of the existing bus turnaround;
- It is estimated any match on the soccer pitch would attract approximately 60 people with 45 of these arriving via private vehicle;
- Out of hours parking demand could be accommodated within the school car park and using unrestricted parking on Buckland Street and Power Avenue; and
- Following the submission of Modification 2 a Traffic Management Plan will need to be submitted to council to confirm the extension of the road closure on Park Road.

Appendix A

Bicycle and Scooter Parking layout

NORTH BOUNDARY 1

24 HIGH SCHOOL BICYCLE SPACES

OUTDOOR SPORTS COURTS

4 HIGH SCHOOL BICYCLE SPACES (2 UNDER COVER)

10 UNDER COVER HIGH SCHOOL BICYCLE SPACES

MULTI PURPOSE SPORTS FIELD

RESIDENTIAL APARTMENTS

WEST BOUNDARY 1

EAST BOUNDARY 1

ALEXANDRIA PARK
NOT PART OF PROJECT WORKS

22 HIGH SCHOOL BICYCLE SPACES

SOUTH BOUNDARY 1

BELMONT STREET

STORMWATER EASEMENT

16 UNDER COVER HIGH SCHOOL BICYCLE SPACES

24 PRIMARY SCHOOL SCOOTER SPACES

8 UNDERCOVER HIGH SCHOOL BICYCLE SPACES

30 UNDER COVER PRIMARY SCHOOL BICYCLE SPACES

20 STAFF BICYCLE SPACES

16 HIGH SCHOOL BICYCLE SPACES

RESIDENTIAL APARTMENTS

INDUSTRIAL WAREHOUSE

NORTH BOUNDARY 2

SOUTH BOUNDARY 2

EAST BOUNDARY 2

NOT FOR CONSTRUCTION

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Do not scale drawings. Verify all dimensions on site. Notify architect of all discrepancies

Rev	Date	Description	Chkd	Auth
A	10.01.20	Issued for Information	AH	AK
B	17.01.20	Issued for Information	AH	AK
C	11.03.20	Issued for Construction	AH	AK

Project
Alexandria Park Community School

Drawing Title
CAMPUS PLAN - GROUND FLOOR

Proj. Dir	Proj. Arch	Drawn
AK	AH	AC
Job No.	**Sheet**	**Scale**
161044	A0	1 : 250

Drawing No. AR-CD-2000
Revision C

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