

Transport Assessment

Meriden School State Significant Development Application
10-12 Redmyre Road, Strathfield

Ref: 0686r01v4
3/07/2019

Document Control

Project No: P0686

Project: Meriden School Stage 1 SSDA, 10-12 Redmyre Road, Strathfield

Client: Meriden School

File Reference: P0686r01v4 TA Meriden School 10-12 Redmyre Road, Strathfield, Issue IIII

Revision History

Revision	Date	Details	Author	Approved by
-	05/04/2019	Draft	V. Cheng / R. Butler-Madden	A. Reisch
I	3/07/2019	Issue I	R. Butler-Madden	R. Butler-Madden
II	13/05/2019	Issue II	R. Butler-Madden	R. Butler-Madden
III	24/06/2019	Issue III	V. Cheng / R. Butler-Madden	R. Butler-Madden
IIII	03/07/2019	Issue IIII	R. Butler-Madden	R. Butler-Madden

This document has been prepared for the sole use of the Client and for a specific purpose, as expressly stated in the document. Ason Group does not accept any responsibility for any use of or reliance on the contents on this report by any third party. This document has been prepared based on the Client's description of its requirements, information provided by the Client and other third parties.

Table of Contents

1	INTRODUCTION.....	1
1.1	OVERVIEW	1
1.2	SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS	1
1.3	TRANSPORT ASSESSMENT OBJECTIVES	6
1.4	REFERENCE DOCUMENTS.....	6
1.5	TA STRUCTURE	7
2	OVERVIEW OF PROPOSAL.....	8
2.1	SUMMARY OF PROPOSED DEVELOPMENT.....	8
3	EXISTING SITE CONDITIONS.....	11
3.1	LOCATION	11
3.2	SCHOOL POPULATION	13
3.3	SCHOOL VEHICLE ACCESS	13
4	EXISTING SCHOOL TRAVEL CHARACTERISTICS	14
4.1	TRAVEL MODE SURVEY	14
4.2	JUNIOR SCHOOL STUDENTS	14
4.3	SENIOR SCHOOL STUDENTS	18
4.4	STAFF TRAVEL SURVEYS.....	21
4.5	TRAVEL MODE SUMMARY	23
4.6	EXISTING SCHOOL TRAFFIC GENERATION	24
4.7	TRIP DISTRIBUTION	25
4.8	CAR PARKING	26
5	EXISTING ROAD NETWORK	27
5.1	ROAD HIERARCHY	27
5.2	TRAFFIC SURVEYS	28
5.3	INTERSECTION ANALYSIS.....	30
5.4	ACCIDENT DATA.....	31
6	PUBLIC & ACTIVE TRANSPORT.....	33
6.1	PUBLIC TRANSPORT	33
6.2	RAILWAY SERVICES.....	34
6.3	PUBLIC BUS SERVICES	34
6.4	SCHOOL BUS SERVICES	35
6.5	PEDESTRIAN ACCESSIBILITY	36
6.6	CYCLE ROUTES.....	39
7	SCHOOL PEDESTRIAN AND TRAFFIC MANAGEMENT	42
7.1	MORNING DROP-OFF PERIODS	42
7.2	AFTERNOON PICK-UP PERIODS.....	43
7.3	ON-SITE OBSERVATIONS.....	43
7.4	MOVEMENT BETWEEN CAMPUSES.....	43
7.5	FUTURE OPERATIONS.....	44
8	PARKING & SERVICING REQUIREMENTS	45
8.1	CAR PARKING	45
9	TRAFFIC ASSESSMENT	46
9.1	TRAFFIC GENERATION.....	46
9.2	TRIP DISTRIBUTION	49
9.3	FUTURE INTERSECTION PERFORMANCE	51
9.4	10-YEAR HORIZON ASSESSMENT.....	51
10	CONCLUSIONS.....	53

Appendices

Appendix A: Construction Traffic and Pedestrian Management Plan

Appendix B: Sustainable Travel Plan Package

Appendix C: Agency Correspondence

1 Introduction

1.1 Overview

Ason Group has been engaged by Meriden School to prepare a Transport Assessment (TA) to support a State Significant Development Application (SSDA) which provides for alterations and renovations at the Meriden School, Strathfield (the School). The primary objective of the SSDA is to improve the current school facilities to cater for the increased demand for high quality music teaching and learning spaces, additional administration and student facilities and increasing the playground area in the Junior School Campus.

Works proposed across the three School campuses include:

- **At the Senior School Campus** (the Senior Campus), 3-13 Margaret Street and 10-28 Redmyre Road, a new Centre of Music and Drama (CMD).
- **At the Junior School Campus** (the Junior Campus), 36 – 38 Redmyre Road, a new landscaped playground.
- **At the Lingwood Prep School Campus** (the Lingwood Campus), 16B – 16 Margaret Street, Stage 2 works including new Administration and Student Centre (A & S Centre).

The SSDA also provides for a minor increase in student and staff numbers (50 additional students and 2 additional staff) across all three campuses.

1.2 Secretary's Environmental Assessment Requirements

This TA provides an assessment of the access, traffic, pedestrian and parking characteristics of the proposed SSDA works. In this regard, Ason Group has specifically referenced the Secretary's Environmental Assessment Requirements (SEARs) in regard to SSDA 9692, issued on 22 November 2018 in response to the School's Request for SEARs Statement. The SEARs outline the key areas for consideration in any subsequent development application (i.e. in this SSDA) with specific requirements providing the scope for an assessment of potential traffic and transport impacts arising from the development.

Table 1 below provides a summary response to each of the SEARs, which include input from the Department of Planning & Environment (DPE), NSW Roads & Maritime Services (RMS) and Transport for NSW (TfNSW). A reference to the section of this TA providing a more detailed response to each SEAR is also provided.

Table 1: Secretary's Environmental Assessment Requirements

SEARs - General	Summary Response	TA Section
Accurate details of the current daily and peak hour vehicle, existing and future public transport networks and pedestrian and cycle movement provided on the road network located adjacent to the proposed development.	This TA Report provides an overview of public transport, pedestrian connectivity, bicycle networks and all traffic and transport facilities of the existing School. Current daily and peak hour vehicle volumes are further detailed in Sections 4 and 5.	5, 6, & 7
Details of estimated total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and bicycle trips based on surveys of the existing and similar schools within the local area.	A detailed assessment of the potential peak hour vehicle trip generation of the proposal is provided in Section 9. The SSDA is expected to result in a total of 25 additional students travelling by car to / from the School per day. The remaining 25 students would be spread across the different modes, with the most significant increase in trips expected by train. It is forecast that the SSDA would result in 12 additional students travelling to / from School by train – this nominal increase would not materially impact the operation of existing train services.	9
Details on the pedestrian accessibility between campuses.	Pedestrian accessibility is discussed in Section 6.5. Students walk between campuses via the mid-block pedestrian crossing located at Margaret Street.	6.5
Details on the estimated demand of staff/student movements between campuses during operational hours.	The movement of students between the campuses is discussed in Section 7.4. The main staff movement between campuses takes the form of escorting of Junior School students to / from the Senior Campus to use the facilities (i.e. swimming pool), with limited demand for general movement of staff. Teachers associated with the Junior School would be based on the Junior Campus and teachers associated with the Senior School would be based on the Senior Campus. Senior Students would only travel to the Junior Campus for co-curricular activities (i.e. music lessons and practice) and thus the demand would be minor. As noted, the Junior School students would only travel to the Senior School in class groups to utilise the facilities.	7.4
A road safety assessment of the pedestrian access routes between campuses with respect to staff/student movements and traffic volumes on the adjacent road.	Assessment of the movements between the campuses is discussed in Section 6 and 7. The movement between the campuses is conducted across and along Margaret Street. Margaret Street is, except for School peak arrival and departure periods, a lightly trafficked road. The mid-block crossing and footpaths (which have generous widths) facilitates safe crossing of staff and students, with the Junior School students accompanied by staff at all times when traversing along or across Margaret Street. Further, during the key peak arrival and departure periods, staff coordinate from within School grounds to staff located at the roadside to ensure that students only proceed to the Kiss and Ride and Bus Zone when it is appropriate. This ensures that there is never a significant volume of students utilising the footpaths and crossing on Margaret Street at the same time.	6 & 7
The adequacy of existing public transport or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand of the proposed development.	As noted above, the significant increase in non-car trips would be associated with train trips, with an additional 12 students expected to travel by this mode as a result of the SSDA. This number of trips would not impact the operation of trains serving Strathfield Station. It is noted that an average of 50,000 passengers entered / exited Strathfield Station per weekday in 2018. Therefore, the increase in trips associated with the SSDA	6, 9 & Appendix B

	<p>represents a small proportion of the passengers which utilise the station.</p> <p>Therefore, the additional trips associated with the proposed development would be readily accommodated by the existing infrastructure.</p> <p>The implementation of a Site-Specific Sustainable Travel Plan (STP) would encourage a switch from private vehicle use to non-car modes by all students and staff at the School.</p> <p>TfNSW Guidelines state that bus services influence the travel mode choices of sites within 400 metres (5 minutes' walk) of a bus stop; the School is highly accessible by public and private bus services operating along Margaret Street, Redmyre Road, and the Strathfield Bus Interchange.</p> <p>TfNSW Guidelines state that train services influence the travel mode choices of sites within 500 metres (6 minutes' walk) of a train station. The Senior and Lingwood Campuses are 500m from Strathfield Station and the Junior School is 600-650m from it.</p> <p>The Site is accessible for pedestrians approaching from all directions with appropriate footpath facilities, zebra crossings and signalised intersections with pedestrian refuge islands providing safe access over Redmyre Road and a direct linkage to the train station.</p> <p>The School is therefore adequately catered for by the extensive transport amenities in the area.</p>	
Measures to integrate the development with the existing/future public transport network.	<p>The proposed developments will be located within School property, providing the same existing access opportunities to the public transport detailed in Section 6. The public transport demand from the development will be readily accommodated with minor impacts to the capacity of the existing public transport system due to the small increase of 50 students spread across a variety of different transport modes. Refer to Appendix B for proposed measures to further encourage the uptake of public transport amongst staff and students.</p>	6 & Appendix B
<p>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, and details of, upgrades or road improvement works, if required (Traffic modelling is to be undertaken using SIDRA network modelling for current and future years).</p>	<p>Section 9 details the methodology undertaken for the traffic assessment.</p> <p>As discussed, it is expected that this SSDA would result in an additional 32 veh/hr in the morning peak and 30 veh/hr in the PM peak.</p> <p>SIDRA intersection analysis has been conducted of the key intersections in the vicinity of the Site. The modelling results demonstrate that the future operation of the intersection would remain consistent with the existing performance following addition of the 'net' increase in traffic volumes as a result of the Proposal. Specifically, there would be minor increases in Degree of Saturation (DoS) and Average Delay (AVD) with no change in Level of Service (LoS).</p> <p>Therefore, no road upgrades are required to accommodate the Proposal.</p> <p>Further, there are currently no known relevant development proposals within a 250m radius of the Site which would warrant upgrades when considered alongside the Proposal.</p>	9
<p>The identification of infrastructure required to ameliorate any impacts on traffic efficiency and road safety impacts associated with the proposed development, including details on improvements required to affected intersections, additional school bus routes along bus capable roads (i.e. minimum</p>	<p>Given that the SSDA would result in a nominal increase in students (50), there would be no change to the current operation of the transport network. Therefore, no additional infrastructure is required to accommodate the Proposal.</p>	

3.5 m wide travel lanes), additional bus stops or bus bays.		
Details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan and specific Workplace travel plan) and the provision of facilities to increase the non-car mode share for travel to and from the site.	<p>A Sustainable Travel Plan (STP) package has been attached as Appendix B. The STP contains a site-specific Workplace Travel Plan (WTP) and a Green Travel Plan (GTP) designed for the different student populations and staff members. Further consultation with DPE, Council and TfNSW would be required to refine the proposed STP. This would be implemented as part of a condition of Consent with any Development Consent, which is a standard approach to development of STPs.</p> <p>This STP is intended to develop a package of site-specific measures to promote and maximise the use of sustainable travel modes, including walking, cycling, public transport and car sharing.</p>	Appendix B
The proposed walking and cycling access arrangements and connections to public transport services.	It is noted that all three campuses are well connected to the existing walking and cycling network. The SSDA would result in no change to the current access provisions to this network.	6 & 7
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.	<p>It is proposed that the existing traffic and pedestrian management plan detailed in Section 7 will remain the same.</p> <p>An existing pick-up / drop-off facility and is provided on Margaret Street and Vernon Street.</p> <p>As discussed, the increase in trips associated with the SSDA are of a sufficiently low order that they would not materially impact the operation of the transport network, therefore no additional measures are required to facilitate this SSDA.</p>	7 & 8
Proposed bicycle parking provision, including end of trip facilities, in secure, convenient, accessible areas close to main entries incorporating lighting and passive surveillance.	Given the nominal change in student numbers expected as a result of the SSDA, and noting that the purpose of the SSDA is to facilitate the upgrade of existing amenities, no additional facilities are required.	8 & Appendix B
Proposed number of on-site car parking spaces for teaching staff and visitors and corresponding compliance with existing parking codes and justification for the level of car parking provided on-site.	The SSDA would result in a nominal increase in staff numbers (2 across all campuses), therefore it is not proposed to increase the number of car parking spaces. Refer to Section 8 for further detail.	8
An assessment of the cumulative on-street parking impacts of cars and bus pick-up/drop-off, staff parking and any other parking demands associated with the development.	As discussed, the SSDA would nominally increase student numbers and would therefore not materially change the parking demands of the School.	8
An assessment of road and pedestrian safety adjacent to the proposed development and the details of required road safety measures and personal safety in line with CPTED.	<p>Crime prevention through environmental design (CPTED) is a multi-disciplinary approach to deterring criminal behaviour. The four principles of CPTED involve:</p> <ul style="list-style-type: none"> ▪ Territorial Re-enforcement – uses actual and symbolic boundary markers, spatial legibility and environmental cues to 'connect' people with space, to encourage communal responsibility for public areas and facilities, and to communicate to people where they should/not be and what activities are appropriate. ▪ Natural surveillance – this involves a design which places activities and physical features in a way that facilitates natural surveillance of that area. For example, if parking areas aren't located in locked, secured facilities they should have natural surveillance. ▪ Access Control – access can be restricted by physical barriers which can increase an effort to conduct a crime ▪ Ownership – criminal and antisocial behaviour thrive in isolated and unused places. Fences, 	N/A

	<p>paving, art, signs, good maintenance and landscaping are some physical ways to express ownership. Identifying intruders is much easier in a well-defined space.</p> <p>It is noted that SSDA would facilitate upgrades to existing facilities at the School rather than developing additional spaces. Therefore, these principles have already been deployed across the three School Campuses.</p> <p>The principles that have been included in the SSDA include provision of lockable access gates and the use of vegetation and landscaping to create areas which feel separated from the external road network and create a defined, safe sense of place. Please refer to the Environmental Impact Assessment prepared by Urbis for further detail on CPTED measures. It is noted that there would be no change to the current parking areas as a result of the SSDA.</p>	
Emergency vehicle access, service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times).	<p>There is an emergency access gate provide on Margaret Street into the Senior Campus, to the eastern side of the Campus, which provides access for emergency vehicles only. The remainder of emergency vehicles can be provided access as required via existing vehicle accesses and on-street arrangements.</p> <p>Given that the SSDA would facilitate the upgrade of existing facilities only, there would be no change to the current servicing and emergency vehicle access.</p>	N/A
<p>The preparation of a preliminary Construction Traffic and Pedestrian Management Plan to demonstrate the proposed management of the impact in relation to construction traffic addressing the following:</p> <ul style="list-style-type: none"> ▪ assessment of cumulative impacts associated with other construction activities (if any) ▪ an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity ▪ details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process ▪ details of anticipated peak hour and daily construction vehicle movements to and from the site ▪ details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle ▪ details of temporary cycling and pedestrian access during construction. 	<p>Please Refer to Appendix A for the preliminary Construction Traffic and Pedestrian Management Plan to implemented during construction. This would be developed further through consultation with Council and TfNSW (Sydney Co-ordination Office), if required.</p>	Appendix A
Consultation with RMS and TfNSW	<p>Both agencies have been consulted with as part of the assessment process. Both have confirmed that they have no further comment at this stage, following input into the provided SEARs. Once they SSDA package has been reviewed in full, both RMS and TfNSW will provide further comment as part of the formal Agency consultation if required. Please refer to Appendix C for the relevant correspondence.</p>	N/A

1.3 Transport Assessment Objectives

The key objectives of this TA are:

- To provide an appropriate response to the SEARs.
- To establish that the development of the School in accordance with the SSDA is compliant and consistent with the relevant Council planning guidelines.
- To establish that the vehicle trip generation of the School further to the implementation of the SSDA can be appropriately accommodated by the local road network.
- To demonstrate that there is an appropriate and sustainable allocation of car parking across the School.

1.4 Reference Documents

The School is located within the Strathfield Council Local Government Area (LGA) and has therefore been assessed against that Council's planning controls, including:

- Strathfield Consolidated Development Control Plan 2005 (DCP 2005).
- Strathfield Local Environmental Plan 2012 (LEP 2012).

This TA also references general access, traffic and parking guidelines, including:

- RMS (formerly RTA) *Guide to Traffic Generating Developments* (RMS Guide).
- Australian Standard 2890.1 (2004): Off-street Car Parking (AS2890.1).
- Australian Standard 2890.2 (2002): Off-street Commercial Vehicle Facilities (AS2890.2).
- Australian Standard 2890.3 (2015): Bicycle Parking (AS2890.3).
- Australian Standard 2890.6 (2009): Off-street Parking for People with Disabilities (AS2890.6).
- *Future Transport Strategy 2056* (TfNSW, March 2018)
- *State Infrastructure Strategy 2018 – 2038 Building the Momentum* (Infrastructure NSW, February 2018)
- *Sydney's Cycling Future* (TfNSW, December 2013)
- *Sydney's Walking Future* (TfNSW, December 2013)
- *Sydney's Bus Future* (TfNSW, December 2013)
- *Future Transport Strategy 2056* (TfNSW, March 2018)

Finally, Colston Budd Rogers & Kafes (CBRK) prepared a Traffic Report and Construction Traffic Management Plan supporting the works at the Lingwood Campus as part of a Stage 1 Development Application (reference DA 2017/159); the subsequently approved Stage 1 works are currently under construction. The traffic and transport characteristics of these Stage 1 works were detailed in the following reports:

- *Traffic Report Alterations and Additions to Meriden School Lingwood Prep, Strathfield, October 2017* (Traffic Report 2017).
- *Construction Traffic Management Plan for Approved Alterations and Additions to Meriden School Lingwood Prep, Strathfield, April 2018* (CTMP 2018).

These reports have necessarily been considered in this TA.

1.5 TA Structure

This TA is structured as follows:

- Section 2 provides a summary of the SSDA proposed works.
- Section 3 describes the existing Site conditions.
- Section 4 details the existing travel characteristics of the School.
- Section 5 details the local road network and parking conditions.
- Section 6 describes public and active transport links available to students and staff.
- Section 7 details the pedestrian and traffic management
- Section 8 assesses the parking requirements applicable to the proposed development.
- Section 9 assesses the traffic characteristic of the proposed development, including the projected trip generation and distribution of the School and the resultant performance of the local road network.
- Section 10 provides a summary of the key conclusions.

2 Overview of Proposal

2.1 Summary of Proposed Development

A detailed description of the proposed SSDA works is provided in the Environmental Impact Statement which this TA accompanies. In summary, the SSDA proposes alterations and additions across the three School campuses, including:

- **At the Senior Campus:** Demolition of the existing music building located towards the south-western corner of the Senior Campus, and construction of a new 3-storey building (above ground) incorporating a new music academy, drama facilities, music teaching rooms, and staff facilities alongside on-site landscaping.
- **At the Junior Campus:** Demolition of the existing residential dwelling at 4 Vernon Street to make way for a new landscaped playground area; the existing access and parking arrangements at the Junior Campus will be retained.
- **At the Lingwood Campus:** Demolition of the existing single storey Business Office building and construction of a new 2-storey A & S Building, to be designed with maximum flexibility to accommodate a wide range of uses, and to adapt with the demands of the school.
- The proposed new teaching facilities will result in an increased capacity of approximately 50 students and the increase of two staff members across all three campuses. Increasing the school's current total capacity from approximately 1,500 students to approximately 1,550 students across all three campuses.

Each of the School campuses are shown in **Figure 1**, while reduced copies of the SSDA Site Plans prepared by Allen Jack + Cottier Architects are provided for context in **Figure 2**, **Figure 3** and **Figure 4**.



Figure 1: Precinct Diagram (relevant sites under assessment outlined in red)

Source: AJ&C Architects

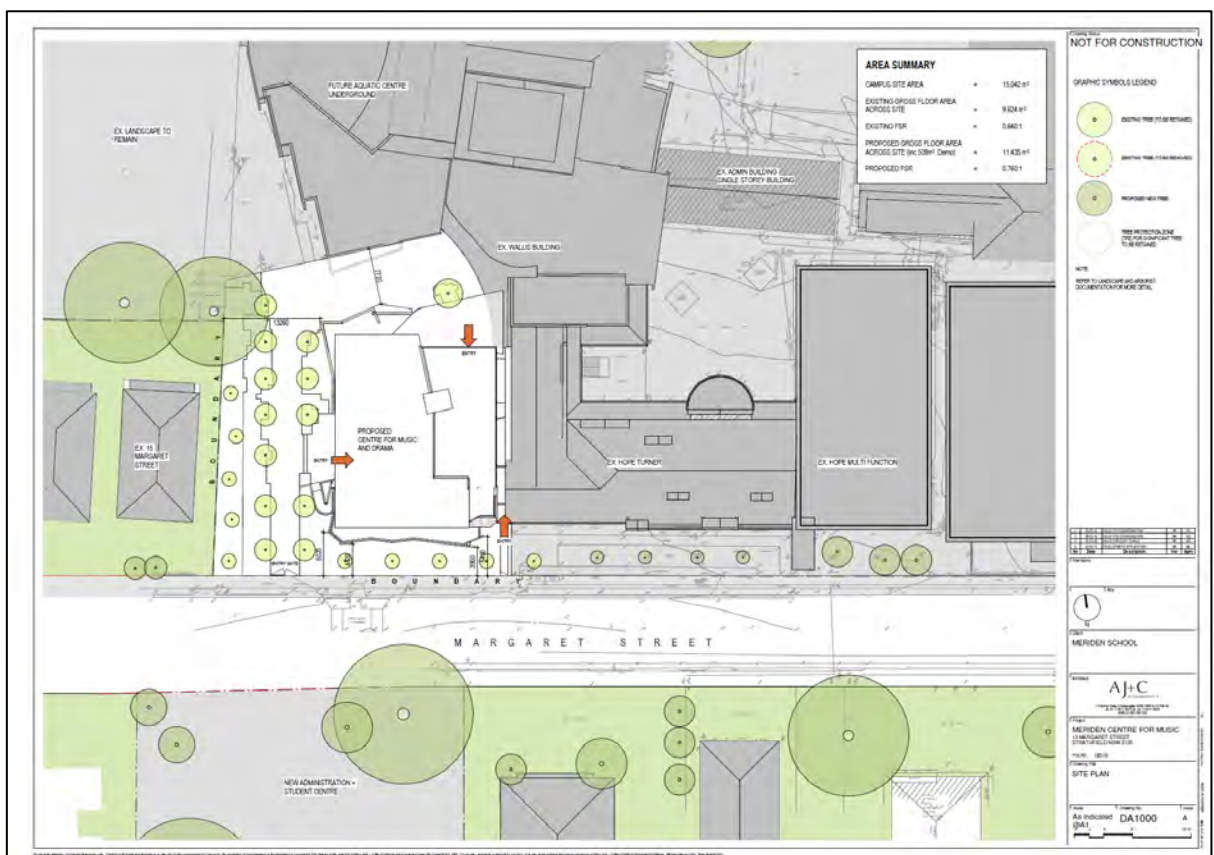


Figure 2: Proposed Senior Campus Centre for Music and Drama Layout (Site Plan)

3 Existing Site Conditions

3.1 Location

As stated, the School is located within the Strathfield Council LGA, and lies approximately 10 kilometres south-east of Parramatta and 11 kilometres west of the Sydney CBD.

The School has three campus sites in close proximity to each other. The Senior Campus is bordered by Redmyre Road to the north, Margaret Street to the south, and residential dwellings to the east and west. The Junior Campus is bordered by Vernon Street to the west, Redmyre Road to the north, Margaret Street and a health care centre to the east, and residential dwellings to the south. The Lingwood Campus is bounded by Margaret Street to the north, a health care centre to the west, and residential dwellings to the east and south.

The broader area in which the School lies is predominantly residential in nature to the south, east and west, while the Strathfield Town Centre lies to the immediate north of the School.

The School is shown in its local context in **Figure 5**, while **Figure 6** shows the key roads providing access to the School.



Figure 5: Local Site Context

Source: AJ&C Architects



Figure 6: Site and Road Hierarchy

3.2 School Population

The School currently has a total student population of 1,254 students, with 424 students in the Junior School (Pre K – Year 6) and 830 students in the Senior School (Year 7 to Year 12) in the Senior School. The School could currently accommodate a total of 1,500 students based on the existing facilities.

The School employs a total of 242 staff, including 156 full-time staff and 86 part-time staff.

3.3 School Vehicle Access

The School has the following vehicle access points:

- **Senior Campus:**
 - One two-way access driveway to the Senior Campus at the east of Margaret Street and another to the west, and;
 - A vehicular access along the west of Redmyre Road accessing green space.
- **Junior Campus:**
 - A single two-way access driveway to the Junior Campus at the west of Margaret Street, and;
 - Three (3) vehicular crossovers along Vernon Street.
- **Lingwood Campus**
 - Combined entry and exit driveway along Margaret Street.

4 Existing School Travel Characteristics

4.1 Travel Mode Survey

Ason Group in consultation with the School prepared a short Travel Survey which was made available to all students and staff via the Survey Monkey application. The purpose of the Travel Survey was to determine key traffic and parking characteristics of existing students and staff, including:

- Travel mode for both the arrival and departure trip;
- For those students and staff driving or being driven, car occupancy;
- Arrival and departures peak periods;
- On and off-site parking demand.

As the School has both Senior and Junior students, separate surveys were undertaken to reflect the different travel characteristics for each, noting that younger students have a greater reliance on pick-up / drop-off trips.

Approximately 55% of the existing 1,254 students responded to the Travel Survey and 54% of the existing 242 staff responded to the Travel Survey; the results are discussed in sections below.

4.2 Junior School Students

4.2.1 Junior Student Travel Mode

Figure 7 provides a summary of the surveyed travel modes for Junior students, noting that mode choice for Junior students was generally the same for the arrival and departure trips.

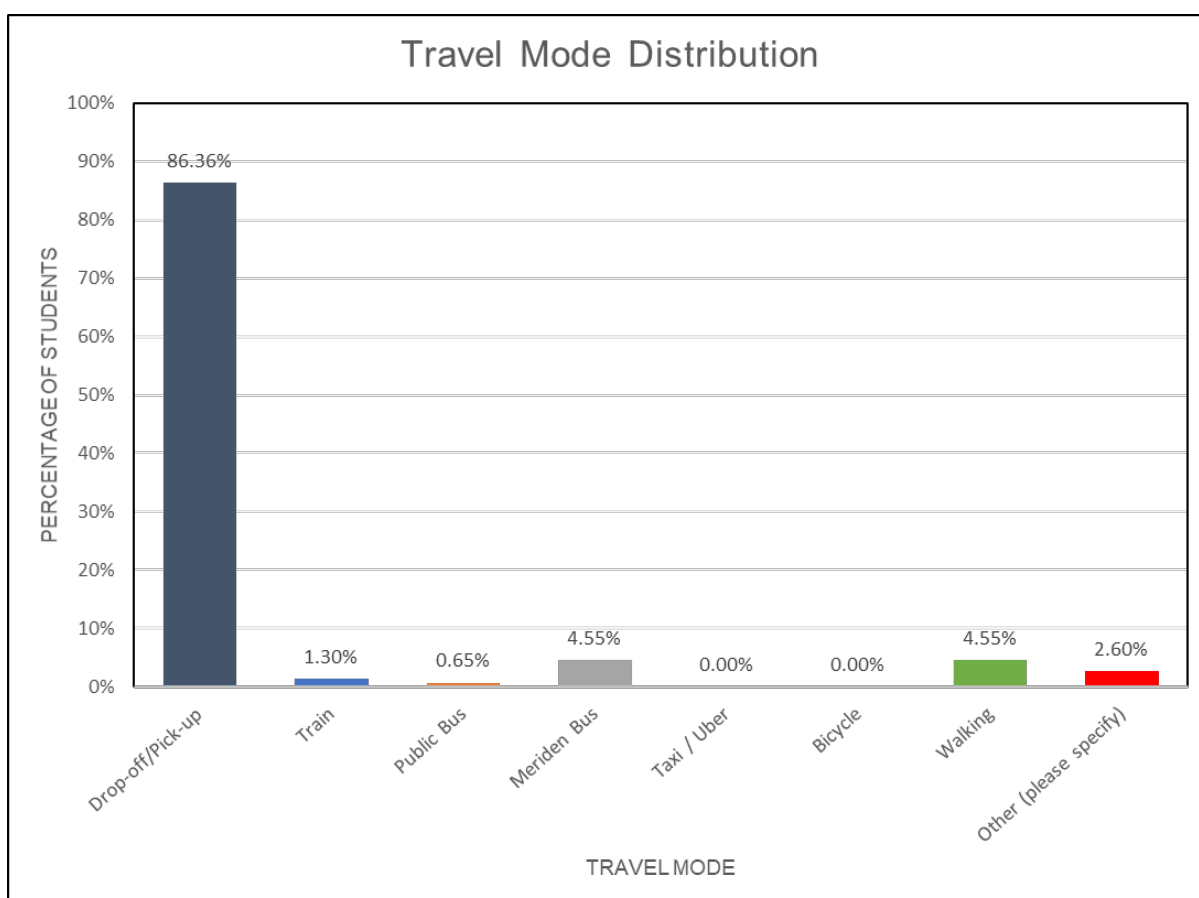


Figure 7: Junior Student Travel Mode

The Travel Survey reports 2.6% of Junior students with a travel mode as 'other'; based on a review of the survey information, it is apparent that this response was generally provided by those undertaking multi-modal trips, namely a car to a bus stop, then a Meriden School bus to finish the trip. Importantly, such trips would not generally include a private vehicle trip to/from the School itself.

In summary, the Junior student Travel Survey indicates that:

- Almost all Junior students are driven to / from School (approximately 86% of Junior students); and
- The next most popular forms of transport are the Meriden (private) Bus and walking, with approximately 4.6% of students using these modes to travel to /from the School.

4.2.2 Junior Student Arrival and Departure Peak Periods

Figure 8 provides details of the surveyed Junior student arrival times, while **Figure 9** provides details of the surveyed Junior student departure times.

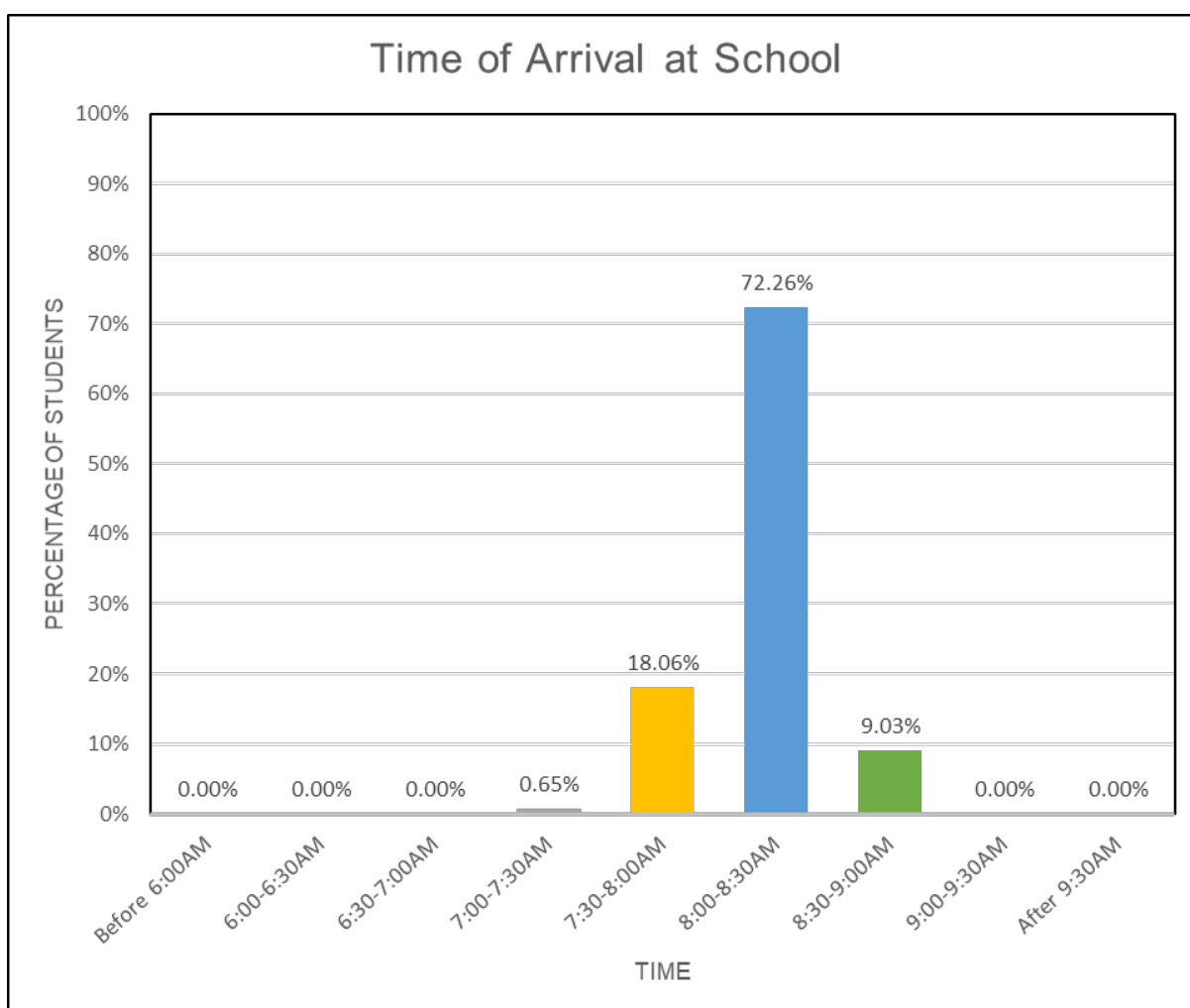


Figure 8: Junior Student Time of Arrival

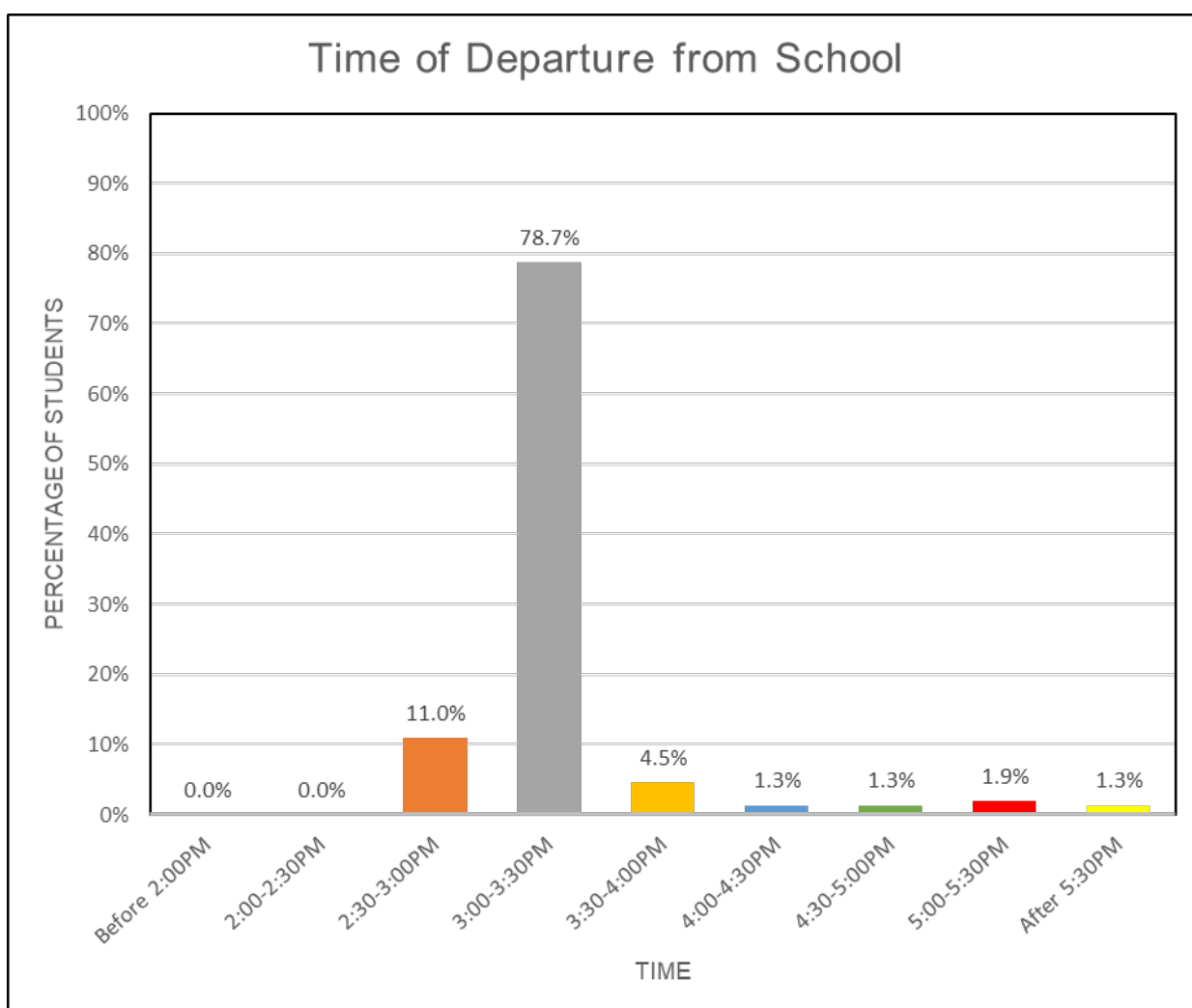


Figure 9: Junior Student Time of Departure

In summary, the Junior student Travel Survey indicates that:

- Almost all Junior students arrive at School over a 90-minute period between 7:30am and 9:00am, with the highest percentage of trips occurring in the 30-minute period 8:00am to 8:30am. The spread of arrival times in the morning peak is largely attributed to students having sports training and other activities scheduled before School starts; and
- Conversely, the majority of Junior students depart the School within the 30-minute period 3:00pm – 3:30pm, i.e. immediately after School ends.

4.3 Senior School Students

4.3.1 Senior Student Travel Mode

Figure 10 provides details of the surveyed Senior student travel modes, noting again that mode choice for Senior students was generally the same for the arrival and departure trips.

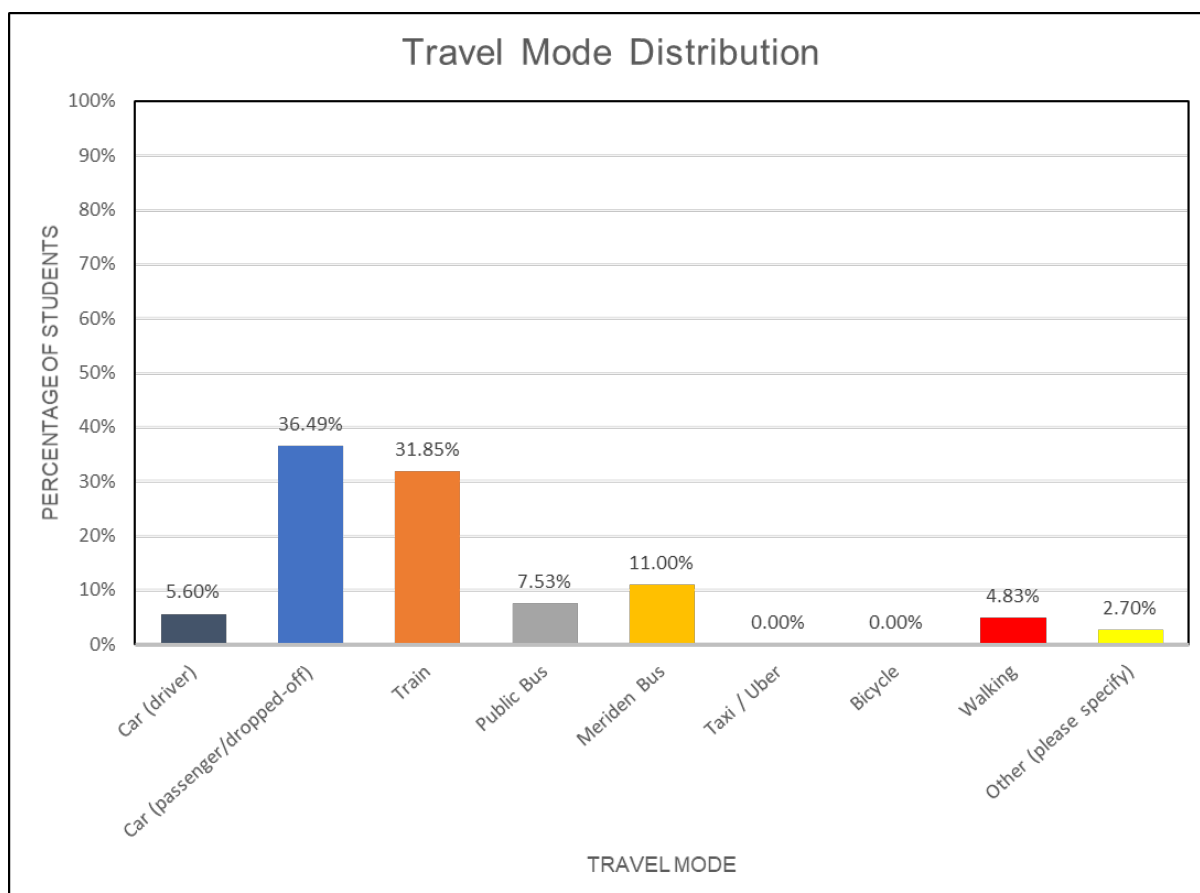


Figure 10: Student Travel Mode

As shown in **Figure 11**, there is a significantly broader distribution of travel modes amongst the Senior students when compared to the Junior students.

In summary, the Senior student Travel Survey indicates that:

- Approximately 5% of Senior students drive to / from to School;
- Approximately 36% of Senior students are driven to / from School;
- Approximately 32% Senior students use the train (with a walk trip) for the trip to / from School; and
- A total of 58% of Senior students travel by modes other than private vehicle.

4.3.2 Senior Student Arrival and Departure Peak Periods

Figure 11 provides details of the surveyed Senior student arrival times, while **Figure 12** provides details of the surveyed Senior student departure times.

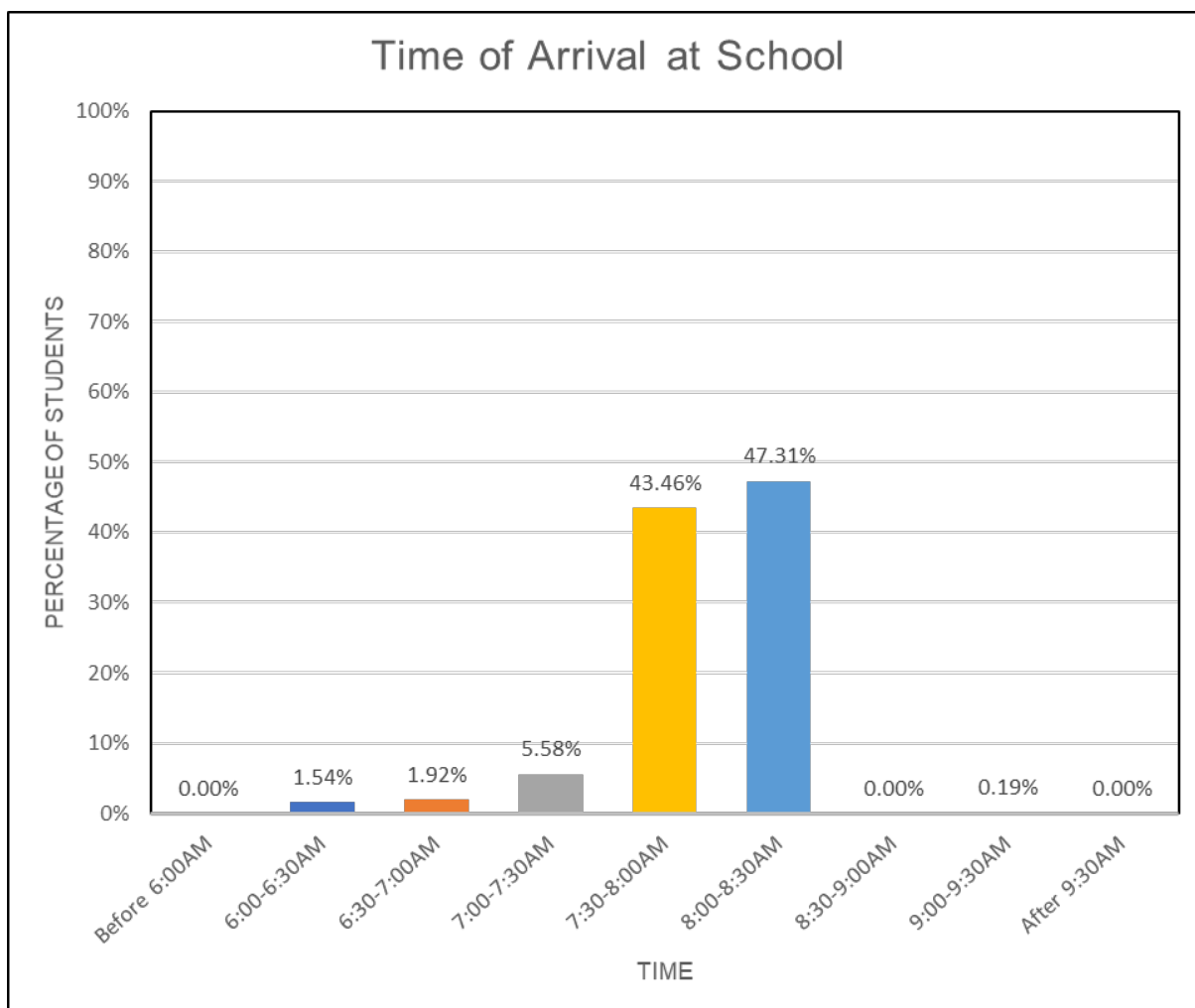


Figure 11: Senior Student Time of Arrival

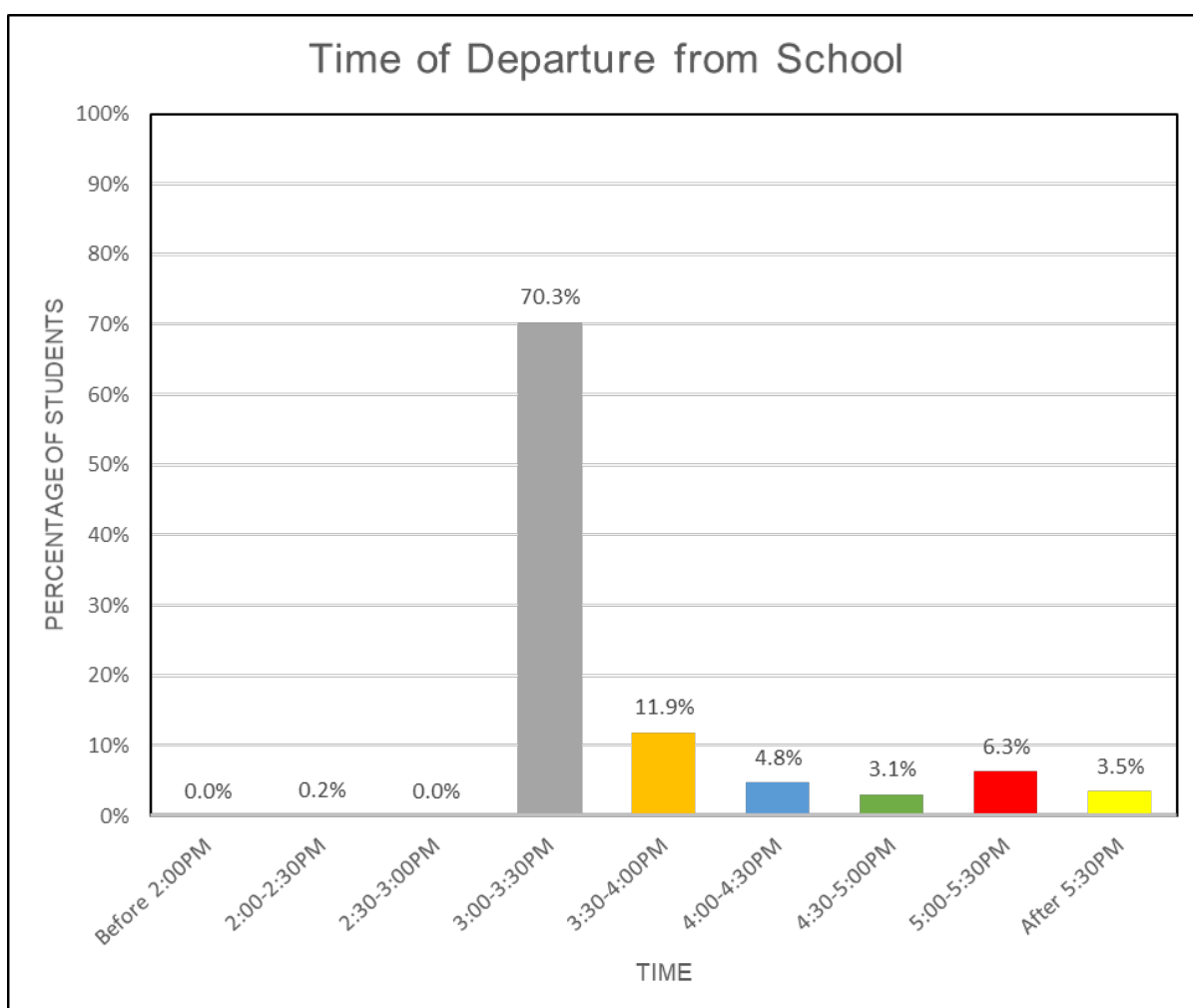


Figure 12: Senior Student Time of Departure

In summary, the Senior student Travel Survey indicates that:

- Almost all Senior students arrive at School over a 90-minute period between 7:00am and 8:30am, with the highest percentage of trips occurring in the 30-minute period 8:00am to 8:30am. The spread of arrival times in the morning peak is again largely attributed to Senior students having sports training and other activities scheduled before School starts; and
- Conversely, the majority of Senior students depart the School within the 30-minute period 3:00pm – 3:30pm, i.e. immediately after School ends.

4.4 Staff Travel Surveys

4.4.1 Staff Travel Mode

Figure 13 provides details of the surveyed Staff travel modes, noting again that mode choice for Staff was generally the same for the arrival and departure trips.

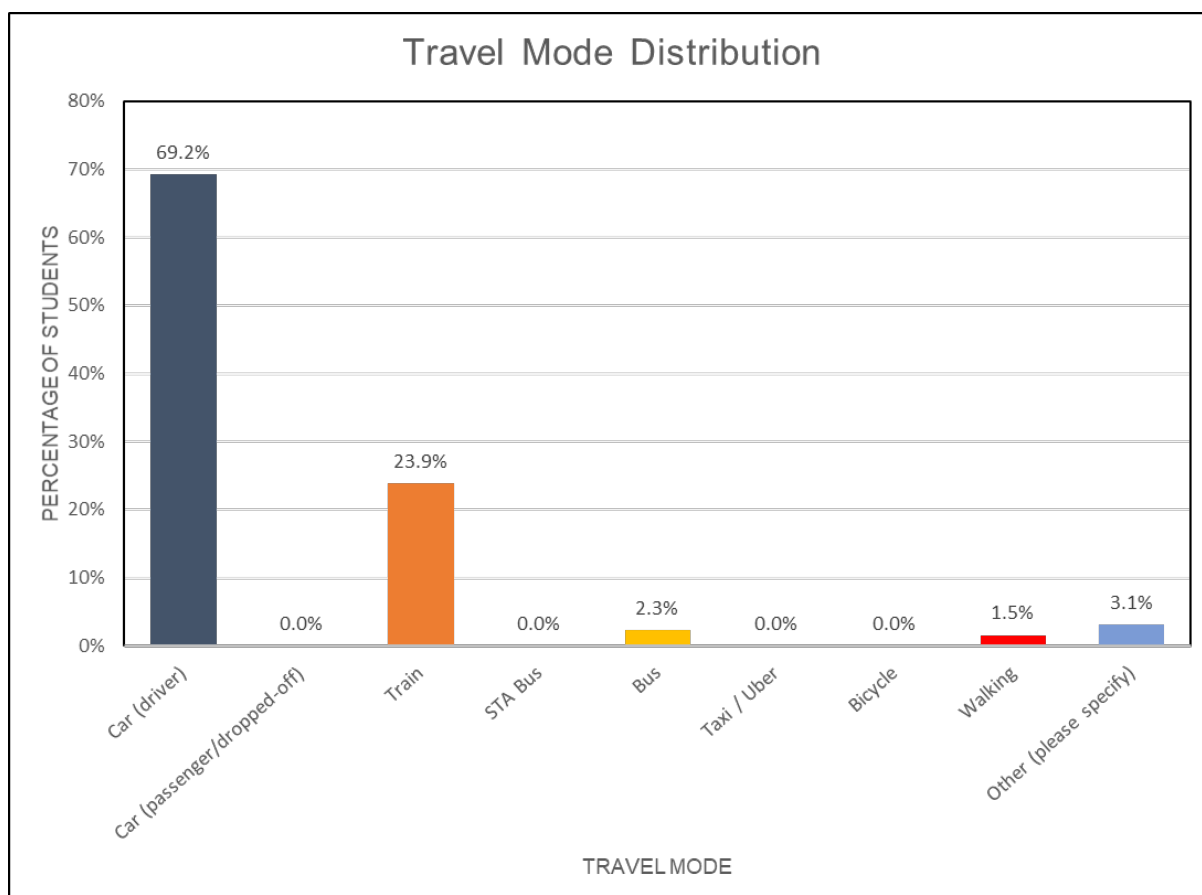


Figure 13: Staff Travel Mode

In summary, the Staff Travel Survey indicates that:

- Approximately 69% of Staff drive to / from the School; and
- Approximately 31% of Staff use alternative forms of transport to travel to / from the School.

4.4.2 Staff Arrival and Departure Peaks

Figure 14 provides details of the surveyed Staff arrival times, while **Figure 15** provides details of the surveyed Staff departure times.

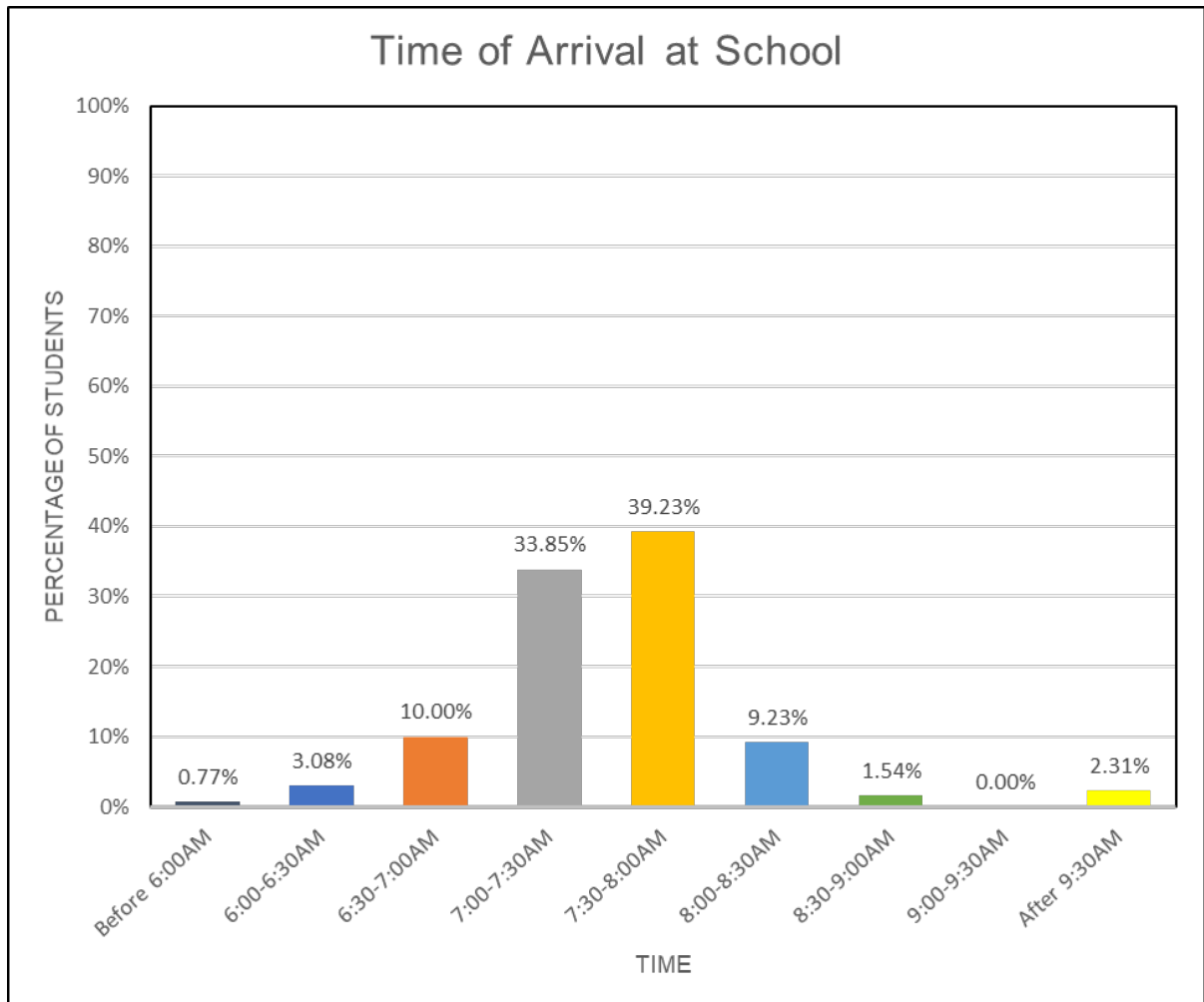


Figure 14: Staff Time of Arrival

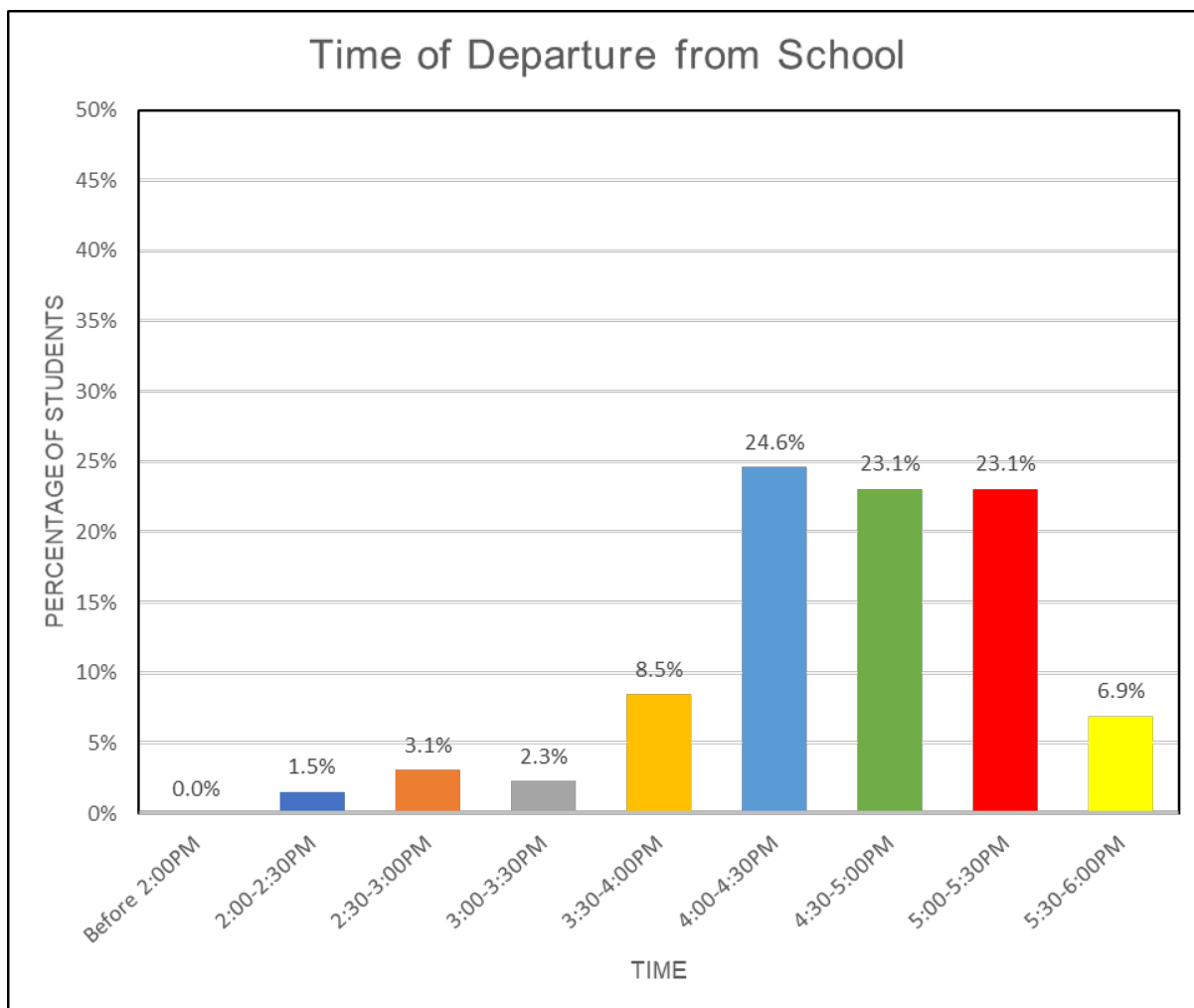


Figure 15: Staff Time of Departure

In summary, the Staff Travel Survey indicates that:

- Staff arrive and depart the School during earlier and later periods (respectively) than students; and
- The Staff arrival and departure profiles are distributed over significantly broader periods than students.

4.5 Travel Mode Summary

With reference to sections above, **Table 2** provides a summary of existing travel modes for all students and staff at the School.

Table 2: Existing Mode Share Summary

Travel Mode	Existing Mode Share of Junior Students	Existing Mode Share of Senior Students	Existing Mode Share of Staff
Vehicle driver	N/A	6%	69%
Dropped Off	86%	36%	0%
Taxi / Uber	0%	0%	0%
Train	1%	32%	24%
STA Bus	1%	7%	2%
Meriden School Bus	5%	11%	N/A
Bicycle	0%	0%	0%
Walk	5%	5%	2%
Other mode	2%	3%	3%

4.6 Existing School Traffic Generation

With reference to the Travel Survey information outlined in sections above, an estimate of the peak traffic generation of the School in the broader AM arrival and PM departure peak periods considers the following:

- **Student drop-off / pick-up:** The students generate both an arrival and departure trip in both the AM peak and PM peak periods.
- **Student car driver:** These students generate an arrival trip in the AM peak period and a departure trip in the PM peak period.
- **Staff car driver:** These staff generate an arrival trip in the AM peak period and a departure trip in the PM peak period.
- **Car Occupancy:** For students and staff travelling to the School by car, how many students and / or staff per vehicle.

In regard to this last factor – car occupancy – the Travel Surveys found that the average car occupancy for students was approximately 1.5 students per vehicle, with Senior students having a slightly higher car occupancy (1.6 students per vehicle) than the Junior students (1.4 per vehicle). Staff car occupancy was essentially 1 staff member per vehicle.

Further to consideration of these factors, the AM peak hour generation of the School occurs in the hour 7:30am – 8:30am, while the PM peak hour generation of the School occurs in the hour 3:00pm – 4:00pm.

With reference to the traffic surveys (detailed in **Section 5** below), the AM School peak hour coincides with the AM road network peak hour, while the PM School peak hour has marginally lower flows than were reported in the adjacent road network peak hour (which was observed between 3:15pm – 4:15pm).

During the identified School peak hours, the School generates:

- AM Peak Hour:
 - 519 arrival trips; and
 - 400 departure trips.
- PM Peak Hour:
 - 423 arrival trips; and
 - 366 departure trips.

4.7 Trip Distribution

With reference to the Travel Survey, the traffic surveys (reported in **Section 5**) and on-site observations, trips are generally distributed in the following manner:

- Approximately 50% of all trips are to / from the Senior School Kiss and Ride facility on the northern side of Margaret Street (see **Figure 16** below);
- Approximately 15% of all trips are to / from the Junior School Kiss and Ride facility on the southern side of Margaret Street; and
- Approximately 35% of all trips are to / from the Junior School Kiss and Ride on the eastern side of Vernon Street.



Figure 16: Meriden School Kiss & Ride Zones and Bus Zone

4.8 Car Parking

The School currently provides 98 car parking spaces across the Senior and Junior campuses. Further to the completion of Lingwood Campus Stage 1 works, an additional 8 parking spaces will be provided on the Lingwood Campus; a total of 106 parking spaces would therefore be provided across the three School campuses.

5 Existing Road Network

5.1 Road Hierarchy

The key roads in the vicinity of the School are shown Figure 6 and are summarised below:

- **Redmyre Road:** Redmyre Road is a RMS State Road (MR668) north of the School that provides a connection between The Boulevard and Chalmers Road in an east-west direction. It generally provide 3 traffic lanes of traffic in each direction along the northern frontage of the School before tapering back to 1 traffic lane in each direction along the western School frontage, with on-street parking also provided on both sides of the road.

Redmyre Road has a posted speed limit of 50km/hr outside of school peak periods, where School Zone restrictions reduce the speed limit to 40km/hr.

- **Margaret Street:** Margaret Street is a local road that generally runs in an east-west direction between the School campuses, linking The Boulevard and Morwick Street to the east with Redmyre Road to the west. It provides a 1 traffic lane in each direction, and restricted on-street parking on both sides of the road. A mid-block pedestrian crossing linking the Northern Campus with the Junior Campus and Lingwood Campus to the south is located immediately adjacent to the Lingwood Campus.

Margaret Street has a posted speed limit of 50km/hr outside of school peak periods, where School Zone restrictions reduce the speed limit to 40km/hr.

- **Vernon Street:** Vernon Street is a local road that generally runs in a north-south direction along the Junior Campus' western frontage. It provides 1 traffic lane in each direction, and on-street parking on both sides of the road.

Vernon Street has a posted speed limit of 50km/hr outside of school peak periods, where School Zone restrictions reduce the speed limit to 40km/hr.

- **Carrington Avenue:** Carrington Avenue is a local road that generally runs in an east-west direction to the south of the School, connecting to Vernon Street and the Boulevard. Its eastern end provides direct pedestrian links to pedestrian bridge crossing The Boulevard. It has a posted speed limit of 50km/hr outside of school peak periods, where School Zone restrictions reduce the speed limit to 40km/hr. It provides 1 traffic lane in each direction, and on-street parking on both sides of the road.
- **Morwick Street:** Morwick Street is a RMS regional road (SR2027) that runs in an east-west direction to the east of the School, connecting The Boulevard and Margaret Street via a signalised intersection before terminating to the east at the Wentworth Road & Railway Parade intersection.

It generally provides 2 traffic lanes in each direction, and restricted parking on both sides of the road.

- **The Boulevarde:** The Boulevarde is a RMS State Road (MR668) that generally runs in a north-south direction to the east of the School, connecting Margaret Street and Redmyre Road with the Strathfield Town Centre (and Strathfield Station). It generally provides 2 traffic lanes in each direction. The Boulevarde carries approximately 20,700 vehicles per day both ways. A key pedestrian bridge (for School students) provides access over The Boulevard between Russell Street and Carrington Avenue.
- **Raw Square:** Raw Square is a RMS State Road (MR668) that generally runs in a north-south direction north of the Site, connecting Leicester Avenue and Everton Road to north with Redmyre Road to the south, and provides a key linkage between Strathfield and the A44 and M4 motorways via the rail underpass.

5.2 Traffic Surveys

Traffic surveys were undertaken in February 2019 at the intersections of Raw Square & Redmyre Road, The Boulevarde & Morwick Road & Margaret Road, and Margaret Street & Redmyre Road during extended AM (6:00am – 10:00am) and PM (2:00pm – 6:00pm) peak periods. The traffic flows during the School peak hours (as determined in **Section 4**) are summarised in **Figure 17** and **Figure 18**.

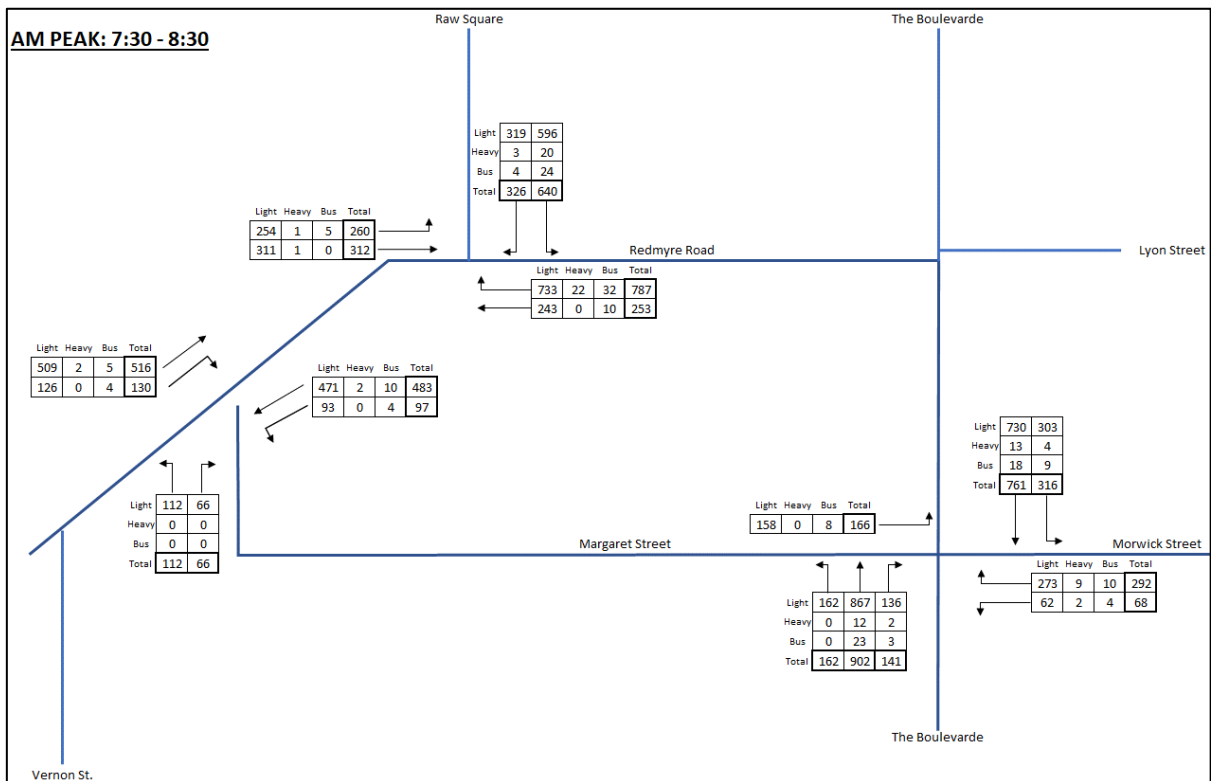


Figure 17: Existing AM Peak Hour Traffic Flows

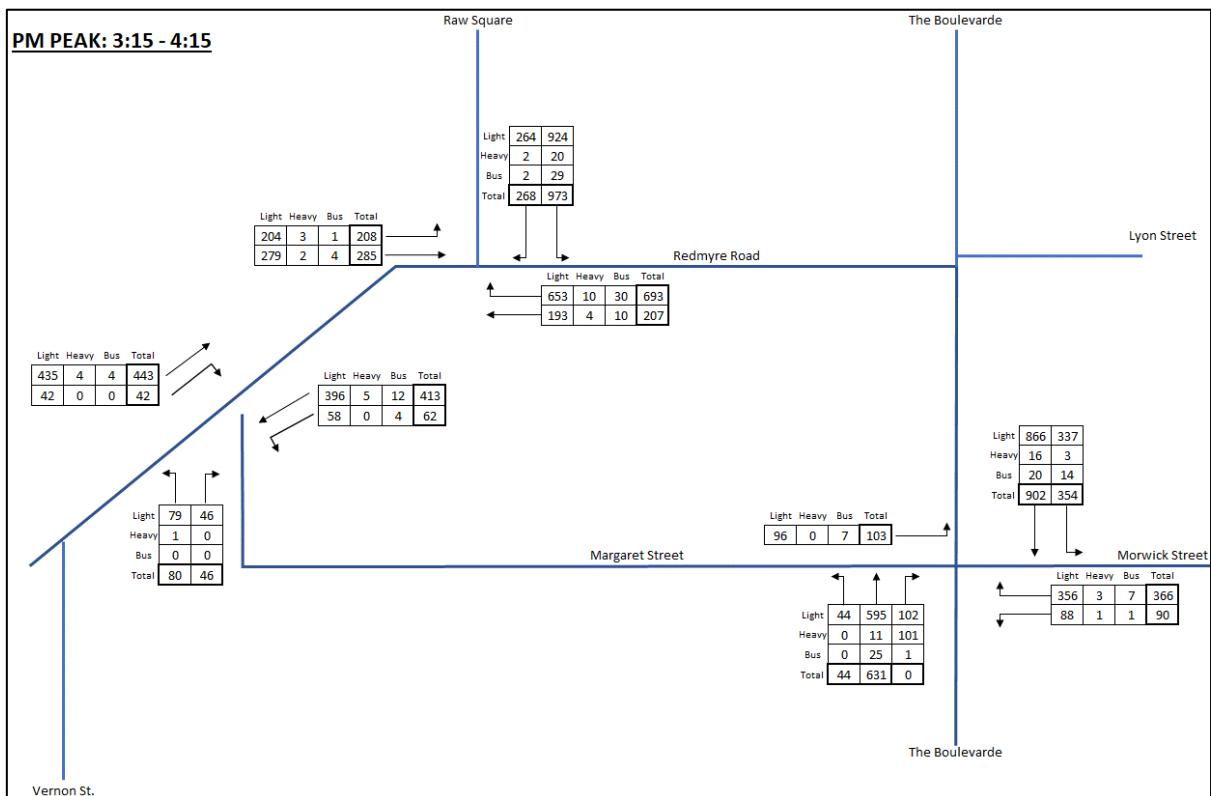


Figure 18: Existing PM Peak Hour Traffic Flows

5.3 Intersection Analysis

5.3.1 SIDRA Model

The key intersections identified above in **Section 5.2** have been assessed using the SIDRA intersection model; a SIDRA Network model has been employed for the adjacent intersections of Raw Square & Redmyre Road and Margaret Street & Redmyre Road to model a more accurate depiction of the existing local road network, while the intersection of The Boulevard & Morwick Road & Margaret Road has been assessed as an isolated intersection.

The SIDRA model provides the following key performance measures:

- **Degree of Saturation (DOS):** DOS is defined as the ratio of demand (arrival) flow to capacity.
- **Average Vehicle Delay (AVD):** AVD (or average delay per vehicle in seconds) also provides a measure of the operational performance of an intersection, and is used to determine an intersection's Level of Service (see below). For signalised intersections and roundabouts, the AVD reported relates to the average of all vehicle movements through the intersection, while for priority intersections, the AVD reported is that for the movement with the highest AVD.
- **Level of Service (LOS):** LOS is a comparative measure that provides an indication of the operating performance of an intersection based on AVD. For signalised and roundabout intersections, LOS is based on the average delay to all vehicles, while at priority-controlled intersections LOS is based on the worst approach delay.

Table 3 provides a summary of RMS LOS parameters.

Table 3: RMS Level of Service Summary

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

5.3.2 Existing Intersection Operations

The existing performance of the key intersections is reported in **Table 4**.

Table 4: Existing Intersection Performance

Intersection	Control Type	Period	DOS	AVD	LOS
Raw Square / Redmyre Road	Signals	AM	0.723	29.0	C
		PM	0.618	26.7	C
The Boulevarde / Morwick Road / Margaret Road	Signals	AM	0.560	13.7	B
		PM	0.616	15.1	B
Margaret Street / Redmyre Road	Priority	AM	0.334	13.3	B
		PM	0.182	8.7	A

With reference to **Table 4**, the key intersections all operate with satisfactorily LOS, DOS and AVD.

During on-site observations, it was noted that during the 15 minute period immediately after School finishes (3:05pm – 3:20pm) there were queues observed in the road network in the immediate vicinity of the School (and specifically in Margaret Street). However, these queues occurred only during this 15 minute period, with queues cleared completely by 3:30pm. This is of course a trend consistent with all schools during the PM peak period where a large number of students exit at a similar time.

5.4 Accident Data

An analysis of crash statistics from the TfNSW Centre for Road Safety database indicates that there were a total of 4 crashes at the intersection of Raw Square & Redmyre Road during the 5-year reporting period 2013 – 2017 inclusive. These included crashes ranging from non-casualty to moderate injury, with 2 serious injuries recorded and no fatalities. 1 crash was reported at the intersection of Margaret Street & The Boulevarde & Morwick Street in the same 5-year period, resulting in a moderate injury.

At the intersection at Redmyre Road & The Boulevarde 4 crashes were reported during the same 5-year period, including 3 non-casualties and 1 minor injury accident. Along Margaret Street, 2 non-casualty crashes were reported for the same 5-year period, both of which occurred outside of School hours.

Figure 19 shows all crash locations in the vicinity of the School, while **Table 5** summarises the historical crash data for the key intersections bounding the School.

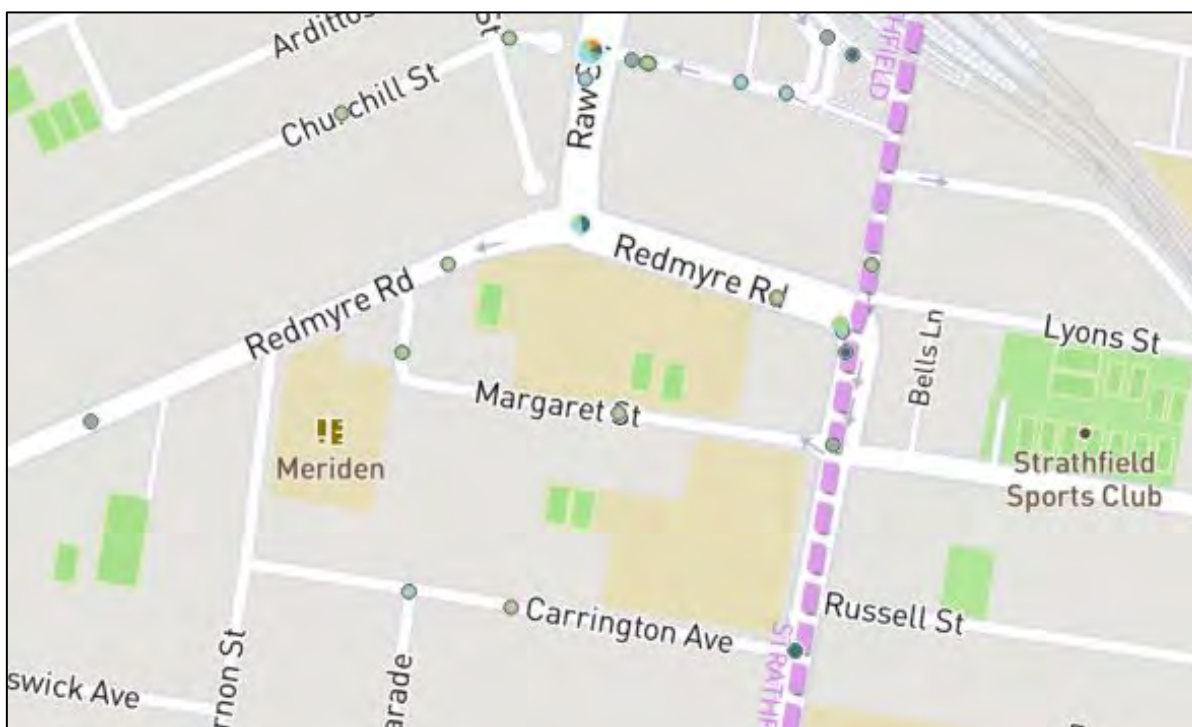


Figure 19: Historical Crash Locations

Table 5: Historical Crash Data

Year	Degree of Crash	RUM Code	RUM Description
<i>Raw Square / Redmyre Road</i>			
2013	Minor/Other Injury	21	Right through
2014	Non-Casualty	21	Right through
2016	Serious Injury	21	Right through
2017	Serious Injury	21	Right through
<i>Margaret Street / The Boulevard / Morwick Street</i>			
2016	Moderate Injury	30	Rear end
<i>Redmyre Road / The Boulevard</i>			
2013	Minor/Other Injury	35	Lane change left
2013	Non-Casualty	85	Off carriageway – Right on left – Bend into objects – Parked vehicle
2016	Non-Casualty	13	Right near
2016	Non-Casualty	15	Right/left far
<i>Margaret Street</i>			
2014	Non-Casualty	73	Right off carriageway – Into objects – Parked vehicle
2017	Non-Casualty	71	Left off carriageway – Into objects – Parked vehicle

6 Public & Active Transport

6.1 Public Transport

The School is well serviced by local public and active transport services and infrastructure, as shown in **Figure 20** and detailed in sections below.

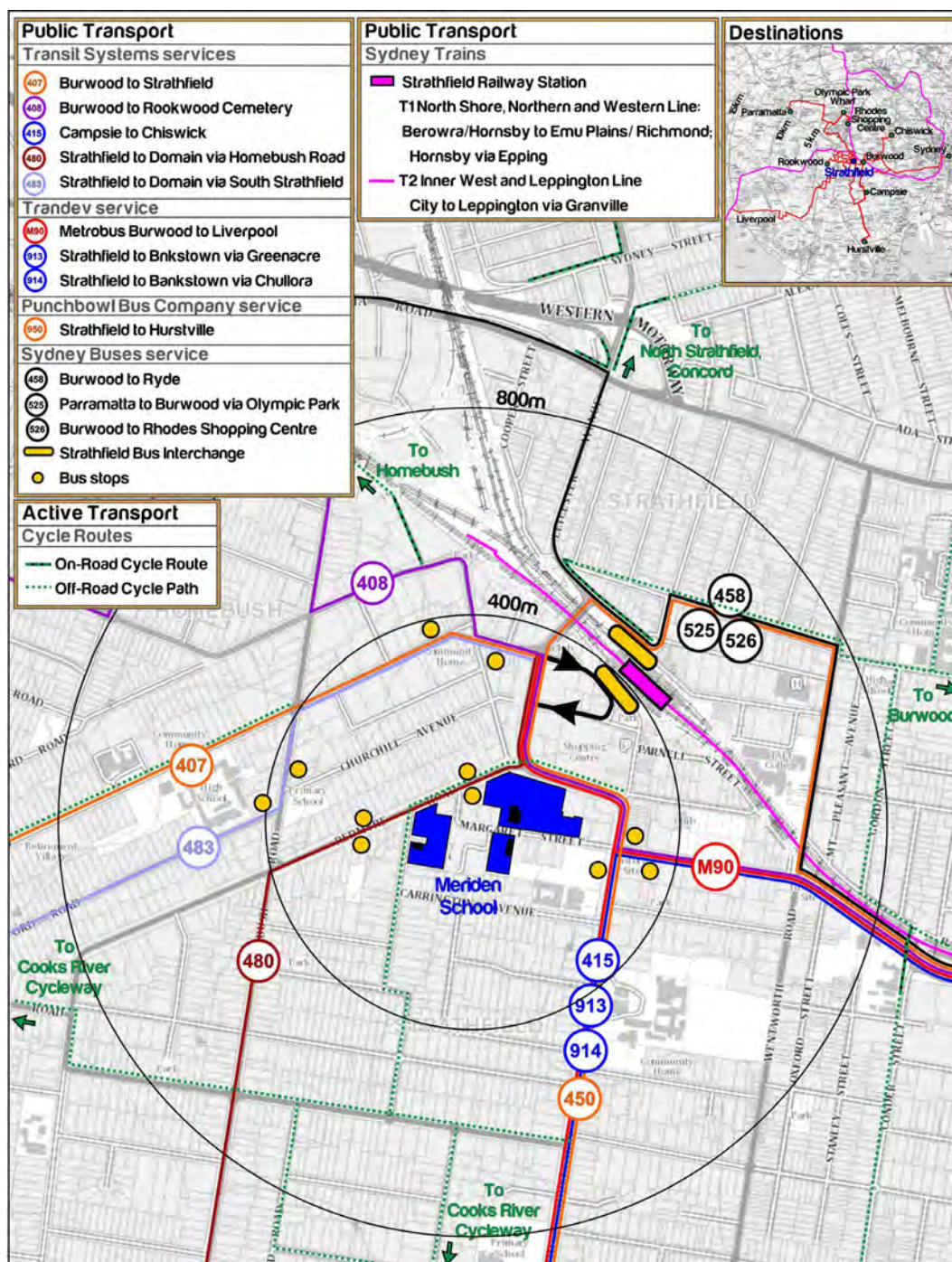


Figure 20: Public Transport Network

6.2 Railway Services

The Public Transport Guidelines state that train services influence the travel mode choice of areas within 800 metres walk (approximately 10 minutes) of a train station. In this regard, Strathfield Station is located approximately 200m – 400m to the north of the School (based on the different campuses). Strathfield Station is a major rail hub that provides the following frequent services:

- **Sydney Trains Services:**
 - T1 North Shore, Northern & Western Line;
 - T2 Inner West & Leppington Line;
 - T3 Bankstown Line;
 - T7 Olympic Park Line.
- **Intercity Trains Services:**
 - BMT – Blue Mountain Line;
 - CCN – Central Coast & Newcastle Line;
 - North Coast NSW;
 - North West NSW;
 - Western NSW.

6.3 Public Bus Services

The Public Transport Guidelines state that bus services influence the travel mode choices of areas within 400 metres walk (approximately 5 minutes) of a bus stop. In this regard, bus stops are located within 400 metres walking distance from the School in Redmyre Road, The Boulevard, Albert Road and near Strathfield Station, as shown in **Figure 20**. A major bus interchange is also located at Strathfield Station providing an accessible location to transfer to different buses services (and between rail and bus).

There are twelve bus routes within walking distance of the School, which are listed in **Table 6** below.

Table 6: Public Bus Services

Bus Number	Route
407	Burwood to Strathfield
408	Burwood to Rookwood Cemetery
415	Campsie to Chiswick
480	Strathfield to Domain via Homebush Road
483	Strathfield to Domain via South Strathfield
M90	Metrobus Burwood to Liverpool
913	Strathfield to Bankstown via Greenacre
914	Strathfield to Bankstown via Chullora
950	Strathfield to Hurstville
458	Burwood to Ryde
525	Parramatta to Burwood via Olympic Park
526	Burwood to Rhodes Shopping Centre

With reference to Table 6, it is clear that the School has excellent access to bus services, noting that Routes 480, 415, 913, 914 and 450 operate via the Redmyre Road and The Boulevard bus stops in in close proximity to the School.

6.4 School Bus Services

The School currently provides private school bus services for its students which operate along the following routes:

- Drummoyne – Russell Lea - Five Dock – Canada Bay - Concord
- Concord – Breakfast Point - Cabarita
- Balmain – Rozelle – Leichhardt – Dulwich Hill
- Summer Hill – (Trinity Grammar)
- Woolwich – Hunters Hill – Gladesville – Putney - Rhodes
- Illawong – Padstow Heights – Beverly Hills
- Taren Point – Miranda – Sylvania – Blakehurst
- Hurstville – Beverly Hills

These bus services typically arrive at the School at around 8.00am and depart the School between 3:20pm and 3:30pm every weekday. School bus pick-up and set-down zones are

located along the northern side of Margaret Street, with Junior escorted across the pedestrian crossing to the bus marshalling area north of the bus zone within the Senior Campus.

6.5 Pedestrian Accessibility

The areas surrounding the School are well serviced in terms of pedestrian infrastructure with footpaths available on both sides of roads near the School. **Figure 21** details the key pedestrian crossings; **Figure 22** showcases the pedestrian routes between campuses, and **Figure 23** details the pedestrian desired routes to transport options.



Figure 21: Key Pedestrian Road Crossings

Table 7 details the key pedestrian crossings around the vicinity of the Site in reference to **Figure 21**.

Table 7: Pedestrian Crossings

Number Reference	Location	Pedestrian Crossing Description
1	Redmyre Road / Raw Square	Signalised crossing on western and northern leg with pedestrian refuge island
2	Redmyre Road / The Boulevarde	Signalised crossing on western and northern leg with pedestrian refuge islands
3	The Boulevarde / Margaret Street / Morwick Street	Signalised crossing on southern and western leg / zebra crossing on western leg with pedestrian island
4	The Boulevarde / Russell Street / Carrington Avenue	Pedestrian Bridge crossing The Boulevarde / zebra crossing through Russell Street / Unsignalised crossing through Carrington Avenue
5	Vernon Street / Redmyre Road	Unsignalised crossing through Vernon Street
6	Margaret Road / Redmyre Road	Unsignalised crossing through Margaret Street with pedestrian refuge island
7	Margaret Road	Mid-block pedestrian crossing
8	Carrington Avenue	Mid-block pedestrian crossing

Pedestrian access is provided by footpaths along Margaret Street, Redmyre Road, The Boulevarde, Raw Square and the majority of roads within the Strathfield Town Centre. These footpaths are generous in width, especially at Margaret Street with footpath widths of up to 2.5m provided on both sides of the road. Footpaths near the Strathfield Town Centre are wide and well-integrated into the street amenities to handle large pedestrian volumes.

Signalised crossings near the vicinity of the school are available at the following key intersections:

- Redmyre Road / Raw Square
- Redmyre Road / The Boulevarde
- The Boulevarde / Morwick Street / Margaret Street

These first two intersections mentioned above have staged crossings with pedestrian islands at the centre of the major road. The Boulevarde / Morwick Street / Margaret Street intersection consists of two signalised crossing at the south and west legs and a zebra crossing with a pedestrian island along Margaret Street.

A key mid-block pedestrian crossing is located at Margaret Street which links the southern Lingwood Campus and Junior Campus to the northern Senior Campus. A crossing supervisor attends this pedestrian crossing during the peak pick-up and set-down school periods. Pedestrian movements along Margaret Street and Vernon Street are further supervised by the School's personnel during the School's peak arrival and departure periods.

The intersection at Redmyre Road / Margaret Street provides a pedestrian refuge island at the Margaret Street leg. A pedestrian bridge is also provided over The Boulevard, located between Russell Street and Carrington Avenue, providing a safe pedestrian access without interacting with vehicles.

The following figures detail the desired pedestrian routes between campuses and to and from the campuses.

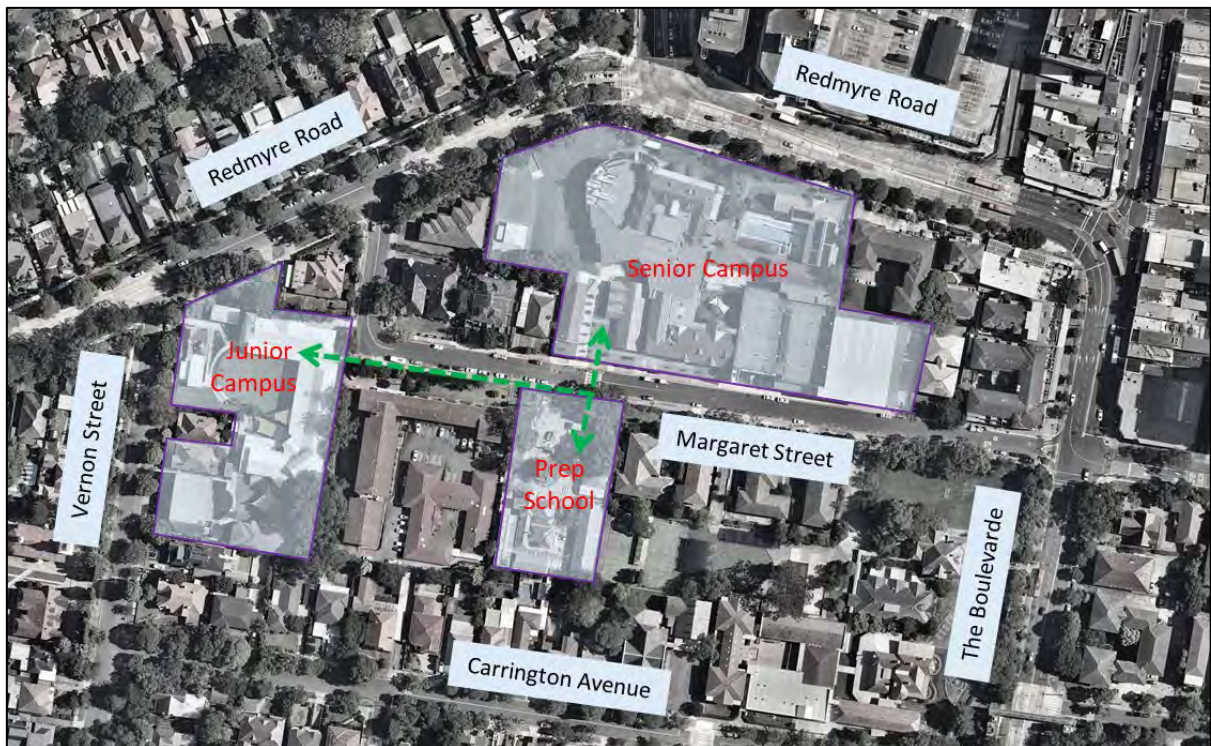


Figure 22: Desired Pedestrian Routes between Campuses



Figure 23: Desired Pedestrian Routes

6.6 Cycle Routes

There are currently limited dedicated cycling facilities and routes that directly connects with the School. The existing Strathfield Council Cycling Map details local bike routes to the south and north-west of the Site. The Bay-to-Bay route, located to the west of the School, includes off road sections along Cooks River which runs generally in a north-south direction. The existing cycling route is detailed in **Figure 24**. Strathfield Council intends to improve the cycling facilities and routes in the future as detailed in their Active Travel Plan Report. The proposed bicycle network is showcased in **Figure 25** and identifies Redmyre Road as part of the local network (on road).

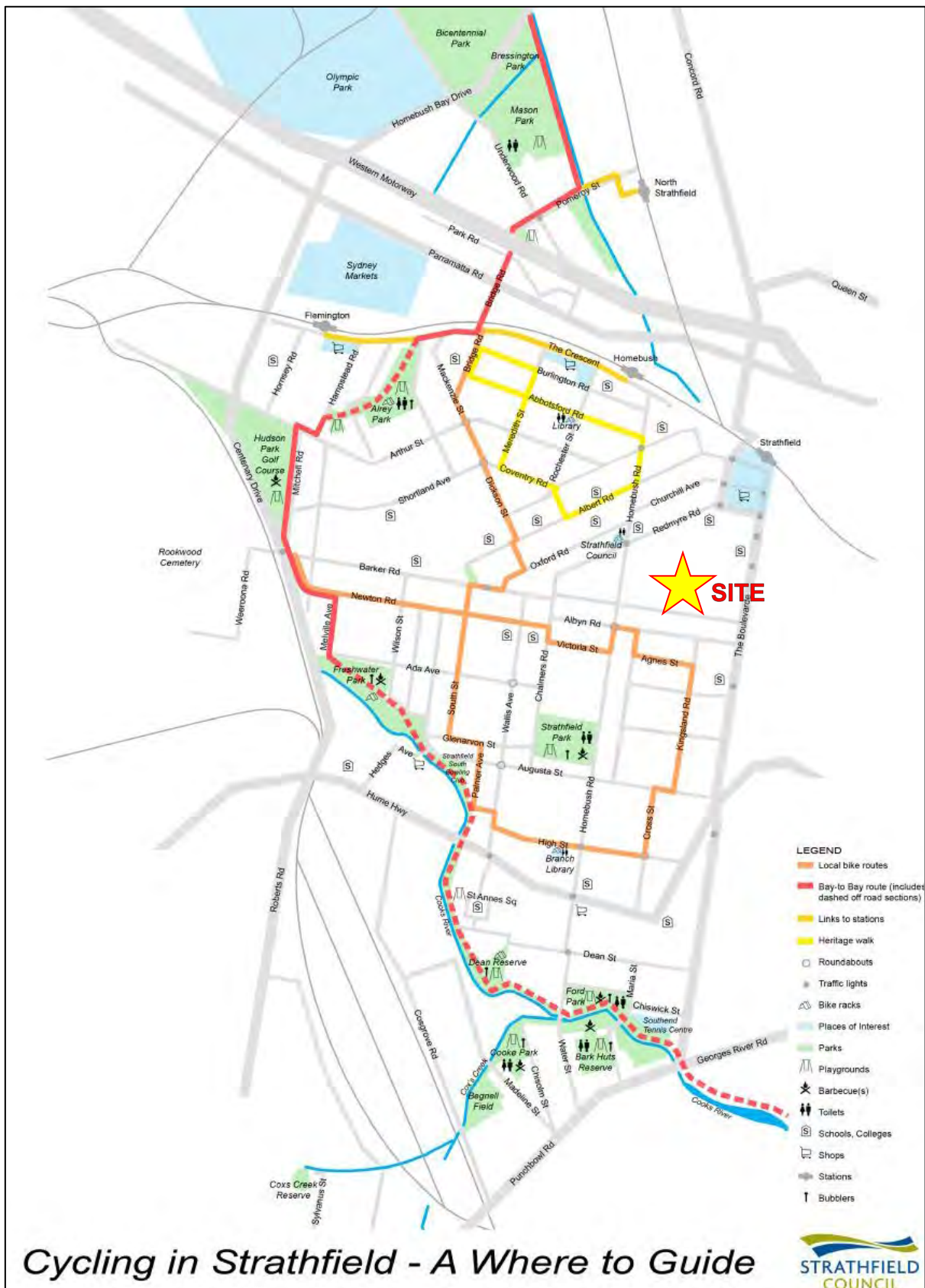


Figure 24: Existing Strathfield Cycling Routes

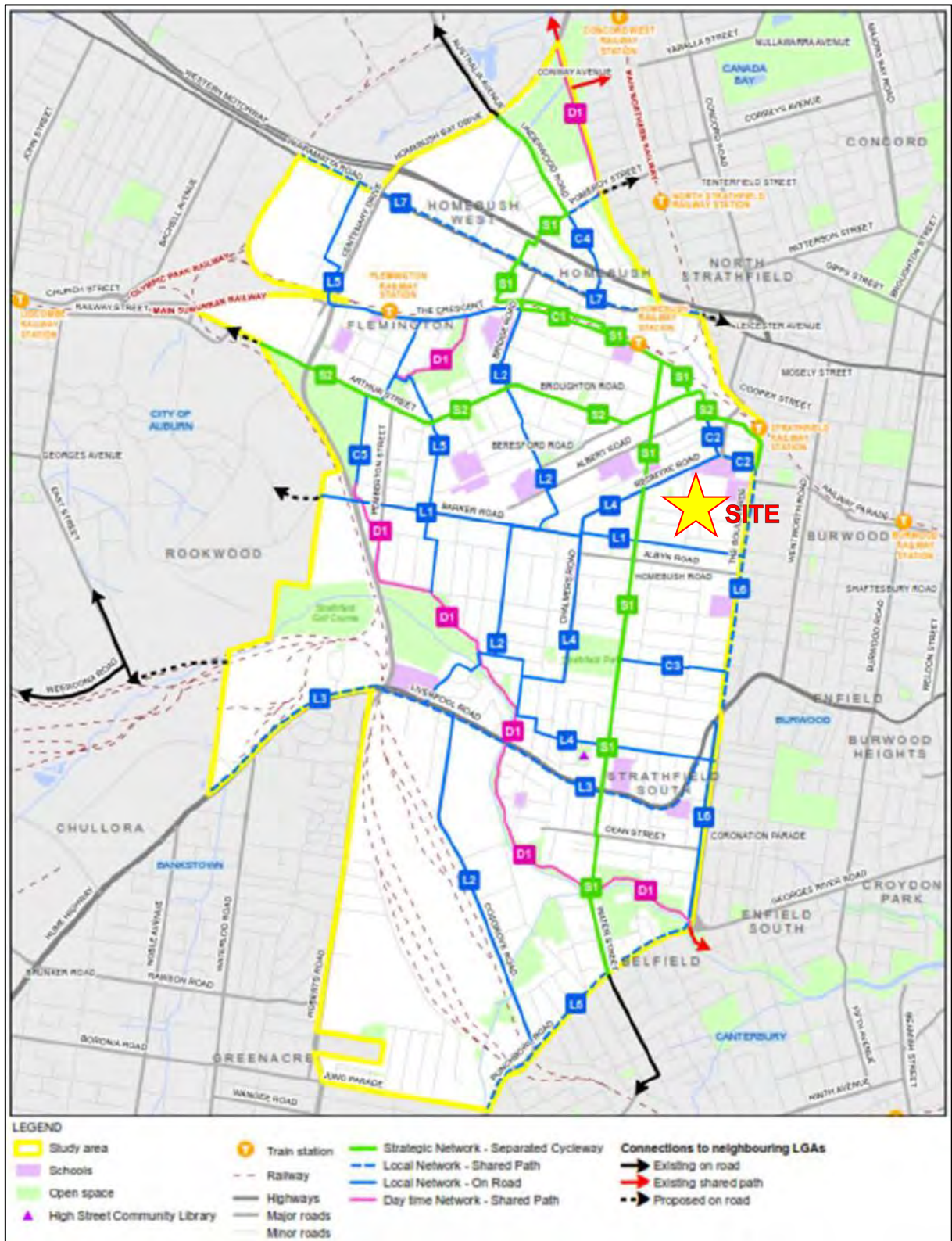


Figure 25: Proposed Strathfield Cycling Routes

7 School Pedestrian and Traffic Management

7.1 Morning Drop-off Periods

Meriden private school buses arrive at the School between 8:00am to 8:20am. The buses first drop Senior Campus students at Margaret Street at the bus zone before continuing towards Vernon Street for Junior Campus students to disembark at the Kiss and Ride zone along Vernon Street.

Kiss and Drop students are to arrive via The Boulevard to access the Margaret Street Kiss and Drop zones or to access the Vernon Street Kiss and Drop zones via Redmyre Road. Students will be able to walk directly to their respective campuses along the footpaths. **Figure 26** demonstrates the pick-up / drop-off zones and the bus zone. School personnel manage the mid-block pedestrian crossing along Margaret Street to ensure students have the right of way and pedestrian safety. School personnel also manage the Kiss and Ride Zone for the Junior Campus to ensure students head straight into School grounds on arrival.

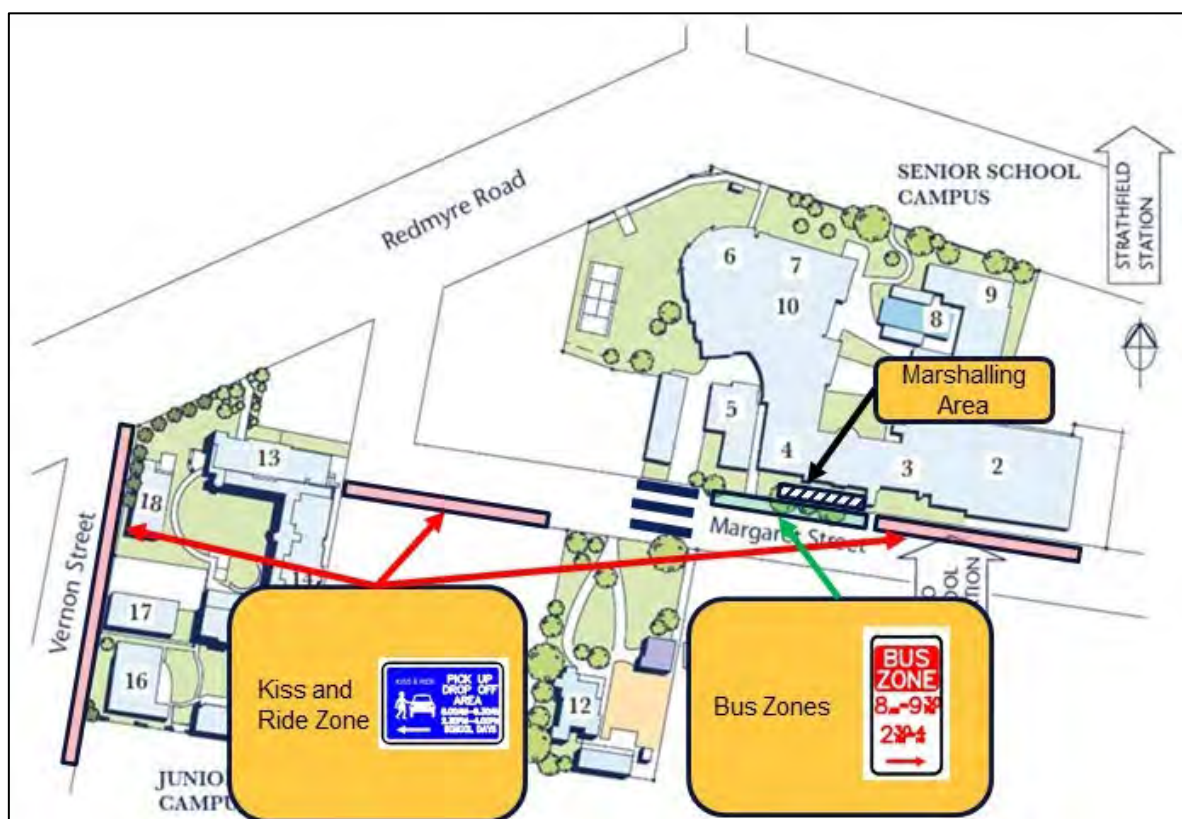


Figure 26: School Traffic Management Signs and Zones

7.2 Afternoon Pick-up Periods

During afternoon pick-up periods, traffic and pedestrian activities intensify between 2:50PM to 3:30PM.

Four buses would be waiting at the bus zone at the start of the afternoon peak period. Junior Campus students catching buses will be escorted from their campus, across the pedestrian crossing, to the marshalling zone at the Senior School Campus as depicted in Figure 26. School personnel control the mid-block pedestrian crossing along Margaret Street to ensure students have the right of way while crossing the street. Students at the marshalling zone would then board their respective buses and buses will leave promptly at 3:20PM. The remaining buses would arrive immediately, and students would board these buses by 3:30PM before the bus departs.

Afternoon Kiss and Ride student management operates from within the School Campus and are intended for Pre-School and Junior School students. Students would wait within School boundaries and wait for staff stationed at the roadside to communicate back to the school grounds via radio when their lift arrives at the Kiss and Ride zone. The student is then escorted out to their respective vehicle. Parents are to display their child's name on their dashboard to increase the efficiency of the pick-up operation. Pre-school and Junior Campus afternoon pick-up times are staggered to reduce the peak afternoon traffic around Meriden School.

7.3 On-Site Observations

Although managed efficiently, vehicle queuing for pick-ups often spills onto Redmyre Road and The Boulevard as parents queue up to pick up their children. The pick-up queues along Redmyre Road can often block through traffic flows due to the provision of a single lane in both direction on Redmyre Road as parents line up to turn left or right into Vernon Street or Margaret Street. Our observations note that the arrival of the 3:20PM School Buses at Margaret Street can cause significant standstill and queuing along Margaret Street and Redmyre Road for approximately 2 to 3 minutes while the fleet of buses wait for the earlier school buses to finish boarding and leave.

Nevertheless, these peak pick-up and drop-off conditions only last for a short period of time from 3.05pm to 3.20pm and traffic conditions quickly clear and return to prior traffic conditions. These conditions are typical of the after school period where a large number of students all depart at similar times.

7.4 Movement between Campuses

Students move between campuses during operational School hours. Senior Campus students are required to sign out prior to escorting themselves to the Junior Campus for co-curricular activities (for example, music lessons and practice). Junior Campus students would also use the Senior Campus'

facilities during school hours. However, Junior Campus students would move in class groups and be escorted by teaching staff.

7.5 Future Operations

It is intended that all traffic and pedestrian management operations will remain the same following the SSDA, noting that the SSDA would improve existing facilities. The proposed school facilities are unlikely to require any additional changes to the current pedestrian and traffic management plan.

8 Parking & Servicing Requirements

8.1 Car Parking

Reference has been made to Council's DCP to determine the requirements for parking for the Proposal. However, Council's DCP does not provide specific requirements for educational uses. Therefore, parking requirements for the School are based on balancing the operational demand whilst also not overproviding for parking. Based on the results of the Travel Surveys, some 11 students and 72 staff currently park within School grounds. As noted in Section 4.8, the School currently provides for 98 car parking spaces and a further 8 would be provide following completion of construction for the Stage 1 Lingwood Campus Development.

With an increase in of two (2) staff members proposed, an increase of two parking spaces is could be required as a result of the SSDA. Further, it is expected that there would be a maximum of an additional 2 Senior School Students driving to School (refer to Section 9), which would not significantly impact parking demands. Therefore, under the worst-case scenario that the two additional teachers drive, the maximum estimated parking demand would be a total of four (4) parking spaces. Currently, there would be a surplus of 23 spaces on-site (including the additional 8 spaces from Stage 1 Lingwood Campus Development) and as such, the additional parking demand would be satisfied by the parking provision.

To summarise, the Travel Surveys illustrate that the School currently accommodates the required parking demand and given that there would be 2 additional staff and a nominal number of additional students would be travelling to the School, the 4 additional parking spaces demand would be accommodated by the future surplus of 23 spaces. Therefore, it is concluded that the SSDA is supportable on car parking grounds.

9 Traffic Assessment

9.1 Traffic Generation

9.1.1 Proposed School Population Increase

It is noted that the SSDA would nominally increase student numbers across the School and therefore there would not be an increase in staff numbers as a result of the SSDA. As such, this assessment considers the traffic impacts of the increase in 50 students and 2 staff members across the whole School.

9.1.2 Student Trip Generation

The Senior School currently has a cap of 900 students, however it could accommodate 936 students based on its current classroom sizes. Therefore, one purpose of this application is to remove the cap on the Senior School, and to consider the School as whole, which could accommodate 1,550 students. The allocation of additional students would therefore result in the capacity for 36 extra students to be accommodated by the Senior Campus and an extra 14 students to be accommodated by the Junior Campus.

Considering the increase in student capacity of 50 students, and accounting for a reasonable car occupancy (i.e. more than 1 student per car) as reported in the Travel Surveys, the resulting vehicles would generate an arrival trip and a departure trip.

With further reference to the Travel Surveys, of the Junior Campus generated trips, 90% are generated in the AM School peak hour, and 83% are generated in the PM School peak hour. Of the Senior Campus generated trips, 91% are generated in the AM School peak hour 82% are generated PM School peak hour.

The resulting additional trips in the AM School peak hour are summarised in **Table 8** and **Table 9**.

Table 8: Additional Student Trips Morning Peak Hour: Junior Campus

AM	K - Yr 6	13	Car Occupancy	AM Arrival	AM Departure
Vehicle driver	0%	0			
Dropped Off	86%	11	1.4	8	8
Taxi / Uber	0%	0			
Train	1%	0			
STA Bus	1%	0			
Meriden Bus	5%	1			
Bicycle	0%	0			
Walk	5%	1			
Other mode	2%	0			
	100%	13		8	8

Table 9: Additional Student Trips Morning Peak Hour: Senior Campus

AM	Yr 7 - 12	33	Car Occupancy	AM Arrival	AM Departure
Vehicle driver	6%	2		2	
Dropped Off	36%	12	1.6	7	7
Taxi / Uber	0%	0			
Train	32%	10			
STA Bus	7%	2			
Meriden Bus	11%	4			
Bicycle	0%	0			
Walk	5%	2			
Other mode	3%	1			
	100%	33		9	7

Table 10 summarises the total additional morning peak hour trip generation expected as a result of the increase in 50 students.

Table 10: Total Student AM Trip Generation

Travel Mode	Total Mode Share	46	Vehicle AM Arrival	Vehicle AM Departure
Vehicle driver	4%	2	2	0
Dropped Off	50%	23	15	15
Taxi / Uber	0%	0		
Train	23%	10		
STA Bus	5%	2		
Meriden Bus	9%	5		
Bicycle	0%	0		
Walk	5%	3		
Other mode	3%	1		
	100%	46	17	15

As can be seen, there would be a total of 46 additional students arriving at the School during the morning peak hour, with 25 travelling by car. As a result, there would be a total of 32 additional vehicle trips per hour travelling to / from the School (17 arrivals / 15 departures).

The resulting additional trips in the PM School peak hour are summarised in **Table 11** and **Table 12**.

Table 11: Additional Student Trips Afternoon Peak Hour: Junior Campus

PM	K - Yr 6	12	Car Occupancy	PM Arrival	PM Departure
Vehicle driver	0%	0			
Dropped Off	86%	10	1.4	7	7
Taxi / Uber	0%	0			
Train	1%	0			
STA Bus	1%	0			
Meriden Bus	5%	1			
Bicycle	0%	0			
Walk	5%	1			
Other mode	2%	0			
	100%	12		7	7

Table 12: Additional Student Trips Morning Peak Hour: Senior Campus

PM	Yr 7 - 12	29	Car Occupancy	PM Arrival	PM Departure
Vehicle driver	0%	2			2
Dropped Off	86%	11	1.6	7	7
Taxi / Uber	0%	0			
Train	1%	9			
STA Bus	1%	2			
Meriden Bus	5%	3			
Bicycle	0%	0			
Walk	5%	1			
Other mode	2%	1			
	100%	29		7	9

Table 13 summarises the total additional afternoon peak hour trip generation expected as a result of the increase of 50 students.

Table 13: Total Student PM Trip Generation

Travel Mode	Total Mode Share	41	Vehicle PM Arrival	Vehicle PM Departure
Vehicle driver	4%	2	0	2
Dropped Off	50%	21	14	14
Taxi / Uber	0%	0		
Train	23%	9		
STA Bus	5%	2		
Meriden Bus	9%	4		
Bicycle	0%	0		
Walk	5%	2		
Other mode	3%	1		
	100%	41	14	16

As can be seen, there would be a total of 41 additional students departing the School during the afternoon peak hour, with 23 travelling by car. As a result, there would be a total of 30 additional vehicle trips per hour travelling to / from the School (14 arrivals / 16 departures).

9.1.3 Staff Trip Generation

Although the travel survey indicates that staff usually arrive and depart outside of student arrival and departure times, this traffic assessment assumes the worst-case scenario of the additional staff all arriving and departing at the same time as the students via private vehicles. Therefore, it is assumed for this worst-case assessment that there would be 2 AM arrival trips and 2 PM departure trips generated from the additional staff.

9.1.4 Total Trip Generation

Therefore, the total traffic generation increase from the development would be:

- AM Peak: 34 trips (19 arrivals / 15 departures)
- PM Peak: 32 trips (14 arrivals / 18 departures)

The following section will detail the trip distributions of these additional trips.

9.2 Trip Distribution

With reference to sections above, the assignment of these additional trips to the key intersections is shown in **Figure 27** and **Figure 28**.

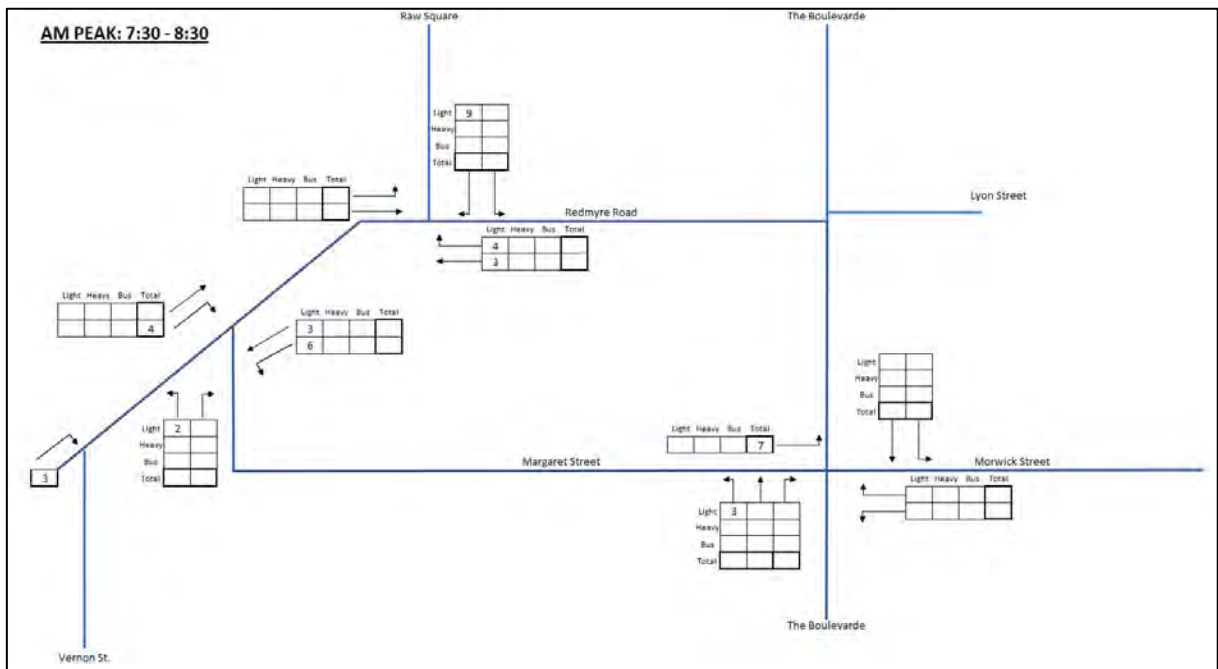


Figure 27: Additional Traffic Generation: AM Peak

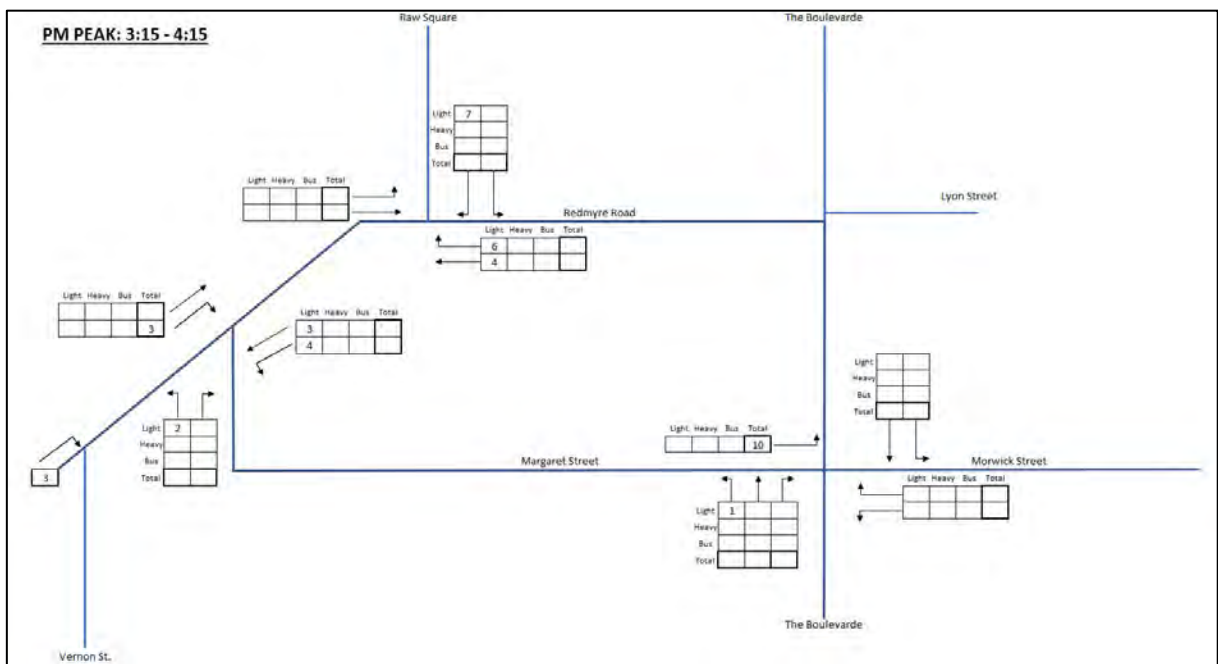


Figure 28: Additional Traffic Generation: PM Peak

9.3 Future Intersection Performance

The operation of the key intersection further to the introduction of the Proposal's traffic flows has again been assessed using the SIDRA model. The results of the assessment are summary in Table 14.

The SIDRA analysis illustrates that the network would be capable of accommodating the trips generated by the Proposal. With reference to **Table 14**, the SIDRA analysis indicates that the future LoS for the assessed intersections will remain consistent with the existing operation. Notwithstanding, there are minimal increases to 'degree of saturation' and 'average delay' in the AM peak and PM peak hours.

Table 14: Base 2019 + Development Intersection Performance Comparison

Intersection	Scenario	Period	Degree of Saturation	Average Delay	LOS
Raw Square / Redmyre Road	Baseline	AM	0.723	29.0	C
		PM	0.618	26.7	C
	With Dev	AM	0.725	29.2	C
		PM	0.625	26.6	C
The Boulevard / Morwick Road / Margaret Road	Baseline	AM	0.560	13.7	B
		PM	0.616	15.1	B
	With Dev	AM	0.560	13.7	B
		PM	0.616	15.0	B
Margaret Street / Redmyre Road	Baseline	AM	0.334	13.3	B
		PM	0.182	8.7	A
	With Dev	AM	0.362	14.8	B
		PM	0.186	9.0	A

With reference to sections above, it has been concluded that the operation of the key intersections further to the Proposal is not significantly different to existing intersection operations. As such, the Proposal is supportable from a traffic impact perspective.

9.4 10-Year Horizon Assessment

As per Department of Planning and Environment's request, a 10-year horizon modelling has been utilised to assess the development's future traffic impacts at the key roads and intersection at the 10 years mark. This sensitivity traffic assessment adopts a typical 3% background traffic growth for all existing traffic flows. Ason Group has defined two combination of traffic scenario for the sensitivity assessment:

- 2029 Baseline Traffic – which consists of 2019 existing (surveyed) traffic plus 10 years' traffic growth

- 2029 Baseline plus Development – which consists of 2019 existing (surveyed) traffic plus 10 years' traffic growth plus the forecast development traffic associated with the Proposal

The operation of the key intersection further to the introduction of the Proposal's traffic flows and the ten year traffic growth has again been assessed using the SIDRA model. The results of the assessment are summary in **Table 15**.

Table 15: Base 2029 + Development Intersection Performance Comparison

Intersection	Scenario	Period	Degree of Saturation	Average Delay	LOS
Raw Square / Redmyre Road	2029 Baseline	AM	1.010	60.5	E
		PM	0.858	32.5	C
	With Dev	AM	1.015	63.3	E
		PM	0.888	33.7	C
The Boulevard / Morwick Road / Margaret Road	2029 Baseline	AM	1.149	26.9	C
		PM	3.239	176.9	F
	With Dev	AM	1.149	27.0	C
		PM	3.239	176.8	F
Margaret Street / Redmyre Road	2029 Baseline	AM	0.667	30.9	D
		PM	0.306	13.6	B
	With Dev	AM	0.677	31.8	D
		PM	0.321	13.9	B

The above results demonstrate that as a result of the 10-years of traffic growth, all key intersections are expected to be approaching, or exceeding, capacity in 2029 in the baseline assessment.

Critically – the impact of the additional traffic generated by the Proposal is expected to be marginal, with the LOS under the 'with development' scenario remaining consistent with the baseline scenario, with very similar AVDs under these design scenarios. As such, it is concluded that the Proposal is supportable from a traffic impact perspective.

10 Conclusions

The key findings of this Transport Assessment (TA) are:

- Ason Group has been engaged by Meriden School to prepare a Transport Assessment (TA) to support a State Significant Development Application (SSDA) which provides for alterations and renovations at the Meriden School, Strathfield (the School).
- The primary objective of the SSDA is to improve the current school facilities to cater for the increased demand for high quality music teaching and learning spaces, additional administration and student facilities and increasing the playground area in the Junior School Campus.
- Specifically, the SSDA would provide for a nominal student increase of 50 students (and 2 staff members) across all three campuses by improving the existing facilities. The facilities include a new Centre for Music and Drama (CMD) at the Senior Campus, a new playground at the Junior Campus and a new Administration and Student Centre at the Lingwood Campus.
- The School is well integrated with the public transport network, with the Strathfield Station and a number of bus routes serving the area within 400m of the School.
- The School has an established Pedestrian and Traffic Management Plan which ensures safe and efficient drop-off and pick-up of students across all three campuses. Notably, there is a staff member patrolling the pedestrian crossing during peak periods to escort students safely across Margaret Street. Further, staff utilise radio communication to ensure Junior School students leave the Campus ground when their lift has arrived.
- On-site observations noted that the drop-off and pick-up periods operated efficiently and safely. Queuing on the surrounding road, specially Margaret Street does occur during peak periods. However, this is observed to last for the short peak periods before and after School and typically last for 15-20 minutes.
- As there is a nominal increase in staff (2) expected as a result of the SSDA, no additional parking is required. Further, the SSDA would only result in a maximum of 4 space parking demand (2 additional students and 2 additional staff driving to School).

Based on the results of the Travel Surveys, a total of 11 students and 72 staff currently park within School grounds. The School currently provides for 98 car parking spaces and a further 8 would be provide following completion of construction for the Stage 1 Lingwood Campus Development. Therefore, there would be some spare parking capacity of 23 spaces if required to accommodate the nominal additional staff and student car trips, if required.

- Traffic demand analysis indicates that the Proposal would result in 34 additional vehicle trips on the surrounding road network during morning evening peak hour and 32 trips in the afternoon peak hour.

- SIDRA Intersection analysis indicates that the key intersections assessed would continue to operate with consistent Degree of Saturation, Average Vehicle Delay, and – importantly – Level of Service would remain unchanged. The analysis demonstrates that the net traffic generation volumes are of a sufficiently low order that once distributed across the three campuses and on to the surrounding road network, the impacts of these volumes at the key intersections would be negligible and the intersections would operate as currently occurs. Therefore, no infrastructure upgrades or mitigation measures are required as a result of the Proposal.
- **Appendix A** provides the Construction Traffic and Pedestrian Management Plan to be implemented during construction on each of the Campuses, in line with the SEARs.
- **Appendix B** provides the Sustainable Travel Plan which details measures that can be implemented to encourage the use of alternative modes of transport for both students and staff to increase non-car travel to the School.

In summary, the Proposal is supportable on traffic planning grounds and will not result in any adverse impacts on the surrounding road network or the availability of on-street parking.

Appendix A

Preliminary Construction Traffic and Pedestrian Management Plan

Preliminary Construction & Pedestrian Traffic Management Plan

Centre of Music & Drama, Lingwood Campus Administration & Student Centre and, Junior School Playground – Meriden School, Strathfield

Ref: 0686r02v5
3/07/2019

Document Control

Project No: 0686r02v3

Project: Meriden School SSDA – Construction Traffic Management

Client: Meriden School

File Reference: 0686r02v5 CPTMP Meriden School

Revision History

Revision	Date	Details	Author	Approved by
I	05/04/2019	Draft	V.Cheng	J. Laidler
II	13/05/2019	Issue	R. Butler-Madden	R. Butler-Madden
III	20/05/2019	Issue	R. Butler-Madden	R. Butler-Madden
IIII	20/06/2019	Issue	R. Butler-Madden	R. Butler-Madden
IIIII	03/07/2019	Issue	R. Butler-Madden	R. Butler-Madden

This document has been prepared for the sole use of the Client and for a specific purpose, as expressly stated in the document. Ason Group does not accept any responsibility for any use of or reliance on the contents on this report by any third party. This document has been prepared based on the Client's description of its requirements, information provided by the Client and other third parties.

Table of Contents

1	INTRODUCTION.....	1
1.1	OVERVIEW	1
1.2	CPTMP COMPLIANCE WITH SEARS	2
1.3	SITE LOCATION	3
1.4	ROAD HIERARCHY	3
1.5	NON-CAR ACCESS	6
2	OVERVIEW OF WORKS	11
2.1	STAGING AND DURATION OF WORKS.....	11
2.2	HOURS OF OPERATION.....	11
2.3	PROPOSED SITE ACCESS	12
2.4	CONSTRUCTION VEHICLE ACCESS ROUTES.....	14
2.5	WORK ZONE	16
2.6	FENCING REQUIREMENTS.....	17
2.7	MATERIALS HANDLING.....	17
2.8	SITE MANAGEMENT	17
2.9	CUMULATIVE CONSTRUCTION MANAGEMENT.....	18
3	ASSESSMENT OF TRAFFIC & TRANSPORT IMPACTS	19
3.1	CONSTRUCTION VEHICLE TRAFFIC GENERATION	19
3.2	VEHICLE MANAGEMENT	21
3.3	CONTRACTOR PARKING.....	22
3.4	PEDESTRIAN AND CYCLIST ACCESS	22
3.5	TRAFFIC CONTROL	23
3.6	AUTHORISED TRAFFIC CONTROLLER.....	24
4	MONITORING AND COMMUNICATION STRATEGIES.....	25
4.1	DEVELOPMENT OF MONITORING PROGRAM.....	25
4.2	COMMUNICATIONS STRATEGY	26
5	SUMMARY.....	27

Appendices

Appendix A: Driver Code of Conduct

Appendix B: Swept Path Analysis

1 Introduction

1.1 Overview

Ason Group has been engaged by Meriden School to prepare a Preliminary Construction Pedestrian and Traffic Management Plan (CPTMP) for the proposed alterations and renovations at the Meriden School, Strathfield (the School). Works proposed across the three School campuses include:

- **At the Senior School Campus** (the Senior Campus), 3-13 Margaret Street and 10 – 12 Redmyre Road, a new Centre of Music and Drama (CMD).
- **At the Junior School Campus** (the Junior Campus), 36 – 38 Redmyre Road, a new landscaped playground.
- **At the Lingwood Prep School Campus** (the Lingwood Campus), 16B - 16 Margaret Street, Stage 2 works include provision of a new Administration and Student Centre (A & S Centre). It is noted that construction is currently being undertaken for the Stage development on the Lingwood Campus.

This Preliminary CPTMP has been produced in response to the Secretary's Environmental Assessment Requirements (SEARS) received in relation to the State Significant Development Application (SSDA) for the above Proposal. With regard to the CPTMP, the SEARs state:

The preparation of a preliminary Construction Traffic and Pedestrian Management Plan to demonstrate the proposed management of the impact in relation to construction traffic addressing the following:

- *assessment of cumulative impacts associated with other construction activities (if any)*
- *an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity*
- *details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process*
- *details of anticipated peak hour and daily construction vehicle movements to and from the site*
- *details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle*
- *details of temporary cycling and pedestrian access during construction.*

The purpose of this report is to detail a traffic plan for construction that would minimise traffic impacts on the surrounding road network, ensure the safety and efficiency of all workers, pedestrians and road

users, and provide information regarding the construction vehicle access routes and any changed road conditions (if applicable).

It is expected that this plan would be updated should any necessary changes to the currently proposed arrangements arise in the future and would be further detailed as part of CC works for submission to Council and any other government authorities in response to the relevant conditions of consent. Any changes to this plan shall be done in consultation with the Department of Planning & Environment (DPE), Strathfield Council (Council) and the Sydney Coordination Office (SCO). Any special events (if required) would be subject to a separate request for a specific permit not covered by this report.

Please note, Ason Group is responsible for the preparation of this Plan only and not for its implementation, which is the responsibility of the project manager / builder.

1.2 CPTMP Compliance with SEARs

A summary of the relevant requirements of the SEARs and this CPTMP's compliance with each is provided below for clarity.

Table 1: SEARs Compliance Table

Reference	Requirement	Response
-	The preparation of a preliminary Construction Traffic and Pedestrian Management Plan to demonstrate the proposed management of the impact in relation to construction traffic addressing the following:	N/A
i)	Assessment of cumulative impacts associated with other construction activities (if any)	Cumulative traffic and safety impacts of construction activities at key intersections have been outlined within Section 3.1.3 and Section 3.1.4.
ii)	An assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity	Section 3.1.4. outlines the cumulative traffic and pedestrian impacts at key intersections surrounding the Site.
iii)	Details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process	The anticipated construction program can be found in Section 2.1.
iv)	Details of anticipated peak hour and daily construction vehicle movements to and from the site	Section 3.1.1 outlines estimated heavy vehicle movements while Section 3.1.2 outlines the estimated light construction traffic vehicle generation.

Reference	Requirement	Response
v)	Details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle	Access and on-site car parking arrangements for site have been detailed within Section 2.3, 2.4 and 3.3. No on-site car parking will be provided. It is noted that Traffic Control Plans (TCPs) for the Construction would be produced, following consultation with Council and the SCO.
vi)	Details of temporary cycling and pedestrian access during construction.	Refer to Section 3.4 for Cycling and Pedestrian access during construction.

1.3 Site Location

The School is located within the Strathfield Council LGA, and lies approximately 10 kilometres south-east of Parramatta and 11 kilometres west of the Sydney CBD.

The School has three campus sites in close proximity to each other. The Senior Campus is bordered by Redmyre Road to the north, Margaret Street to the south, and residential dwellings to the east and west. The Junior Campus is bordered by Vernon Street to the west, Redmyre Road to the north, Margaret Street and a health care centre to the east, and residential dwellings to the south. The Lingwood Campus is bounded by Margaret Street to the north, a health care centre to the west, and residential dwellings to the east and south.

The Site is an approximate 7-minute walk (700m) from Strathfield Train station. The Location and Road Hierarchy Plan presented as **Figure 1** provides an appreciation of the Site and its location.

1.4 Road Hierarchy

The road hierarchy in the vicinity of the Site is shown in **Figure 1**, with the following roads considered noteworthy:

- **Raw Square** – an RMS State Road (MR668) that generally runs in a north-south direction located to the north of the Site which connects to Redmyre Road to the south and Leicester Avenue and Everton Road to north. This road provides a key linkage between Strathfield and the A44 and M4 motorways via the rail underpass.
- **Redmyre Road** – an RMS State Road (MR668) located north-west of the Site that provides a connection between The Boulevarde and Chalmers Road in an east-west direction. It generally carries three lanes of traffic in both direction along the northern frontage of the school before tapering back into 1 lane in each direction along the western street frontages. A bus lane occupies the right lane of the westbound direction along the northern street frontage. On-street parking is

available along the western section of Redmyre Road. The speed limit is 50km/hr however, reduces to 40km/hr during School Peak hours.

- **The Boulevarde** – an RMS State Road (MR668) that generally runs in a north-south direction located to the east of the Site which connects to Margaret Street and Redmyre Road to Strathfield Town Centre and provides access to Strathfield Train Station. The road generally provides two lanes of traffic in both direction with on-street parking available on the southbound side of the road. The Boulevarde carries approximately 20,700 vehicles per day both ways. A key pedestrian bridge is located above The Boulevard between Russell Street and Carrington Avenue.

- **Margaret Street** – a local road that generally runs in an east-west direction between the school campuses and provides a link between Redmyre Road to the west and The Boulevarde / Morwick Street to the east. Margaret Street provides vital links for traffic and pedestrian links to all three campuses. A mid-block pedestrian crossing links the southern Prep School Campus and Junior Campus to the northern Senior Campus. There are currently timed parking restrictions on the southern kerb line of Margaret Street, while timed Bus Zone and No Parking restrictions on the northern side of Margaret Street. There is one lane in each direction and has a speed limit of 50km/hr during off-school hours, reducing to 40km/hr during school peak hours.

- **Morwick Street** – an RMS regional road (SR2027) that runs in an east-west direction to the east of the Site. It connects The Boulevarde and Margaret Street via a signalised intersection and terminates to the east at the Wentworth Road and Railway Parade intersection. The road generally provides two lanes of traffic in both direction with restricted parking available on both sides of the street.

- **Vernon Street** – a local road that generally runs in a north-south direction located along the Junior Campus' western street frontage. A single lane of traffic is provided for each direction and on-street parking is available. The speed limit is usually 50km/hr but reduces to 40km/hr during School Peak hours.

- **Carrington Avenue** – a local road that generally runs in an east-west direction located to the south of the Site which connects to Vernon Street and the Boulevarde. The east of the avenue provides pedestrian links to The Boulevarde pedestrian bridge.

The Sites are conveniently located with primary access to the arterial and local road network serving the region (The Boulevarde, Redmyre Road and Raw Square). It is therefore able to effectively distribute traffic onto the wider road network, minimising traffic impacts on local roads.



Figure 1: Site and Road Hierarchy

1.5 Non-Car Access

The Site's proximity to public transport is shown in **Figure 3**, which highlights the locations and distances to bus and train services surrounding the Site.

1.5.1 Existing Train Services

The *Integrated Public Transport Service Planning Guidelines, Sydney Metropolitan Area* (Transport for NSW (TfNSW), December 2013), states that train services influence the travel mode choices of areas within 800 metres walk (approximately 10 minutes) of a train station.

It is therefore noteworthy that the Site is located within 800 metres (approximately 500 metres) from the Strathfield Train Station. Strathfield Station is a major central train station hub that provides the following frequent services:

Sydney Trains Services:

- T1 North Shore, Northern & Western Line
- T2 Inner West & Leppington Line
- T3 Bankstown Line
- T7 Olympic Park Line

Intercity Trains Services:

- BMT – Blue Mountain Line
- CCN – Central Coast & Newcastle Line
- North Coast NSW
- North West NSW
- Western NSW

Accordingly, a proportion of workers travelling to and from the Site would be expected to use the train services at Strathfield Train station.

1.5.2 Existing Bus Services

The Site is accessible by a number of bus services and includes a bus stop located immediately adjacent to the subject site. It is noteworthy that there are several bus stops within 400 metres walking distance from the Site on Redmyre Road, The Boulevarde, Morwick Street and Albert Road. A major bus interchange is located at Strathfield Station providing an accessible location to transfer to different buses services.

There are twelve bus routes within walking distance, which are listed below:

Table 2: Public Bus Services

Bus Number	Route
407	Burwood to Strathfield
408	Burwood to Rookwood Cemetery
415	Campsie to Chiswick
458	Burwood to Ryde
480	Strathfield to Domain via Homebush Road
483	Strathfield to Domain via South Strathfield
525	Parramatta to Burwood via Olympic Park
526	Burwood to Rhodes Shopping Centre
913	Strathfield to Bankstown via Greenacre
914	Strathfield to Bankstown via Chullora
950	Strathfield to Hurstville
M90	Metrobus Burwood to Liverpool

The Site has good access to bus services, noting that bus routes 480, 415, 913, 914 and 450 are serviced by bus stops on Redmyre Road and The Boulevarde which are in close proximity to the School.

1.5.3 Pedestrian Connectivity

Pedestrian access is provided by footpaths along Redmyre Road, Vernon Street, Margaret Street, Raw Square, The Boulevarde and the majority of roads within the Strathfield Town Centre.

These footpaths are generous in width, especially at Margaret Street with footpath widths of up to 2.5m provided on both sides of the road. Footpaths near the Strathfield Town Centre are wide and well-integrated into the street amenities to handle large pedestrian volumes.

Figure 2 and **Table 3** outlines the location and provides a brief description of key pedestrian crossings around the vicinity of the Site.



Figure 2: Key Pedestrian Road Crossings

Table 3: Pedestrian Crossings

Number Reference	Location	Pedestrian Crossing Description
1	Redmyre Road / Raw Square	Signalised crossing on western and northern leg with pedestrian refuge island
2	Redmyre Road / The Boulevard	Signalised crossing on western and northern leg with pedestrian refuge islands
3	The Boulevard / Margaret Street / Morwick Street	Signalised crossing on southern and western leg / zebra crossing on western leg with pedestrian island
4	The Boulevard / Russell Street / Carrington Avenue	Pedestrian Bridge crossing The Boulevard / zebra crossing through Russell Street / Unsignalised crossing through Carrington Avenue
5	Vernon Street / Redmyre Road	Unsignalised crossing through Vernon Street
6	Margaret Road / Redmyre Road	Unsignalised crossing through Margaret Street with pedestrian refuge island
7	Margaret Road	Mid-block pedestrian crossing
8	Carrington Avenue	Mid-block pedestrian crossing

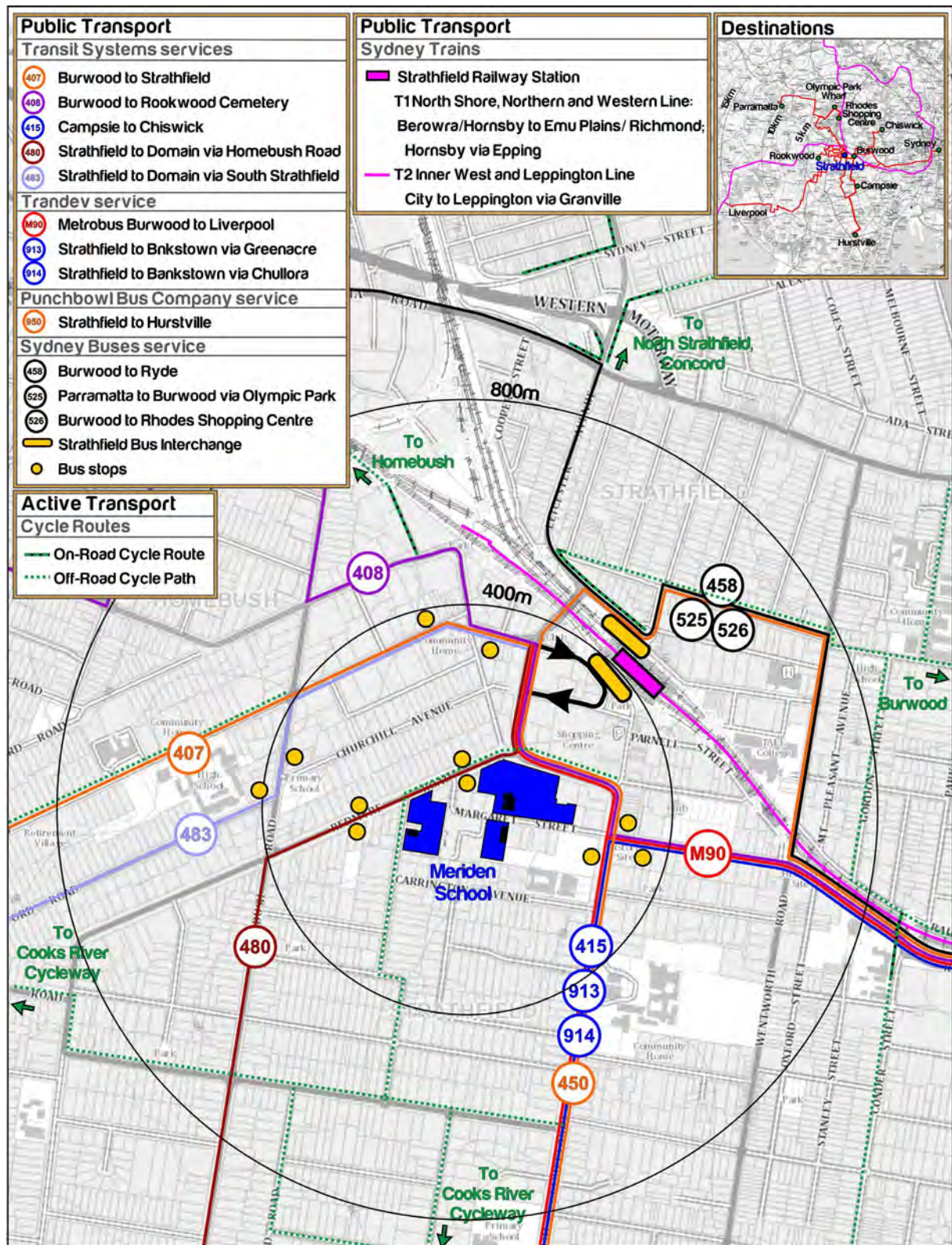


Figure 3: Existing Public Transport Map

1.5.4 Cycle Routes

There are currently limited cycling facilities and routes that directly connects with the Meriden School Site. The existing Strathfield Council Cycling Map details local bike routes to the south and north-west of the Site. The Bay-to-Bay route, located to the west of the School, includes off road sections along Cooks River which runs generally in a north-south direction. The existing cycling route is detailed in Figure 4.

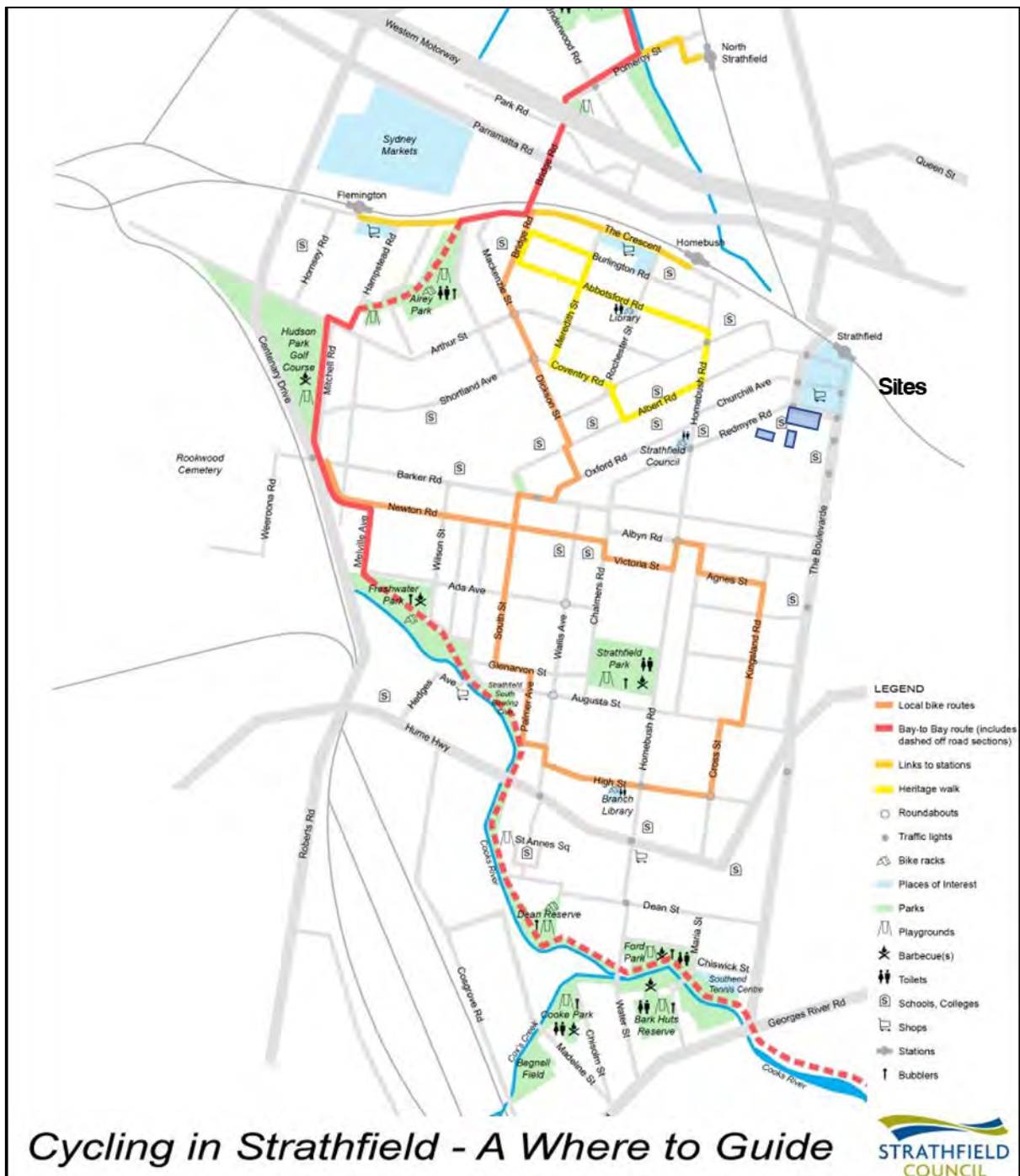


Figure 4: Existing Strathfield Cycling Routes

2 Overview of Works

2.1 Staging and Duration of Works

Recognising the purpose of this CPTMP, it is estimated that the total duration for the completion of all three developments will take approximately 2 years from the commencement date. The start date for construction will be finalised once approval has been given. It is noted that it is currently envisaged that the main works will be delivered in two stages:

- Stage 1: Lingwood Campus A & S Centre and Junior Campus Playground; and
- Stage 2: Senior School CMD.

It is expected that construction would commence on Stage 1 in January 2020 and be complete by December 2020. Construction on Stage 2 would commence in January 2021 and is expected to be complete by April 2022.

The following table summarises key aspects of the construction stages for each development.

Table 4: Construction Program Overview in Weeks

Development	Demolition	Excavation	General Construction	Concrete Pours	External Finishes	Kerb / Footpath Works
Music & Drama Centre	4	10	30	15	8	TBA
Lingwood A & S Centre	4	2	28	12	8	TBA
4 Vernon Street Playground	3	1	10	10	6	TBA

2.2 Hours of Operation

The type of work being undertaken will vary depending on the phase of construction and associated activities. This includes both construction and design personnel. Notwithstanding, all works will be undertaken in accordance with the CC conditions of consent. The following indicative timeframes are as follows:

- Monday to Friday (other than Public Holidays): 7:00am – 5:00pm.
- Saturday: 8:00am – 1:00pm.
- Sunday & Public Holidays: No works to be undertaken.

Any work to be undertaken outside of the standard construction hours shall be required to obtain an Out of Hours (OOH) approval; any such works would necessarily be undertaken in accordance with the appropriate OOH protocols and approval processes.

2.3 Proposed Site Access

During construction, it is proposed that there will be four (4) site accesses. **Table 5** outlines the Site access and egress for each site.

Table 5: Construction Site Access

Development	Site Access	Site Egress
Music & Drama Centre	Existing crossover (with minor modifications) on Margaret Street (north)	Separate crossover on Margaret Street (north)
Lingwood Stage 2	Temporary crossover on Margaret Street (south)	Existing crossover on Margaret Street (south)
4 Vernon Street	Existing crossover (with minor modifications) on at 4 Vernon Street, and Work Zone	Existing crossover on at 4 Vernon Street, and Work Zone

Note: Work Zone to be outlined within Section 2.5

Figure 6 details the proposed vehicle access plan for the Site. The different site access arrangements will be discussed in the following sections below.

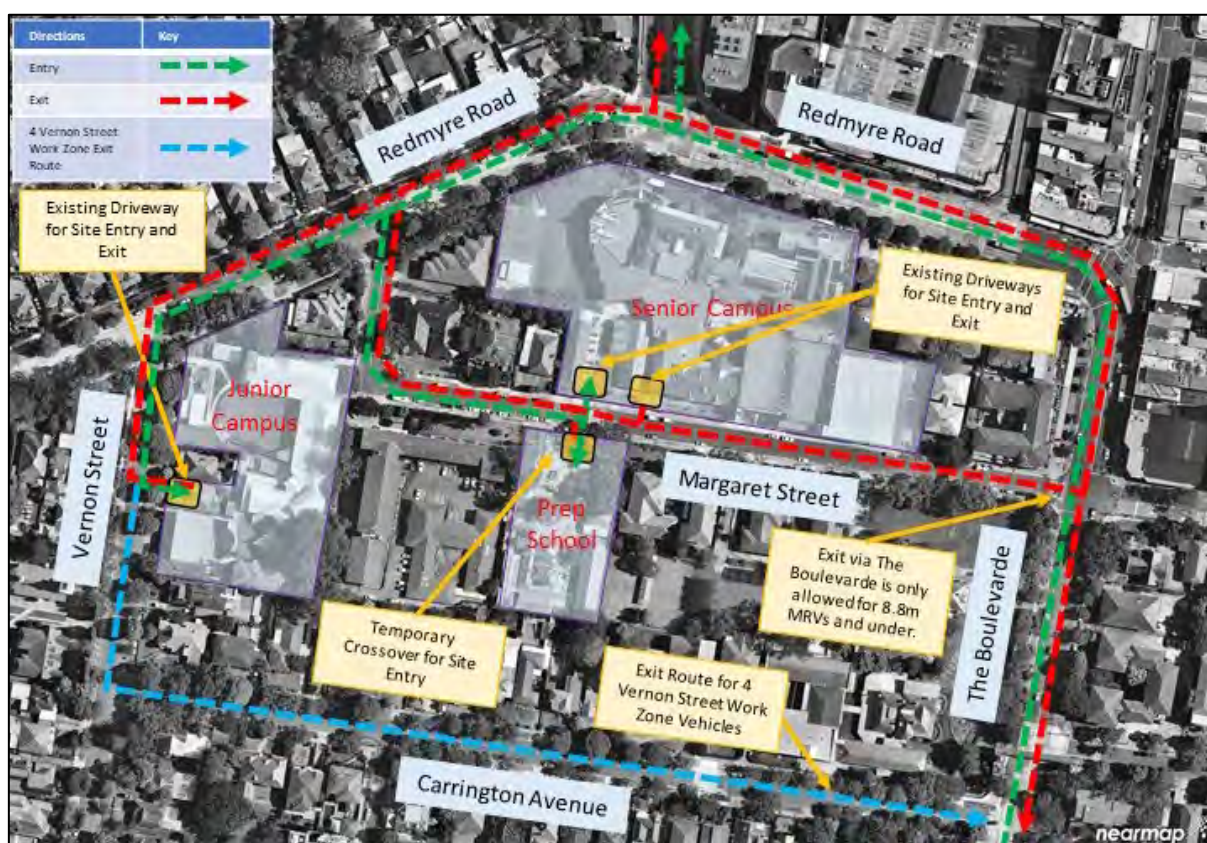


Figure 5: General Construction Site Access Plan

During the early stages of demolition, the largest vehicle capable of accessing the CMD Site would be an 8.8m bogie. Once initial demolition has progressed, there would be sufficient room for larger trucks to manoeuvre within the Site. The largest vehicle to access the CMD Site during construction would be a 19.5m Truck & Dog during the later demolition and excavation stages. During general construction and concrete pours, it is currently understood that it would be required for trucks (with the largest being a 12.5m Heavy Rigid Vehicle (HRV)) to reverse from Margaret Street into the CMD Site. The strategy for this would be further developed in consultation with the relevant agencies. However, it is noted that this would be controlled through Authorised Traffic Controllers.

The largest vehicle to access the A & S Centre and Junior Campus sites would be a 12.5m HRV truck. Trucks accessing the A & S Centre Site can enter the site, turn around within the site boundaries and then exit in a forward gear. A reverse manoeuvre from Vernon Street would be required for trucks accessing the existing Junior Campus driveway.

Appendix B demonstrates the required turning movements to access the Site.

Given the constraints of each of the respective construction sites, no Contractor parking will be provided which is a standard arrangement for these types of construction sites. Contractors would be actively encouraged to travel by public transport to the School and actively discouraged from using on-street

parking. The Builder would give consideration to including, as part of the Employee Agreement signed by all contractors, the requirement for employees to utilise public transport facilities in lieu of driving to the School to minimise parking demand and the impact of construction activities on on-street parking.

Pedestrians attempting to cross the Site's heavy vehicle accesses are to be managed through signage, pedestrian barriers and Traffic Controllers.

Emergency vehicle access to and from the Site will be available at all times while the Site is occupied by construction workers. This process would be implemented through emergency protocols on the site which will be developed by the Contractor.

2.4 Construction Vehicle Access Routes

All construction vehicles would enter and exit the Site via the routes shown in **Figure 6**. The routes shown are to be utilised by all construction vehicles travelling to and from the site and represents the shortest route available - hence minimising the impacts of the construction process. A copy of the approved routes will be distributed by the Contractor to all drivers before their arrival to Site.

2.4.1 Arrival to Site:

All vehicles would access the construction site via Parramatta Road / M4 Motorway or Liverpool Road, as outlined within **Figure 6**.

CMD

- From the North: From Parramatta Road / M4 Motorway, to Leicester Avenue, right onto Raw Square, right onto Redmyre Road and another left into Margaret Street before turning left into the Site.
- From the South: For large trucks – from Liverpool Road, onto The Boulevarde, straight onto Redmyre Road, left into Margaret Street before turning left into the Site. For trucks smaller than an 8.8m bogie, can also turn left turn into Margaret Street, from The Boulevard and then right into the site.

A & S Centre

- From the North: From Parramatta Road / M4 Motorway, to Leicester Avenue, right onto Raw Square, right onto Redmyre Road and another left into Margaret Street before turning right into the Site.
- From the South: From Liverpool Road, onto The Boulevarde, straight onto Redmyre Road, left into Margaret Street before turning right into the Site.

4 Vernon Street

- From the North: From Parramatta Road / M4 Motorway, to Leicester Avenue, right onto Raw Square, right onto Redmyre Road and another left into Vernon Street before turning left into the Site.
- From the South: From Liverpool Road, onto The Boulevarde, straight onto Redmyre Road, left into Vernon Street before turning left into the Site.

2.4.2 Departure Routes

All vehicles would depart the construction site via the following routes, as outlined within **Figure 6**.

CMD

- To the North: From right out on the Site onto Margaret Street, right onto Redmyre Road, left onto Raw Square, left onto Leicester Avenue before heading onto Parramatta Road / M4 Motorway for trucks larger than an 8.8m bogie. Smaller trucks (i.e. 8.8m bogies) can exit the site by turning left onto Margaret Street and left at the intersection with The Boulevard and continue onto Parramatta Road / M4 Motorway by way of Raw Square.
- To the South: From right out on the Site onto Margaret Street, right onto Redmyre Road, straight onto The Boulevarde before joining Liverpool Road.

A & S Centre

- To the North: From right out on the Site onto Margaret Street, left onto The Boulevarde, straight onto Redmyre Road, right onto Raw Square, left onto Leicester Avenue before heading onto Parramatta Road / M4 Motorway.
- To the South: From left out on the Site onto Margaret Street, right onto Redmyre Road, straight onto The Boulevarde before joining Liverpool Road.

4 Vernon Street

Non-Work Zone Vehicles

- To the North: From right out on the site onto Vernon Street, right onto Redmyre Road, left onto Raw Square, left onto Leicester Avenue before heading onto Parramatta Road / M4 Motorway.
- To the South: From right out on the site onto Vernon Street, right onto Redmyre Road, straight onto The Boulevarde before joining Liverpool Road again.

Work Zone Vehicles (To be outlined within Section 2.5)

- To the North: From Work Zone to southbound on Vernon Street, left onto Carrington Avenue, left onto the Boulevard, straight onto Redmyre Road, left onto Raw Square, left onto Leicester Avenue before heading onto Parramatta Road / M4 Motorway.
- To the South: From Work Zone to southbound on Vernon Street, left onto Carrington Avenue, right onto the Boulevard before joining Liverpool Road.

Any oversized or over-mass vehicles travelling to and / or from the Site will be required to obtain a permit from the Roads and Maritime Services (RMS) and / or the National Heavy Vehicle Register (NHVR). Notwithstanding, this CPTMP relates to general construction which does not seek the use of oversize vehicles. A separate application would be submitted to Council if required.

Swept paths (attached in Appendix B) demonstrate all turns into and out of site that can be undertaken.

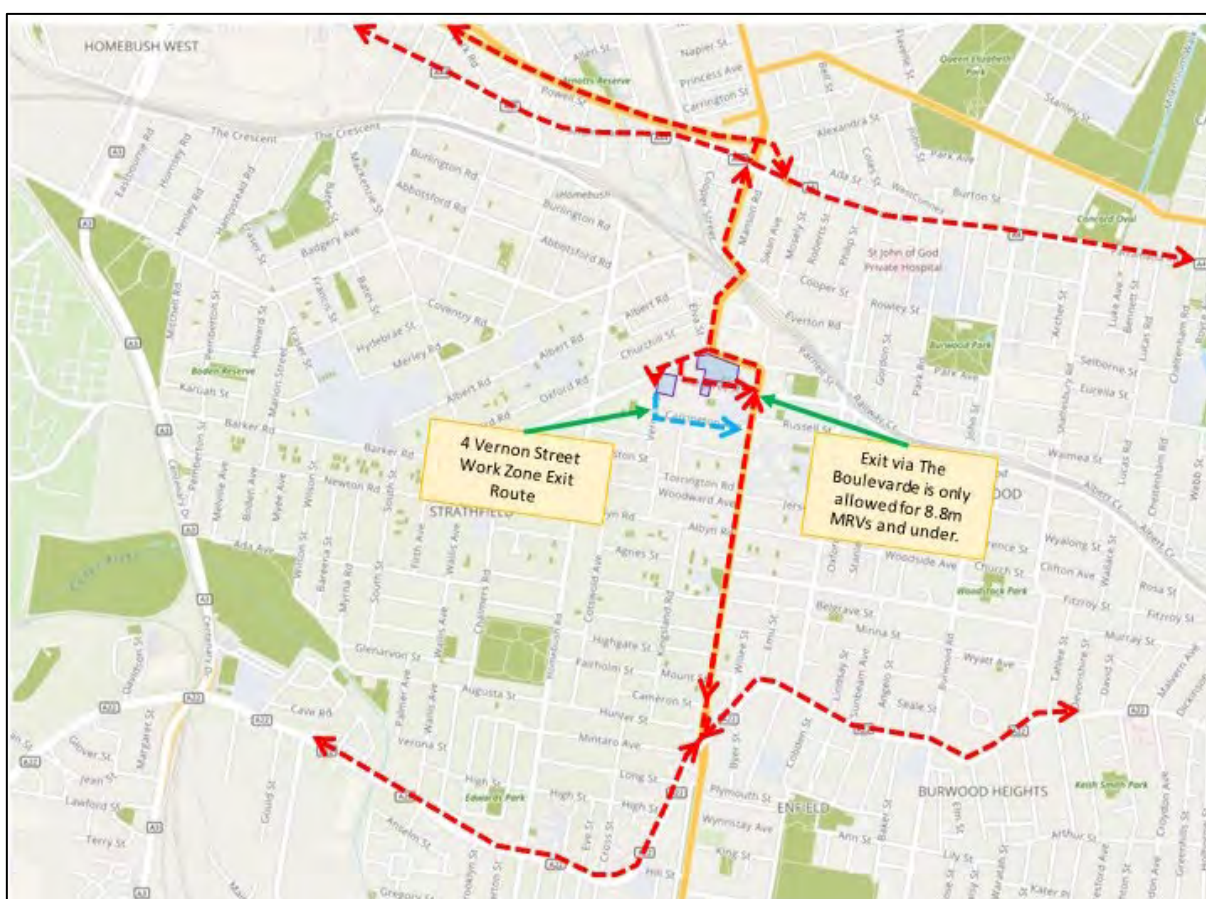


Figure 6: Construction Vehicle Route

2.5 Work Zone

A Work Zone may be required along at 4 Vernon Street along the street frontage of the Site. This Work Zone will only be utilised during the Concrete Pours period which is estimated to have a duration of 10 weeks. The largest vehicle to utilise the Work Zone would be a 12.5m Heavy Rigid Vehicle. A Traffic

Control Plan (TCP) for the Work Zone at 4 Vernon Street is to be developed to detail the proposed pedestrian and traffic management measures to mitigate pedestrian and traffic impacts.

An application for the Work Zone would be submitted to Council prior to commencement and the CPTMP would be updated (in consultation with Council) to address any impacts to the Kiss & Ride facilities. It is noted that the Work Zone would be a maximum of 12m long, which equates to 2 car spaces. The temporary suspension of these spaces would not materially impact the operation of the Kiss & Ride zone. It is expected that the Kiss & Ride zones on Margaret Street would be unaffected by construction. Although this would be confirmed once the access strategy has been refined for the implemented CPTMP.

2.6 Fencing Requirements

Security fencing will be erected along the entire boundary of each site which will be maintained for the duration of the construction program. The fencing is to ensure unauthorised persons are kept out of each Site. The Site's access gates would be provided along Margaret Street and Vernon Street and will be closed at all times outside of the permitted construction hours.

Hoarding layout and timings may change throughout the development, however prior approval shall be sought from Council.

2.7 Materials Handling

It is proposed that all materials loading and unloading will occur within the construction site boundary. Equipment, materials and waste will be kept within the construction site boundary. Should materials handling be required from the public roadway then prior approval shall be sought and obtained from Strathfield Council.

2.8 Site Management

Site management will be required to notify adjacent properties of any temporary traffic restrictions and measures being implemented at least fourteen (14) days in advance.

Some works may be required within the roadway during the external finishes stage. These works would most likely be undertaken at night or during off peak periods to limit any interaction with peak traffic conditions along Margaret Road and Vernon Street.

Any Traffic Control measures necessary for these works will be submitted to Council for approval and 14 days' notice would be provided to adjoining property owners as required by Council. Pedestrian amenities and footpaths will be kept to serviceable conditions during the construction periods.

Remediation of any damaged footpaths and pedestrian facilities will be undertaken at the discretion of Council.

2.9 Cumulative Construction Management

As the commencement date remains unclear while the required approval is sought for the Proposal, it is currently unknown what other construction sites would be in operation in the surrounding area.

However, it is noted that construction is currently planned to commence in January 2020. The 3 current construction sites which are in operation within the vicinity of the School include 26 Parnell Street, 1 Lyons Street and 70 Railway Parade. It is noted all these sites are nearing completion and therefore it is expected that these would be completed by January 2020. The CPTMP would therefore reconsider any construction sites in the vicinity of the School at an appropriate time and would be updated as necessary (following consultation with Council and the SCO).

Coordination between each of the respective Project Contractors will be necessary for any major construction activities.

3 Assessment of Traffic & Transport Impacts

3.1 Construction Vehicle Traffic Generation

3.1.1 Truck Movements

Information provided by Gledhill indicates the following breakdown of truck movements:

Table 6: Truck Movement Overview – Stage 1

Stage	Demolition	Excavation	General Construction	Concrete Pours	External Finishes	Footpath Works
Stage 1						
<u>A & S Centre</u>						
Truck Movements Per Day	18	18	12	60	10	4
Peak Hour Truck Movements	8	8	4	8	2	2
Largest Vehicle Size	12.5m HRV					
<u>Junior School Campus</u>						
Truck Movements Per Day	12	12	8	60	8	4
Peak Hour Truck Movements	4	4	4	8	4	2
Largest Vehicle Size	12.5m HRV					
<u>Potential Stage 1 Combined Truck Movements</u>						
Truck Movements Per Day	30	30	20	120	18	8
Peak Hour Truck Movements	12	12	8	16	6	4

Table 7: Truck Movement Overview – Stage 2

Stage	Demolition	Excavation	General Construction	Concrete Pours	External Finishes	Footpath Works
Stage 2						
<u>CMD</u>						
Truck Movements Per Day	18	18	12	60	10	4
Peak Hour Truck Movements	8	8	4	8	2	2
Largest Vehicle Size	19.5m Truck & Dog					

The peak period for construction would be during Stage 1, where it is estimated that there would be a combined peak of 120 truck movements a day and a peak of 16 truck movements per hour during the peak periods (8 in and 8 out).

It is understood that peak volumes would be associated with concrete pours. During these peak periods, trucks are expected to arrive and depart the Site between the hours of 7:00am – 5:00pm. Gledhill indicates that at each construction site, a peak of 8 truck movements per hour will occur during the concrete pour's activities (4 in & 4 out for each of the construction sites).

In order to ameliorate any concerns raised by the DPE, TfNSW, RMS and Council, it is proposed to restrict truck-heavy activities during school and traffic peak hours. Truck movements will be maximised to occur outside of peak-hours and on Saturdays. It should however be noted that 16 truck movements during the AM and PM peak periods are required (as noted above) for more intense construction activities such as concrete pours.

It is expected that Meriden School may restrict truck movements between school peak hours to minimise traffic and pedestrian impacts.

3.1.2 Light Vehicle Movements

In relation to light vehicle movements, it is anticipated that a maximum of 110 workers could be on-site at any one time during the peak construction periods. A maximum of 70 workers would typically on-site at any other times. No on-site parking will be provided, and on-street parking would not be allowed. All staff are encouraged to travel via the readily available public transport services in the area. It is noteworthy that the Strathfield Train Station and ancillary bus stops are less than 800m from the Site, therefore construction vehicles workers have several methods to access the site other than driving.

Any light vehicle traffic generation would be generally associated with staff movements to and from the Site. Due to the lack of on-site parking, only a small number of private vehicles would be used by higher-level staff such as project managers. The workforce arrival and departure periods (6.30-7.00AM and 5.00-5.30PM) represent the peak construction traffic generation periods which sits outside the existing network peaks. It is anticipated that the contractor traffic generation would be of a low order due to the lack of parking options and staff would also be encouraged to car share or use public transport.

3.1.3 Cumulative Traffic Impacts

There are three (3) construction projects within the close proximity to the Sites which will most likely coincide with construction works. These projects include 26 Parnell Street, 1 Lyons Street and 70 Railway Parade.

The location of the construction sites at 26 Parnell Street and 1 Lyons Street indicates that construction vehicles would enter southbound on Raw Square and head eastbound along Redmyre Road before turning north into The Boulevarde to exit right into Parnell Street to reach their respective sites. Vehicles leaving those sites would need to use Wentworth Road to head north back onto the Great Western Highway.

It is noted that construction at 26 Parnell Street and 1 Lyons Street is in the latter stages and would likely be complete by commencement of construction of this proposal (in January 2020).

The construction site at 70 Railway Parade could potentially be using Raw Square, Redmyre Road and Morwick Street for their haulage route to and from the Site. However, construction on this site is also nearing completion and therefore not expected to coincide with the construction of this development.

The CPTMP would review any construction sites in the vicinity of the School at an appropriate time and would be updated as necessary (following consultation with Council and the SCO).

As mentioned within Section 2.1, construction is due to commence in January 2020. However, given that this subject to securing the appropriate approvals, there is no definitive commencement date for construction at this stage. Therefore, the CPTMP would need to be reviewed as part Construction Certificate Works to review other construction activities in the area. This would be done in consultation with Council and the SCO to identify the relevant sites.

3.2 Vehicle Management

3.2.1 Principles

In accordance with RMS requirements, all vehicles transporting loose materials would have the entire load covered and/or secured to prevent any large items, excess dust or dirt particles depositing onto the

roadway during travel to and from the site. All drivers are to be familiar with the Driver Code of Conduct before attending the Site. A copy of the Code is included in **Appendix A**.

Further to covering/securing the load to prevent deposits onto the roadway, a Shaker / Cleaning Device is proposed to be installed at the point of vehicle egress to minimise the risk of dirt on the local roads. It is the responsibility of the driver to ensure that the Shaker Grid is driven over would be included as part of the Driver Code of conduct.

All subcontractors must be inducted by the Contractor to ensure that the procedures are met for all vehicles entering and exiting the construction site. The Head Contractor will monitor the roads leading to and from the site and take all necessary steps to rectify any road deposits caused by site vehicles.

Vehicle movements to, from and within the Site shall do so in a manner, which does not create unreasonable or unnecessary noise or vibration. No tracked vehicles will be permitted or required on any paved roads. Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances.

3.2.2 Queuing

It is expected that a schedule for deliveries of materials and goods will be established prior to that day, with Traffic Controllers maintaining radio contact with construction vehicles at all times. Thus, at no stage shall queueing occur on the public road network. No trucks are to be queued on local roads.

3.3 Contractor Parking

As previously mentioned, there will be no parking provided on-site. No on-street parking will be allowed for construction workers. Consideration would be given to including in the Employee Agreement, signed by all contractors, the requirement for all employees to utilise the excellent public transport facilities in lieu of driving to the Site to minimise parking demand and the impact of construction activities on on-street parking.

Contractors would be encouraged to utilise the available public transport services within the area. If Contractors have no alternative options other than to use private vehicles travelling to and from site, then there are several public car parks which can be utilised within the immediate vicinity of the Site.

3.4 Pedestrian and Cyclist Access

The majority of construction activities would occur off-street with exception of a temporary Work Zone for concrete pours that would be located at the street frontage of 4 Vernon Street. Although construction activities occur off-road, the pedestrian and cycle connections across Site access points would be managed by traffic controllers and boom gates during construction activities. It is proposed that traffic

controllers be at each vehicle access to control pedestrian boom gates at the vehicle accesses to control the pedestrian flow.

Pedestrians and cyclists using the footpath fronting the Site or Work Zone will be halted by an accredited Traffic Controller using a remote-controlled boom gate while construction vehicles are exiting the Site. An expandable barrier (pedestrian boom gate or equivalent) would be installed on both sides of the driveway, to be operated when construction vehicles are on approach / ready to depart from the Site. Once the construction vehicles are clear from the footpath, the Traffic Controller can allow the pedestrians and cyclists to continue along their journey.

The Contractor shall make clear to Traffic Controllers that pedestrians have right of way and, as far as reasonable (mostly associated with exit vehicle movements). An on-Site waiting bay and stopping location is proposed for all Heavy Vehicle exiting movements. This will allow co-ordination and management of pedestrian/cyclist right of Way and interaction with traffic controllers.

In addition, it will provide Traffic Controllers the ability to advise drivers the appropriate time to approach the Site's boundary.

The Traffic Controllers would use these extendable gates to create a physical barrier that would restrict pedestrians walking across the driveway, while maintaining radio communication with the construction vehicle driver at all times.

As noted, and discussed in Section 2.5, the only construction activities expected to occur on-street would involve a temporary Work Zone for concrete pours, located at the street frontage of 4 Vernon Street. An application for this Work Zone would be submitted to Council prior to it being required and the CPTMP would be updated (in consultation with Council) to address any impacts to the Kiss & Ride facilities.

Nevertheless, it is expected at this stage that the Work Zone would be a maximum of 12m long, which equates to 2 car spaces. The temporary suspension of these spaces would not materially impact the operation of the Kiss & Ride zone.

It is expected that the Kiss & Ride zones on Margaret Street would be unaffected by construction activities. Although this would be confirmed once the access strategy has been refined for the implemented CPTMP.

3.5 Traffic Control

The RMS guide "Traffic Control at Worksites" (TCAW) manual contains standard traffic control plans (TCPs) for a range of work activities. The manual's objective is to maximise safety by ensuring traffic

control at worksites complies with best practice. The RMS TCAW outlines the requirements for a Vehicle Movement Plan (VMP).

A VMP is a diagram showing the preferred travel paths for vehicles associated with a work site entering, leaving or crossing the through traffic stream. A VMP should also show travel paths for trucks at key points on routes remote from the work site such as places to turn around, accesses, ramps and side roads.

Regarding construction work on roads with an average daily total (ADT) in excess of 1,500 vehicles, approach speeds of between 60 km/hr and 80 km/hr, with truck movements > 20 veh/shift, and sight distance is less than 2d, (where d equals the posted speed limit and in this instance the sight distance is required to be up to 120 metres), the following is required for the Margaret Road and Vernon Street accesses by the RMS TCAW:

- TCP with Traffic controllers/Traffic Signals
- VMP
- Warning Signs required during shifts

Regardless of the above, it is proposed to develop and implement TCP's for each of the construction sites.

3.6 Authorised Traffic Controller

Authorised Traffic Controllers will be present on-site throughout the construction stage of the project. Responsibilities include:

- Supervision of all construction vehicle movements into and out of site at all times,
- Supervision of all loading and unloading of construction materials during the deliveries in the construction phase of the project, and
- Pedestrian management, to ensure that adverse conflicts between vehicle movements and pedestrians do not occur, while maintaining radio communication with construction vehicles at all times.

4 Monitoring and Communication Strategies

The CPTMP has been based on the existing site conditions and information provided by Meriden School. Consultation with Council will continue to be undertaken to ensure that the cumulative traffic impacts of construction within the area does not adversely impact the road network.

The CPTMP will be reviewed and monitored frequently to confirm that the construction traffic methodologies reflect the current traffic situation in the Site's locality.

4.1 Development of Monitoring Program

The development of a program to monitor the effectiveness of this CPTMP shall be established by the lead contractor. It is not anticipated that the monitoring of the processes will have any material cost implications. We note the following items to consider when developing the processes and tasks involved within monitoring the CPTMP.

This CPTMP shall be subject to ongoing review and will be updated accordingly. Regular reviews will be undertaken by the on-site coordinator. As a minimum, review of the CPTMP shall occur monthly, however a weekly review would be preferred.

All and any reviews undertaken should be documented, however key considerations regarding the review of the CPTMP shall be:

- Tracking deliveries against the estimated volumes.
- To identify any shortfalls and develop an updated action plan to address issues that may arise during construction (Parking and access issues)
- To ensure TCP's are updated (if necessary) by "Prepare a Work Zone Traffic Management Plan" card holders to ensure they remain consistent with the set-up on-site.
- Regular checks undertaken to ensure all loads are leaving site covered as outlined within this CPTMP.

4.2 Communications Strategy

The communications strategy will outline the most effective communication methods to ensure adequate information within the community and assist the project team to deliver the traffic changes with minimal disruption to the road network.

All surrounding occupants shall be notified of any work that is deemed disruptive to the surrounding network prior to commencement. Ongoing communication is also proposed so that all stakeholders are kept up to date of works and potential impacts.

Nearby property owners that may be affected by the construction works shall be included within the communications strategy.

5 Summary

This Preliminary CPTMP has been prepared to ensure appropriate pedestrian, cyclist and traffic management is undertaken during construction of the proposed alterations and renovations at the School. This CPTMP report has regard for the principles outlined in the RMS Traffic Control at Worksites Manual (2010) and AS1742.3 and is recommended to inform the Full CPTMP to be developed as part of a Condition of Consent with any DA Approval.

Any variation to these standards is considered acceptable having regard to the constraints inherent by the 3 sites and proposed development. The following measures should be undertaken to minimise the impacts across each construction phase:

- Traffic control would be required to manage and regulate construction vehicle traffic movements into and out of the site during construction.
- All vehicles transporting loose materials will have the load covered and/or secured to prevent any items depositing onto the roadway during travel to and from the Site.
- All vehicles to enter and exit the site in a forward direction with reverse movements to occur only within the property boundary as necessary, prior approval and subject to supervision.
- Construction and delivery vehicles would be limited to the use of surrounding arterial roads and the necessary local roads.

In summary, the Preliminary CPTMP report is proposed in accordance with the RMS TCAW. This Preliminary CPTMP would be further developed at CC stage in consultation with the Project Contractor, DPE, Council, and other authorities. However, it provides a detailed and clear indication of the future construction methodology and principles to be adopted.

Appendix A

Driver Code of Conduct

- Driver Code of Conduct -

Drivers Code of Conduct

Safe Driving Policy for Meriden School

Objectives of the Drivers Code of conduct

- To minimise the impact of earthworks and construction on the local and regional road network;
- Minimise conflict with other road users;
- Minimise road traffic noise; and
- Ensure truck drivers use specified routes

Code of Conduct

All vehicle operators accessing the site must:

- Take reasonable care for his or her own personal health and safety.
 - Not adversely, by way of actions or otherwise, impact on the health and safety of other persons.
 - Notify their employer if they are not fit for duty prior to commencing their shift.
 - Obey all applicable road rules and laws at all times.
 - In the event an emergency vehicle behind your vehicle, pull over and allow the emergency vehicle to pass immediately.
 - Obey the applicable driving hours in accordance with legislation and take all reasonable steps to manage their fatigue and not drive with high levels of drowsiness.
 - Obey all on-site signposted speed limits and comply with directions of traffic control supervisors in relation to movements in and around temporary or fixed work areas.
 - Ensure all loads are safely restrained, as necessary.
 - Drive over cattle grids – located at the Site's access – to vibrate off any loose material attached to construction vehicles.
 - Operate their vehicles in a safe and professional manner, with consideration for all other road users.
 - Hold a current Australian State or Territory issued driver's licence.
 - Notify their employer or operator immediately should the status or conditions of their driver's license change in any way.
-

- Comply with other applicable workplace policies, including a zero tolerance of driving while under the influence of alcohol and/or illicit drugs.
- Not use mobile phones when driving a vehicle or operating equipment. If the use of a mobile device is required, the driver shall pull over in a safe and legal location prior to the use of any mobile device.
- Advise management of any situations in which you know, or think may, present a threat to workplace health and safety.
- Drive according to prevailing conditions (such as during inclement weather) and reduce speed, if necessary.
- Have necessary identification documentation at hand and ready to present to security staff on entry and departure from the site, as necessary, to avoid unnecessary delays to other vehicles.

Crash or incident Procedure

- Stop your vehicle as close to it as possible to the scene, making sure you are not hindering traffic. Ensure your own safety first, then help any injured people and seek assistance immediately if required.
 - Ensure the following information is noted:
 - Details of the other vehicles and registration numbers
 - Names and addresses of the other vehicle drivers
 - Names and addresses of witnesses
 - Insurers details
 - Give the following information to the involved parties:
 - Name, address and company details
 - If the damaged vehicle is not occupied, provide a note with your contact details for the owner to contact the company.
 - Ensure that the police are contacted should the following circumstances occur:
 - If there is a disagreement over the cause of the crash.
 - If there are injuries.
 - If you damage property other than your own.
 - As soon as reasonably practical, report all details gathered to your manager.
-

Appendix B

Swept Path Analysis



Revision notes:

Rev:	Date:	Notes:

For information purposes only - not for construction

Drawn By:

VC

Client:

Meriden School

Project:

0686
Meriden School

Drawing Title:

Centre for Music and Drama
Initial Demolition Stages - 8.8m Bogie

Date:

13-May-19

Scale @ A3:

N.T.S

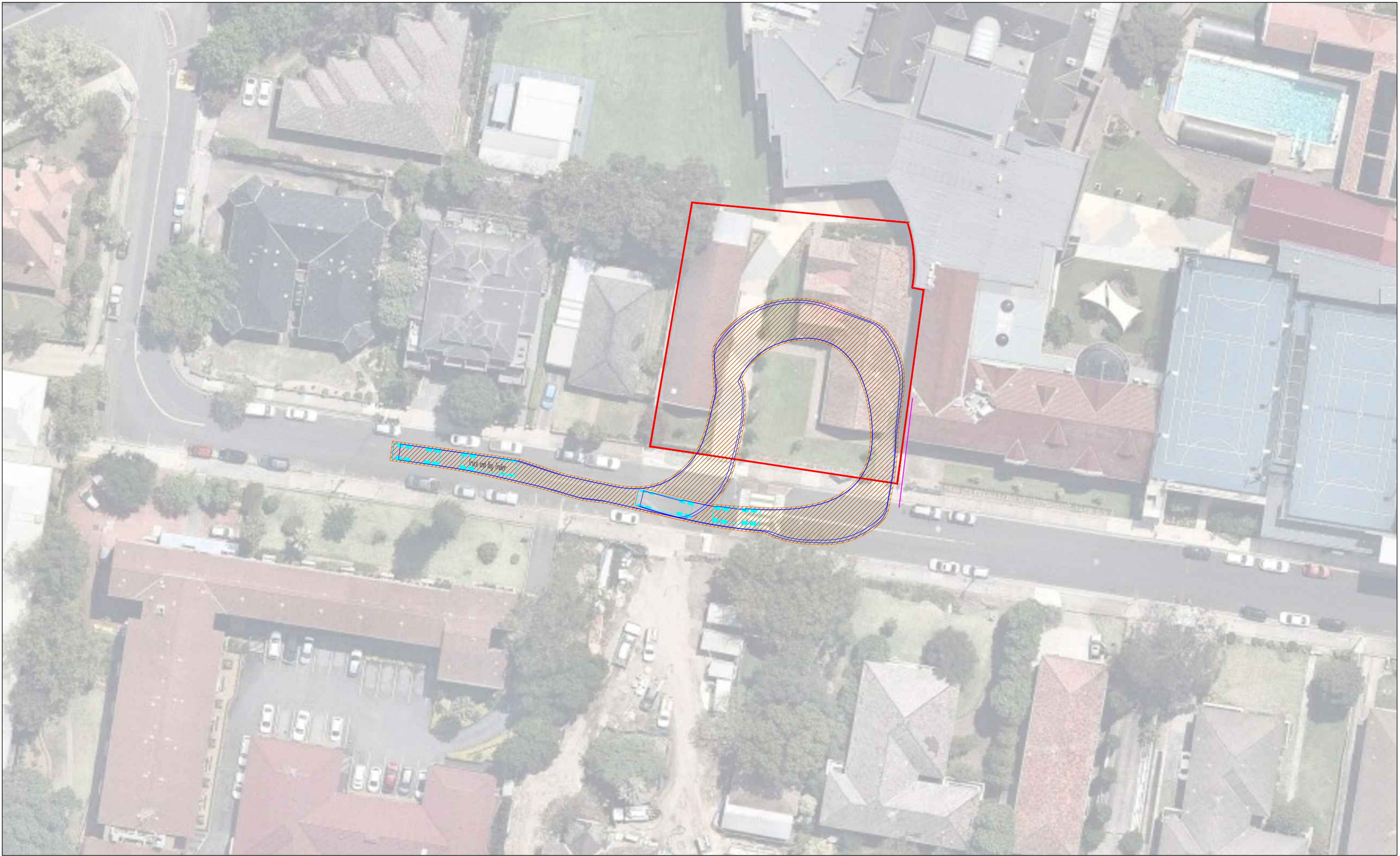
Drawing Number:

01

asongroup

Suite 5.02, Level 5, 1 Castlereagh Street
Sydney NSW 2000

info@asongroup.com.au



Revision notes:

Rev:	Date:	Notes:

For information purposes only - not for construction

Drawn By:

VC

Client:

Meriden School

Project:

0686
Meriden School

Drawing Title:

Centre for Music and Drama
Demolition and Excavation Stages - Truck & Dog

Date:

13-May-19

Scale @ A3:

N.T.S

Drawing Number:

02

asongroup

Suite 5.02, Level 5, 1 Castlereagh Street
Sydney NSW 2000

info@asongroup.com.au



Revision notes:		
Rev:	Date:	Notes:
For information purposes only - not for construction		

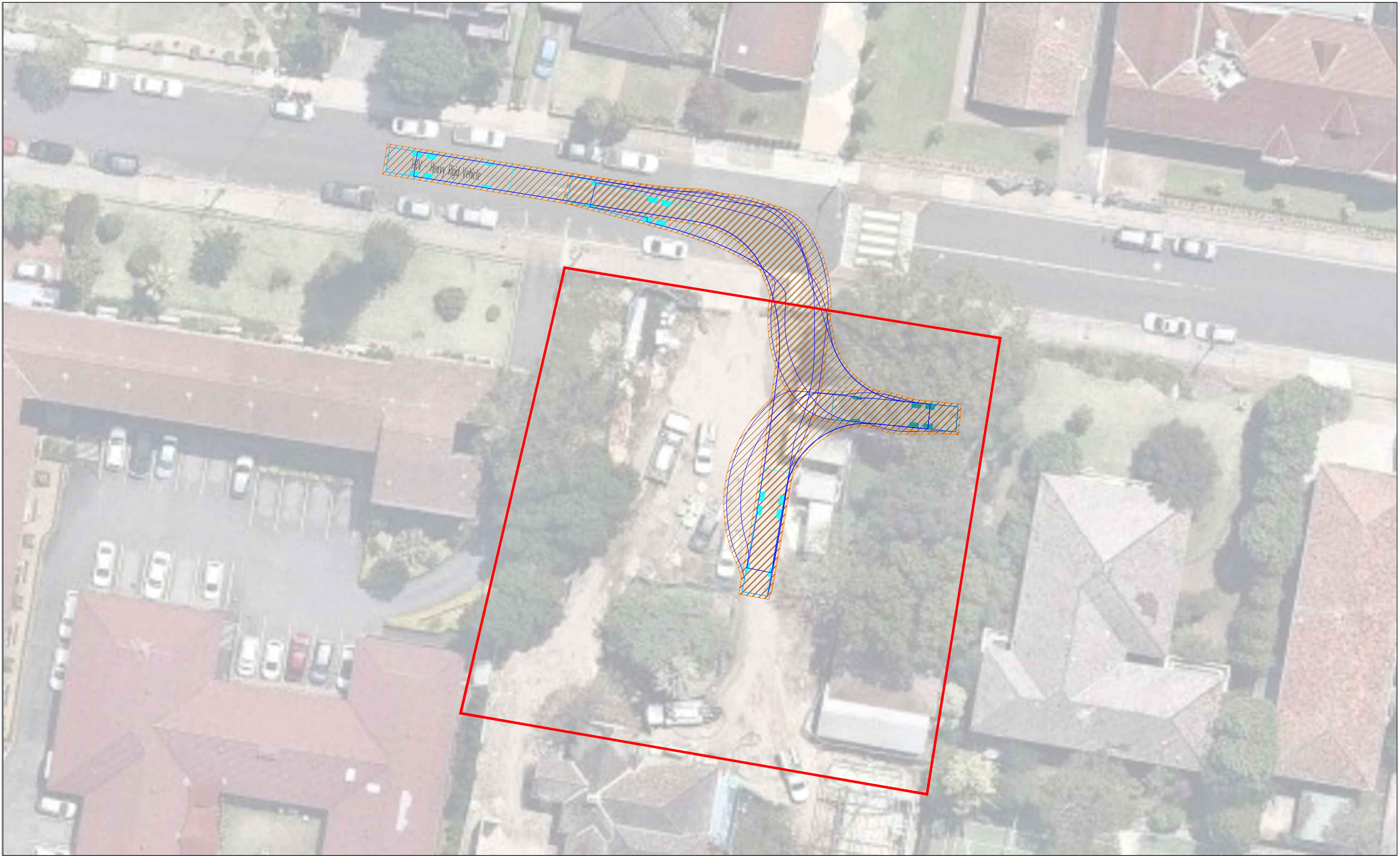
Drawn By:	VC
Client:	Meriden School

Project:	0686 Meriden School
Drawing Title:	Centre for Music and Drama Reverse Manoeuvre

Date:	13-May-19
Scale @ A3:	N.T.S
Drawing Number:	03



Suite 5.02, Level 5, 1 Castlereagh Street
Sydney NSW 2000
info@asongroup.com.au



Revision notes:		
Rev:	Date:	Notes:
For information purposes only - not for construction		

Drawn By: VC
Client: Meriden School

Project: 0686 Meriden School
Drawing Title: Swept Path Analysis - 12.5m HRV Lingwood Campus

Date: 13-May-19
Scale @ A3: N.T.S
Drawing Number: 04

asongroup

Suite 5.02, Level 5, 1 Castlereagh Street
Sydney NSW 2000
info@asongroup.com.au



Revision notes:		
Rev:	Date:	Notes:
For information purposes only - not for construction		

Drawn By:
VC
Client:
Meriden School

Project:
0686 Meriden School
Drawing Title:
Vernon Street Reverse Manoeuvre

Date:
13-May-19
Scale @ A3:
N.T.S
Drawing Number:
05



Suite 5.02, Level 5, 1 Castlereagh Street
Sydney NSW 2000
info@asongroup.com.au

Appendix B

Sustainable Travel Plan Package

Green Travel Plan

Meriden School State Significant Development Application
10-12 Redmyre Road, Strathfield

Ref: 0686r03v1
3 July 2019

Document Control

Project No: P0686

Project: Meriden School Stage 1 SSDA – GTP and WTP

Client: Meriden School

File Reference: 0686r03v2 GTP Meriden School

Revision History

Revision	Date	Details	Author	Approved by
-	20/06/2019	Issue	V. Cheng	R. Butler-Madden
-	03/07/2019	Issue	R. Butler-Madden	R. Butler-Madden

This document has been prepared for the sole use of the Client and for a specific purpose, as expressly stated in the document. Ason Group cannot accept any responsibility for any use of or reliance on the contents on this report by any third party. This document has been prepared based on the Client's description of its requirements, information provided by the Client and other third parties to prepare this document.

Table of Contents

1	INTRODUCTION	3
1.1	PURPOSE	3
1.2	SITE LOCATION	4
2	STRATEGIC PLANNING CONTEXT	6
2.1	FUTURE TRANSPORT 2056 STRATEGY	6
2.2	NSW LONG TERM TRANSPORT MASTER PLAN.....	6
2.3	OUR GREATER SYDNEY 2056: EASTERN CITY DISTRICT PLAN	6
2.4	SYDNEY'S BUS FUTURE 2013	6
2.5	SYDNEY'S WALKING FUTURE 2013.....	7
2.6	SYDNEY'S CYCLING FUTURE 2013	7
3	SITE AUDIT & DATA COLLECTION	9
3.1	PROPOSED DEVELOPMENT & SITE FACILITIES	9
3.2	SCHOOL POPULATION	12
3.3	TRAVEL MODE SURVEY.....	12
3.4	JUNIOR SCHOOL STUDENTS	13
3.5	SENIOR SCHOOL STUDENTS.....	14
3.6	TRAVEL MODE SUMMARY	15
3.7	CAR OCCUPANCY	16
3.8	TRAFFIC GENERATION	16
3.9	CAR PARKING.....	17
3.10	SURROUNDING PUBLIC TRANSPORT SERVICES	17
3.11	PEDESTRIAN AND CYCLING NETWORK	21
4	OBJECTIVES & TARGETS	26
4.1	OBJECTIVES	26
4.2	TRAVEL PLAN TARGETS	27
5	ACTION PLAN	29
5.1	STUDENT GREEN TRAVEL ACTION PLAN MEASURES	29
5.2	COMMUNICATIONS STRATEGY	30
6	GOVERNANCE & SUPPORT	31
6.1	TRAVEL PLAN COORDINATOR	31
6.2	RESOURCING.....	31
7	MONITORING & REVIEW PROCESS	32
7.1	PLAN MAINTENANCE	32
7.2	TRAVEL MODE AUDIT REQUIREMENTS	32

Appendices

- Appendix A: Workplace Travel Plan
- Appendix B: Transport Access Guide
- Appendix C: Sample Travel Mode Questionnaire Form

1 Introduction

1.1 Purpose

Ason Group has been engaged by Meriden School to prepare a Sustainable Travel Plan (STP) package that includes a Green Travel Plan (GTP) and a Workplace Travel Plan (WTP) in relation to the development for Stage 1, Meriden School, Strathfield (the Site). It is noted that the WTP which is to be developed as part of the STP package for the School is provided as **Appendix A** and has been designed to complement this GTP, with a specific focus on staff travel.

This STP package is provided in response to Key Issue 7 of the Secretary's Environmental Assessment Requirements (SEARs) of SSD 9692, dated 22 November 2018, which states:

"Details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan and specific Workplace travel plan) and the provision of facilities to increase the non-car mode share for travel to and from the site."

This GTP is intended to develop a package of site-specific measures to promote and maximise the use of sustainable travel modes, including walking, cycling, public transport and car sharing. In this regard, this plan sets out objectives and strategies to assist the Department of Planning and Environment (DPE) in achieving its goal to improve sustainability. It includes a review of existing transport choices and sets targets so that the effective implementation of the GTP can be assessed. These targets are to be realistic but ambitious enough to initiate substantive behavioural change to achieve the desired outcomes. The Plan shall be reviewed regularly as part of an ongoing review to ensure it remains relevant and reflective of current conditions.

In preparing this GTP, Ason Group has referenced the following key planning documents that are relevant to development at the Site:

- Future Transport Strategy 2056, TfNSW, March 2018.
- A Plan for Growing Sydney, Department of Planning & Environment, December 2014.
- NSW Long Term Transport Master Plan, TfNSW, December 2012
- Our Greater Sydney 2056: Eastern City District Plan, Greater Sydney Commission, March 2018
- Sydney's Walking Future, TfNSW, December 2013
- Sydney's Cycling Future, TfNSW, December 2013
- Sydney's Bus Future, TfNSW, December 2013

- Strathfield Consolidated Development Control Plan (SCDCP 2005)
- Strathfield Local Environmental Plan (2012)
- An Active Travel Plan for Strathfield (2016)

This GTP would ensure that the School achieves a reduction in travel by car. Further consultation with Council, TfNSW and D&PE will be required to refine this GTP which will be implemented in response to a suitable Condition of Consent associated with any Development Consent.

1.2 Site Location

The Site is located at Meriden School, 10-12 Redmyre Road, Strathfield and lies approximately 10 kilometres south-east of Parramatta and 11 kilometres west of the Sydney CBD. The School has three campus sites in close proximity to each other. **Figure 1** shows the three campuses in its local context and **Figure 2** shows the key roads providing access to the School.

It is located within the Local Government Authority of Strathfield Council.



Figure 1: Local Site Context

Source: AJ&C Architects



Figure 2: Site and Road Hierarchy

2 Strategic Planning Context

2.1 Future Transport 2056 Strategy

Future Transport 2056 Strategy is an overarching strategy, supported by a suite of plans to achieve a 40 year vision for the state-wide transport system. The strategy suggests that it is essential to encourage people to use active and public transport through the following methods:

- Expanding public transport networks, and
- Integrating walking and cycling networks

2.2 NSW Long Term Transport Master Plan

The NSW Long Term Transport Master Plan is a NSW Government document which seeks to guide transport decision making for the next 20 years. The report also supports the Government's A Plan for Growing Sydney. It integrates land use planning, infrastructure provision and transport planning across all modes of transport. The master plan includes a range of actions for road, rail, ferries, light rail, cycling and walking.

2.3 Our Greater Sydney 2056: Eastern City District Plan

The Eastern City District Plan aims to improve the District's lift style and environment assets. One of the potential direction indicators is the Expanded Greater Sydney Green Grid, which will provide green links to support walking, cycling and community access to open space.

In this regard, this plan indicates the potential improvements of the active and public transport infrastructure near Meriden School in the future. As presented in **Figure 3** Meriden School is adjoining to Green Grid Opportunities, and there is potential opportunity for Green Grid to expand through the Site.

2.4 Sydney's Bus Future 2013

Sydney's Bus Future has been developed to deliver simpler, faster and better bus services for customers, and attract more customers to use bus services throughout Sydney. A 3-tiered network will operate with each level delivering a defined level of service, consistency and reliability throughout Sydney. 13 rapid bus routes and 20 major suburban bus routes are proposed to strengthen connections between key town centres, which will ultimately improve travel times to Meriden School.

2.5 Sydney's Walking Future 2013

Getting people in Sydney to walk more through actions that make it a more convenient, better connected and safer mode of transport. The basis of Sydney's walking future is to promote the benefits of walking through additional infrastructure, technologies and good policy which will ultimately benefit Meriden School

2.6 Sydney's Cycling Future 2013

The basis of Sydney's cycling future is getting people in Sydney to cycle more through providing a more convenient, better connected and safer mode of transport. The NSW Government will focus on completing links within a 5-kilometre catchment of major centres in the short term and expand to a 10-kilometre catchment in the longer term. Meriden School is currently located within the 5km bicycle riding catchment from major activity centres and existing cycleways.

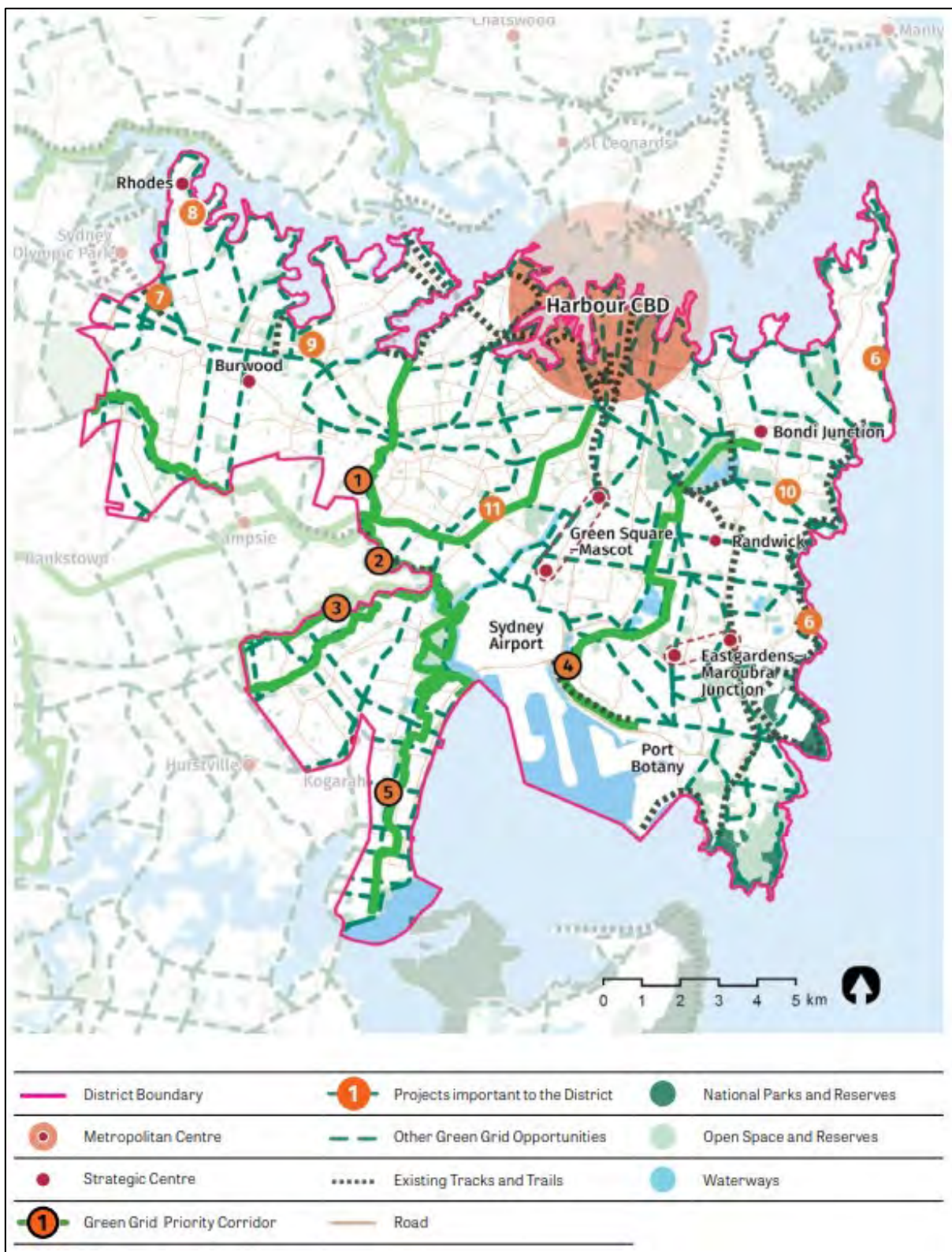


Figure 3: Eastern City Green Grid opportunities

3 Site Audit & Data Collection

3.1 Proposed Development & Site Facilities

The proposed development relates to alterations and additions across the three school campuses. Each of the School campuses are shown in **Figure 4**, while reduced copies of the SSDA Site Plans prepared by Allen Jack + Cottier Architects are provided for context in **Figure 5**, **Figure 6** and **Figure 7**.



Figure 4: Precinct Diagram (relevant sites under assessment outlined in red)

Source: AJ&C Architects

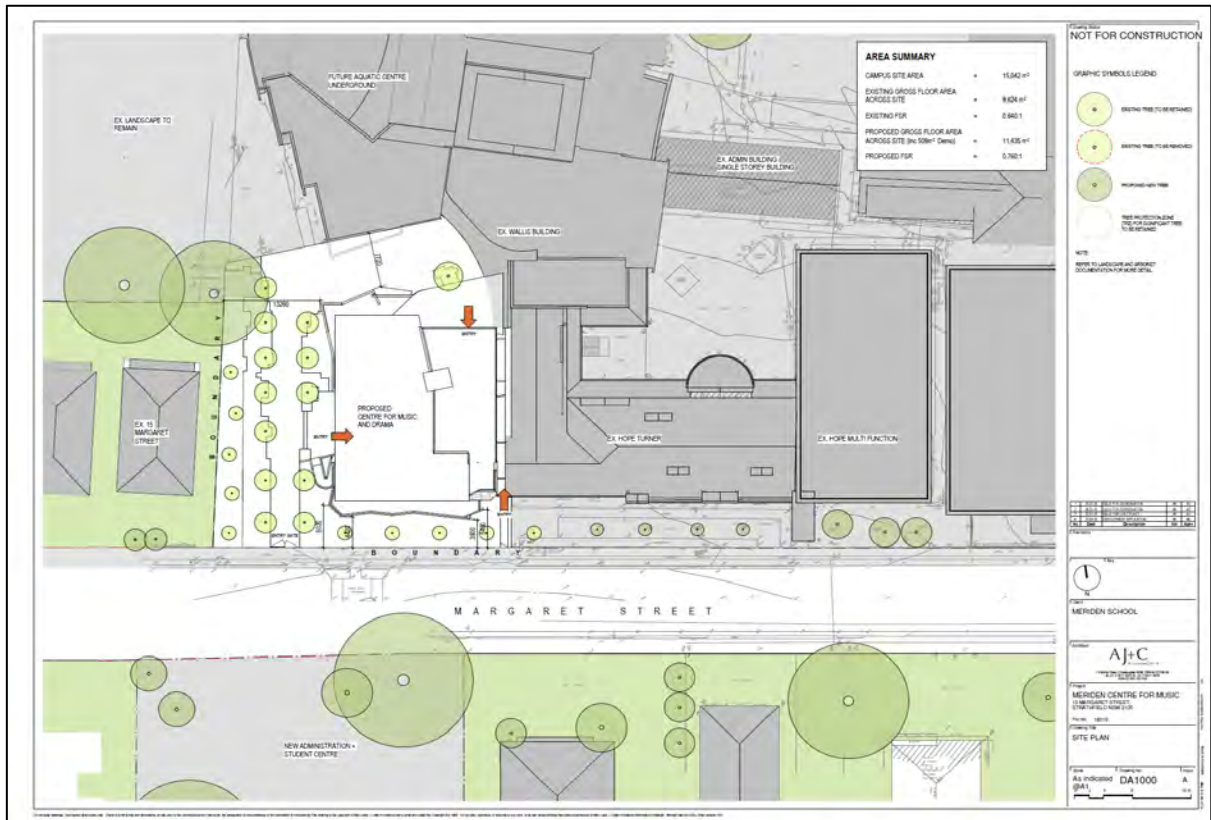


Figure 5: Proposed Senior Campus Centre for Music and Drama Layout (Site Plan)



Figure 6: Junior Campus Proposed Playground

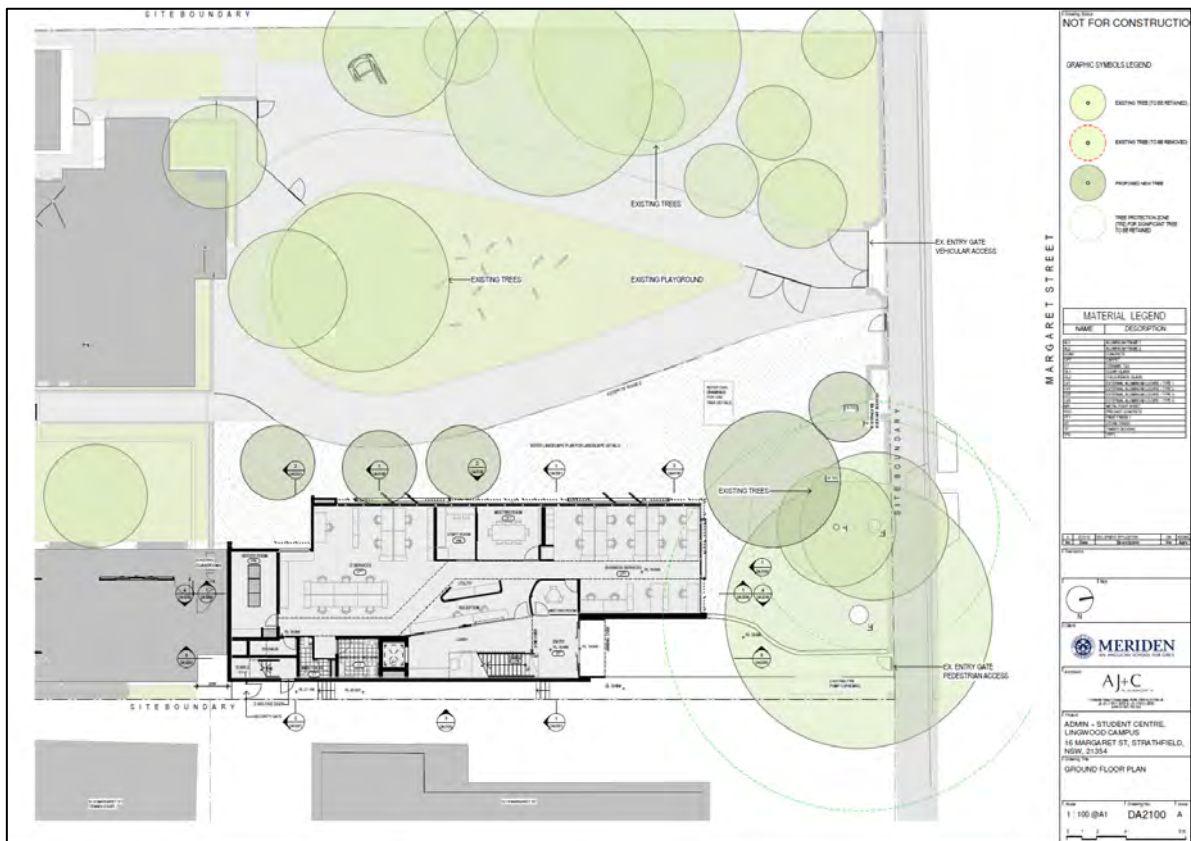


Figure 7: Admin & Student Centre Lingwood Campus Proposed Stage 2 Works

Key details for each building area are summarised below:

- **At the Senior Campus:** Demolition of the existing music building located towards the south-western corner of the Senior Campus, and construction of a new 3-storey building (above ground) incorporating a new music academy, drama facilities, music teaching rooms, and staff facilities alongside on-site landscaping.
- **At the Junior Campus:** Demolition of the existing residential dwelling at 4 Vernon Street to make way for a new landscaped playground area; the existing access and parking arrangements at the Junior Campus will be retained.
- **At the Lingwood Campus:** Demolition of the existing single storey Business Office building and construction of a new 2-storey A & S Building, to be designed with maximum flexibility to accommodate a wide range of uses, and to adapt with the demands of the school.

3.2 School Population

3.2.1 Existing Population

The School currently has a total student population of 1,254 students, with 424 students in the Junior School (Pre K – Year 6) and 830 students in the Senior School (Year 7 to Year 12) in the Senior School. The School could currently accommodate a total of 1,500 students based on the existing facilities.

The School currently employs a total of 242 staff, including 156 full-time staff and 86 part-time staff.

3.2.2 Proposed Population

The proposed new teaching facilities will result in an increased capacity of approximately 50 students and 2 staff across all three campuses. This is an increase of the school's current total capacity from approximately 1,500 students to approximately 1,550 students and a total of 244 staff across all three campuses.

3.3 Travel Mode Survey

Ason Group in consultation with the School prepared a short Travel Survey which was made available to all students and staff via the Survey Monkey application. The purpose of the Travel Survey was to determine key traffic and parking characteristics of existing students and staff, including:

- Travel mode for both the arrival and departure trip;
- For those students and staff driving or being driven, car occupancy;
- Arrival and departures peak periods;
- On and off-site parking demand.

As the School has both Senior and Junior students, separate surveys were undertaken to reflect the different travel characteristics for each, noting that younger students have a greater reliance on pick-up / drop-off trips.

Approximately 55% of the existing 1,254 students responded to the Travel Survey; the results are discussed in sections below.

It is noted that the results of the staff survey are provided within the WTP provided as Appendix A.

3.4 Junior School Students

3.4.1 Junior Student Travel Mode

Figure 8 provides a summary of the surveyed travel modes for Junior students, noting that mode choice for Junior students was generally the same for the arrival and departure trips.

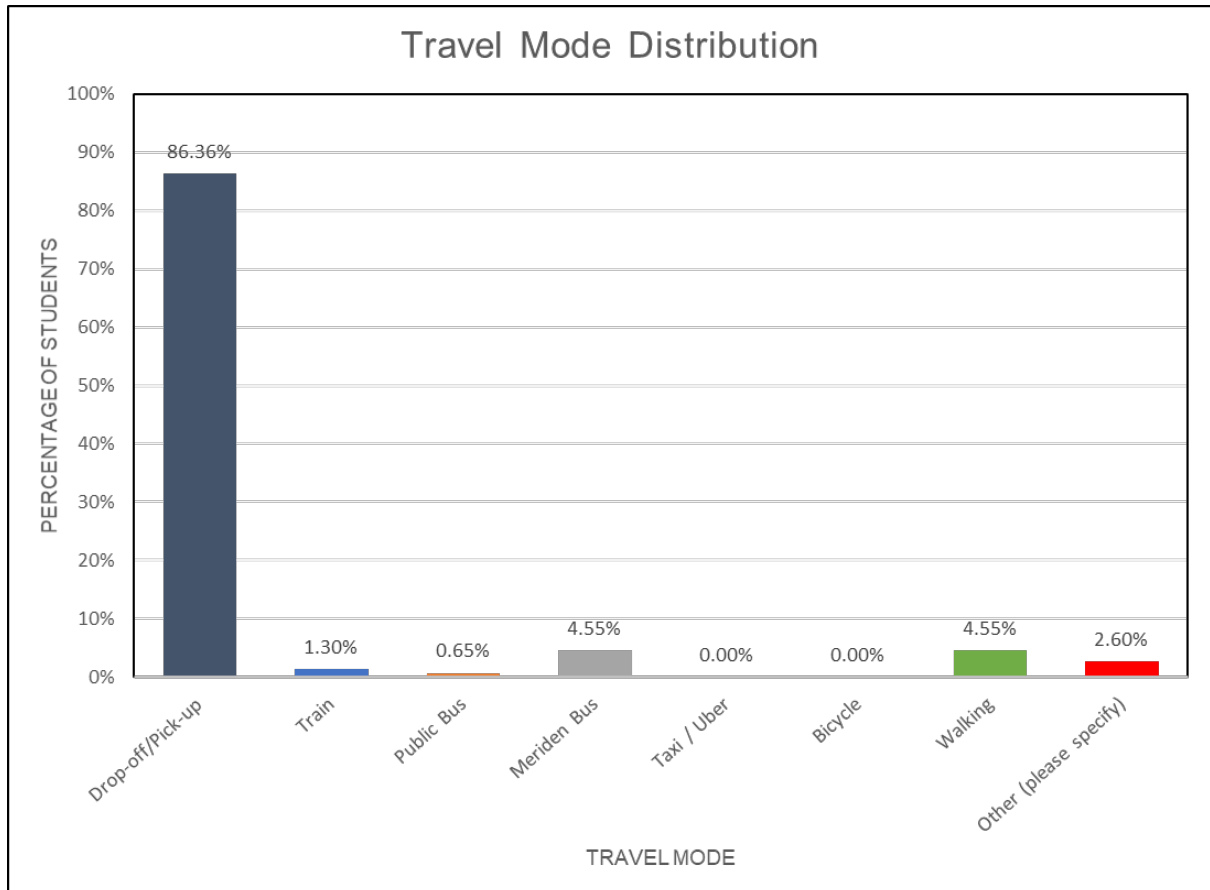


Figure 8: Junior Student Travel Mode

The Travel Survey reports 2.6% of Junior students with a travel mode as 'other'; based on a review of the survey information, it is apparent that this response was generally provided by those undertaking multi-modal trips, namely a car to a bus stop, then a Meriden School bus to finish the trip. Importantly, such trips would not generally include a private vehicle trip to/from the School itself.

In summary, the Junior student Travel Survey indicates that:

- Almost all Junior students are driven to / from School (approximately 86% of Junior students); and
- The next most popular forms of transport are the Meriden (private) Bus and walking, with approximately 4.6% of students using these modes to travel to/from the School.

3.5 Senior School Students

3.5.1 Senior Student Travel Mode

Figure 9 provides details of the surveyed Senior student travel modes, noting again that mode choice for Senior students was generally the same for the arrival and departure trips.

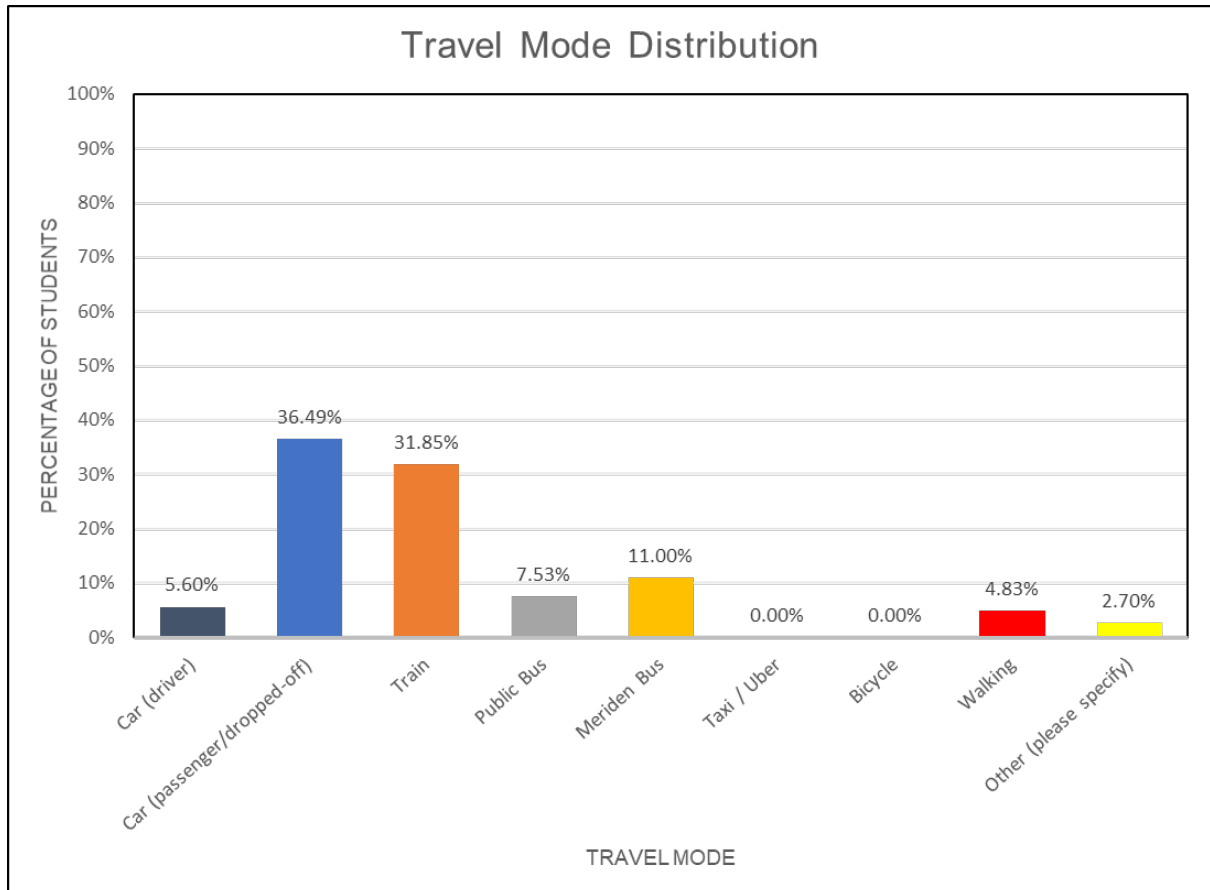


Figure 9: Student Travel Mode

As shown in Figure 9, there is a significantly broader distribution of travel modes amongst the Senior Students when compared to the Junior Students.

In summary, the Senior Student Travel Survey indicates that:

- Approximately 5% of Senior students drive to / from to School;
- Approximately 36% of Senior students are driven to / from School;
- Approximately 32% Senior students use the train (with a walk trip) for the trip to / from School; and
- A total of 58% of Senior students travel by modes other than private vehicle.

3.6 Travel Mode Summary

With reference to the results of the Travel Survey, **Table 1** provides a summary of existing travel modes for all students and staff at the School.

Table 1: Existing Mode Share Summary

Travel Mode	Existing Mode Share of Junior Students	Existing Mode Share of Senior Students	Existing Mode Share of Staff
Vehicle driver	N/A	6%	69%
Dropped Off	86%	36%	0%
Taxi / Uber	0%	0%	0%
Train	1%	32%	24%
STA Bus	1%	7%	2%
Meriden School Bus	5%	11%	N/A
Bicycle	0%	0%	0%
Walk	5%	5%	2%
Other mode	2%	3%	3%

Application of the Travel Survey results to the school's existing population results in the following **Table 2**, which provides a breakdown of existing travel modes for all students and staff.

Table 2: Existing Population Mode Share Summary

Travel Mode	Existing Mode Share of Junior School Students		Existing Mode Share of Senior School Students		Existing Mode Share of Staff	
	%	Number	%	Number	%	Number
Vehicle driver	N/A	N/A	6%	50	69%	167
Dropped Off	86%	365	36%	299	0%	0
Taxi / Uber	0%	0	0%	0	0%	0
Train	1%	4	32%	266	24%	58
STA Bus	1%	4	7%	58	2%	5
Meriden School Bus	5%	21	11%	91	N/A	0
Bicycle	0%	2	0%	0	0%	0
Walk	5%	21	5%	42	2%	5
Other mode	2%	8	3%	25	3%	7
Total	100%	424	100%	830	100%	242

3.7 Car Occupancy

With reference to the Travel Survey information outlined in sections above, this GTP specifically references the following detail:

- **Car Occupancy:** For students travelling to the School by car, how many students per vehicle.

This is because reducing journeys by car is difficult to influence for students. The School actively discourages students from driving to School themselves, hence the number that drive is already low. And for Junior School students being dropped-off by a parent is a necessity in most circumstances. Thus, not only is it necessary for a target to aim to increase journeys by non-car modes, but also a key objective of this specific GTP is to increase the amount of shared car trips.

In this regard, the Travel Surveys found that the average car occupancy for students was approximately 1.5 students per vehicle, with Senior students having a slightly higher car occupancy (1.6 students per vehicle) than the Junior students (1.4 per vehicle).

3.8 Traffic Generation

Taking the above into consideration provides the vehicle movements (to and from) generated by the number of staff and students at the School:

- Junior School Students: 521 vehicles per day
- Senior School Students: 436 vehicle movements per day
- Staff: 334 vehicle movements per day
- Total: 1,291 vehicle movements per day.

Table 3 summarises the daily 2-way flow in terms of vehicle trips per head of staff and students (FTE).

Table 3: Vehicle Trips per Head

Year	Combined FTE Total	Total Trips	Trips per Head
2019	1,406	1,291	0.918

3.9 Car Parking

The School currently provides 98 car parking spaces across the Senior and Junior campuses. Further to the completion of Lingwood Campus Stage 1 works, an additional 8 parking spaces will be provided on the Lingwood Campus; a total of 106 parking spaces would therefore be provided across the three School campuses.

3.10 Surrounding Public Transport Services

3.10.1 Rail Services

The *Integrated Public Transport Service Planning Guidelines*, Sydney Metropolitan Area (TfNSW, December 2013), states that train services influence the travel mode choices of areas within 800 metres walking distance (approximately 10 minutes) of a train station. In this regard, Strathfield Station is located approximately 200m – 400m to the north of the School (based on the different campuses). Strathfield Station is a major rail hub that provides the following frequent services:

Table 4: Train Frequencies

Line – Station ¹	Eastbound	Westbound	Total
<i>T1 Line: Strathfield Station</i>			
Morning Peak Hour (6AM-9AM)	33	21	54
Evening Peak Hour (3PM-6PM)	35	29	64
<i>T2 Line: Strathfield Station</i>			
Morning Peak Hour (6AM-9AM)	30	25	55
Evening Peak Hour (3PM-6PM)	25	29	54
<i>T9 Line: Strathfield Station</i>			
Morning Peak Hour (6AM-9AM)	20	19	39
Evening Peak Hour (3PM-6PM)	20	19	39

In addition to the regular suburban trains, the station is also frequented by express trains that arrive approximately every 15 minutes. There are two express services that stop at Strathfield station, the BMT and the CCN. Therefore, the two-way frequencies of this express service are approximately 16 express services an hour.

The above table demonstrates that Strathfield railway station is well serviced in peak periods with trains arriving approximately every 2-3 minutes per direction.



Figure 10: Suburban Rail Network

3.10.2 Public Bus

The Public Transport Guidelines state that bus services influence the travel mode choices of areas within 400 metres walk (approximately 5 minutes) of a bus stop. In this regard, bus stops are located within 400 metres walking distance from the School in Redmyre Road, The Boulevard, Albert Road and near Strathfield Station, as shown in **Figure 11**. A major bus interchange is also located at Strathfield Station providing an accessible location to transfer to different buses services (and between rail and bus).

There are twelve bus routes within walking distance of the School, which are listed in **Table 5** below.

Table 5: Public Bus Services

Bus Number	Route	Average Weekday Service Frequency
407	Burwood to Strathfield	AM peak - 30 min PM peak - 30 min
408	Burwood to Rookwood Cemetery	AM peak – 1 hour PM peak – 1 hour
415	Campsie to Chiswick	AM peak – 20-30 min PM peak – 20-30 min
480	Strathfield to Domain via Homebush Road	AM peak – 20-30 min PM peak – 20-30 min
483	Strathfield to Domain via South Strathfield	AM peak – 20-30 min PM peak – 20-30 min
M90	Metrobus Burwood to Liverpool	AM peak – 10-15 min PM peak – 10-15 min
913	Strathfield to Bankstown via Greenacre	AM peak – 1 hour PM peak – 1 hour
914	Strathfield to Bankstown via Chullora	AM peak - 30 min PM peak - 30 min
450	Strathfield to Hurstville	AM peak - 15 min PM peak - 15 min
458	Burwood to Ryde	AM peak - 30 min PM peak - 30 min
525	Parramatta to Burwood via Olympic Park	AM peak – 20-30 min PM peak – 20-30 min
526	Burwood to Rhodes Shopping Centre	AM peak – 15-30 min PM peak – 15-30 min

With reference to Table 5, it is clear that the School has excellent access to bus services, noting that Routes 480, 415, 913, 914 and 450 operate via the Redmyre Road and The Boulevard bus stops in in close proximity to the School.

It can be seen that the bus stops within the vicinity of the Site have numerous connections throughout Sydney. An overview of the bus routes in close proximity to the Site is detailed in **Figure 11**.

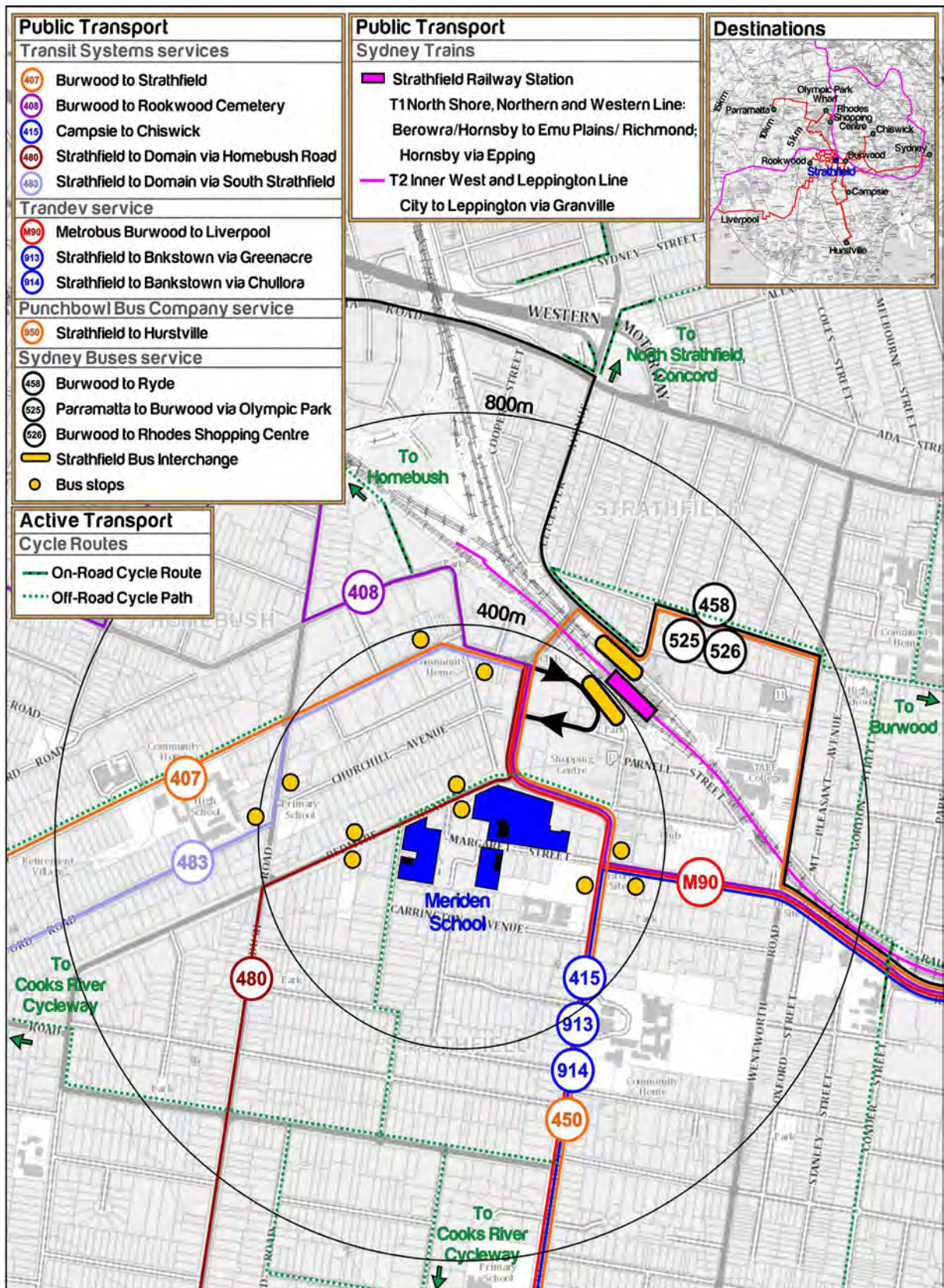


Figure 11: Public Transport Network

3.10.3 School Bus Services

The School currently provides private school bus services for its students which operate along the following routes:

- Drummoyne – Russell Lea - Five Dock – Canada Bay - Concord
- Concord – Breakfast Point - Cabarita
- Balmain – Rozelle – Leichhardt – Dulwich Hill
- Summer Hill – (Trinity Grammar)
- Woolwich – Hunters Hill – Gladesville – Putney - Rhodes
- Illawong – Padstow Heights – Beverly Hills
- Taren Point – Miranda – Sylvania – Blakehurst
- Hurstville – Beverly Hills

These bus services typically arrive at the School at around 8.00am and depart the School between 3:20pm and 3:30pm every weekday. School bus pick-up and set-down zones are located along the northern side of Margaret Street, with Junior escorted across the pedestrian crossing to the bus marshalling area north of the bus zone within the Senior Campus.

3.11 Pedestrian and Cycling Network

The areas surrounding the School are well serviced in terms of pedestrian infrastructure with footpaths available on both sides of roads near the School. **Figure 12** details the key pedestrian crossings and **Figure 13** details the pedestrian desired routes to transport options.



Figure 12: Key Pedestrian Road Crossings



Figure 13: Desired Pedestrian Routes

An existing Cycle Path Map for Strathfield Council Area is included in **Figure 14**. Even though currently there are no direct connections from the Site to existing cycling system in Strathfield, the Active Travel Plan for Strathfield (2016) has proposed an on-road bicycle route (L4) along Redmyre Road and a shared path route (L6) along The Boulevarde. These proposed bicycle routes will connect the Site to the Strathfield Town Centre, Homebush and Flemington train stations, which are serviced by T1, T2 T3 and T7 train lines. A map of proposed bicycle network in Strathfield is included in **Figure 15**.

As presented in the existing Cycle Path Map for Strathfield Council Area, there are no existing public bicycle racks provided in close proximity to the Site.

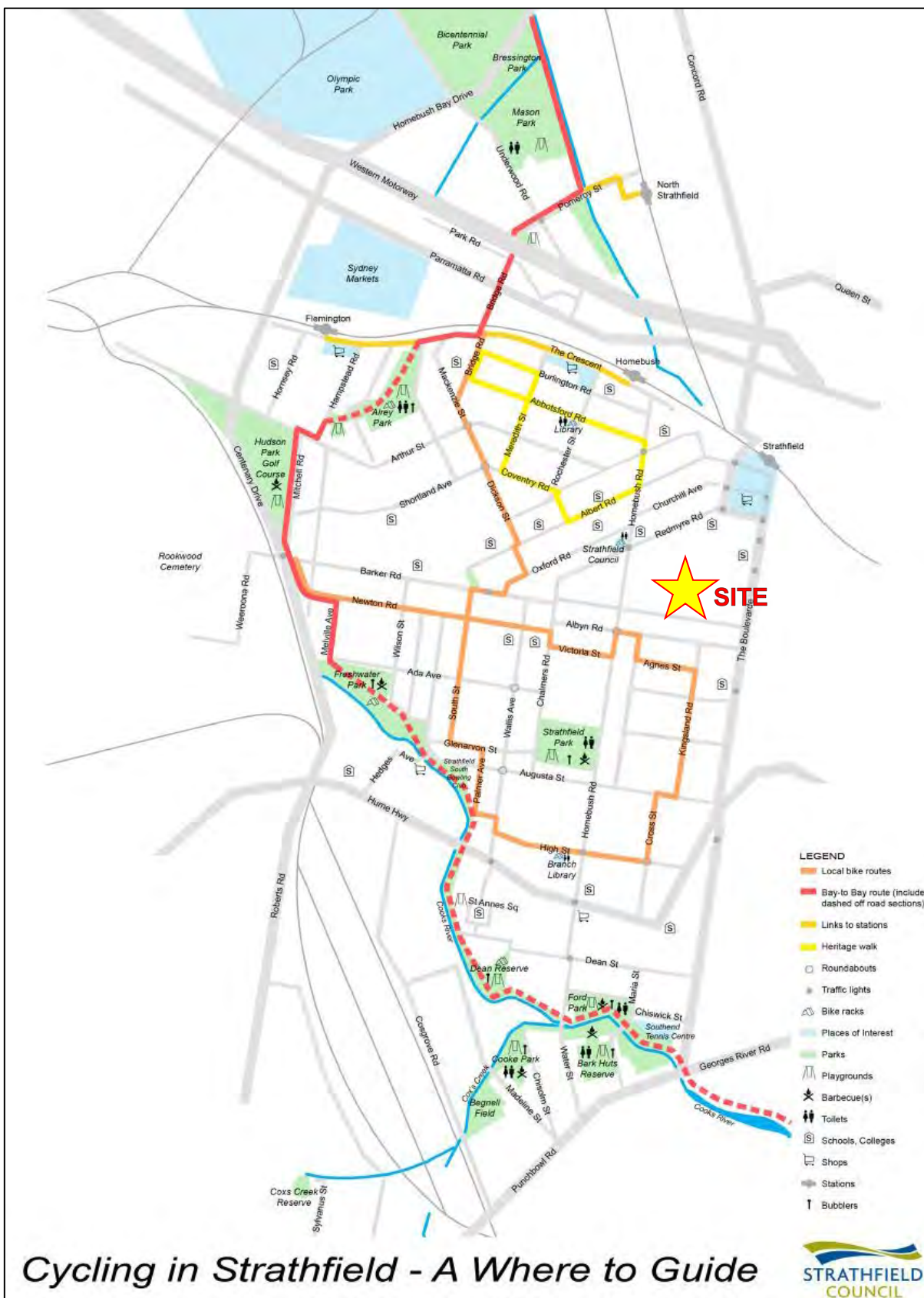


Figure 14: Existing Strathfield Cycling Routes

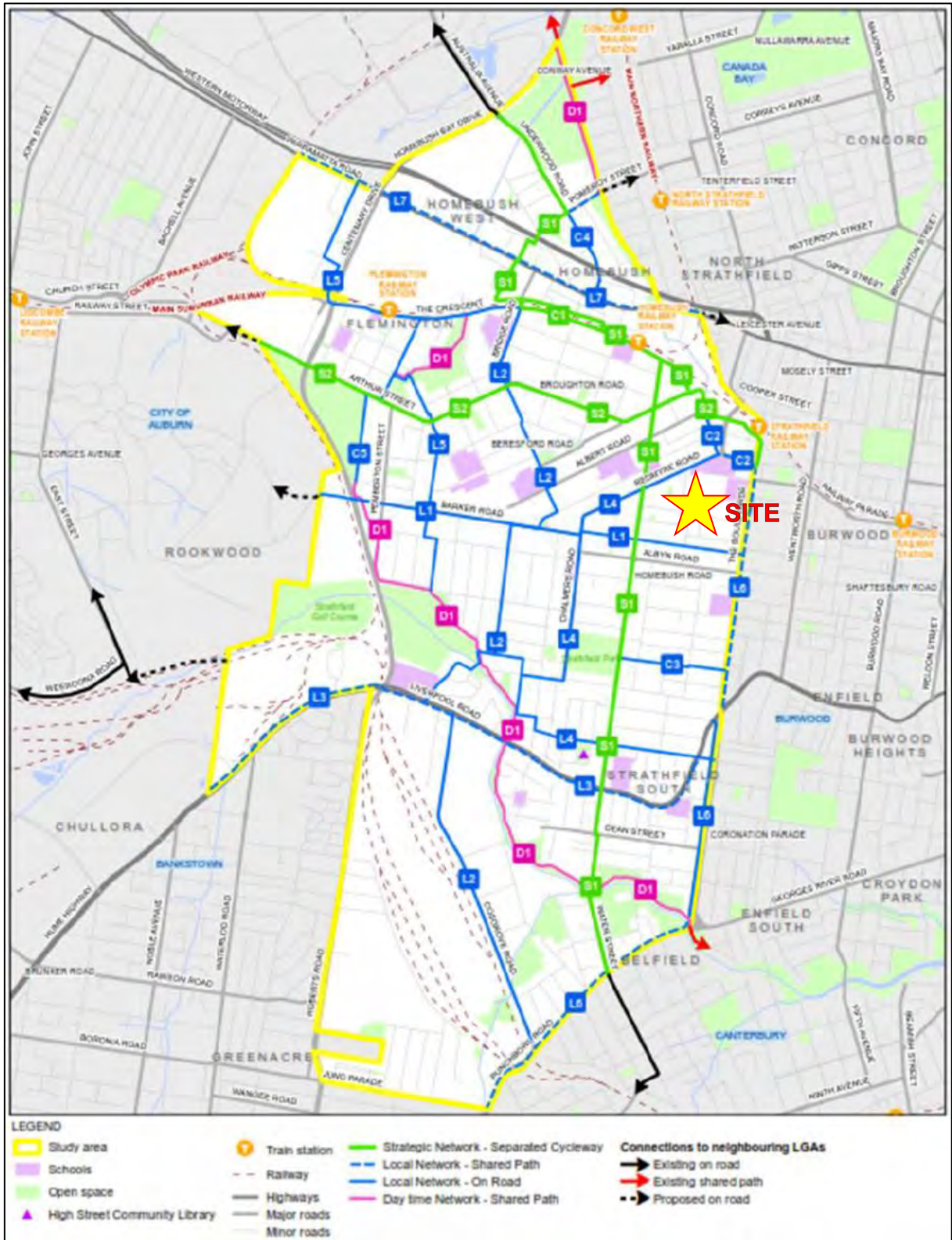


Figure 15: Proposed Strathfield Cycling Routes

4 Objectives & Targets

4.1 Objectives

The primary objectives of this GTP are to:

- Reduce the environmental footprint of the development
- Promote the use of 'sustainable transport' modes such walking and cycling, particularly for short-medium distance journeys and public transport
- Reduce reliance on the use of private vehicles for all journeys
- Encourage higher vehicle occupancy rates
- Create a safe and healthy environment during pick up and drop off times
- Encourage a healthier, happier and more active social culture

Having regard for the above, this Plan adopts the following movement hierarchy with priority given to 'active transport' followed by mass public transport and lastly the use of cars and other private vehicles.



Figure 16: Movement Hierarchy

4.2 Travel Plan Targets

The overall target of the STP package is to decrease car trips per head associated with the School. The below travel mode share targets are a way of achieving this overall target.

It is important to note that students exhibit different travel behaviours based on their age group. As such, for younger Junior School Students, a higher priority is to focus on boosting higher vehicle occupancy per student while for older Senior School Students will be to encourage travel by non-car modes to and from school.

The Proposed mode share targets for the Junior School are provided as **Table 6**.

Table 6: Junior School Mode Share Targets

Travel Mode	Existing Mode Share of Junior Students	Proposed Mode Share	Relative Change
Vehicle driver	N/A	N/A	N/A
Dropped Off	86%	80%	-6%
Taxi / Uber	0%	0%	-
Train	1%	3%	+2%
STA Bus	1%	1%	-
Meriden School Bus	5%	9%	+4%
Bicycle	0%	0%	-
Walk	5%	5%	-
Other mode	2%	2%	-

With the increase of 50 students across all three campuses, it is important to at least maintain the current Junior student car occupancy of 1.4 students per vehicle.

The Proposed mode share targets for the Senior School are provided as **Table 7**.

Table 7: Senior School Mode Share Targets

Travel Mode	Existing Mode Share of Senior Students	Proposed Mode Share	Relative Change
Vehicle driver	6%	5%	-1%
Dropped Off	36%	26%	-10%
Taxi / Uber	0%	0%	-
Train	32%	35%	+3%
STA Bus	7%	11%	+4%
Meriden School Bus	11%	14%	+3%
Bicycle	0%	1%	+1%
Walk	5%	5%	-
Other mode	3%	3%	-

Senior School Students should continue to develop their independence to travel to and from the School campuses without parental assistance. These mode share targets are realistic, yet ambitious to allow Senior Students to understand sustainable travel and play an active role in reducing congestion and CO2 emissions. With the close proximity of train and bus networks, it is considered feasible to encourage students to shift to these alternative modes and reduce reliance on private vehicles.

Measures and strategies to achieve these targets are discussed in **Section 5**.

5 Action Plan

5.1 Student Green Travel Action Plan Measures

A separate set of specific actions has been developed in response to the different needs required by students. The School will undertake a review of the Action Plan and implement as best they can to achieve each action item. **Table 8** also identifies the body responsible for each action.

Table 8: Green Travel Action Plan Measures

Item No.	Action / Description	Responsibility
1. General		
1.1	Establish a campus transport coordinator which is to manage student transport demands for their respective campuses	School
1.2	Preparation and maintenance of a Green Travel Plan	School
1.3	Provide 'Travel Welcome Pack' for new students and their parents via emails and newsletter, highlighting alternate modes of transport other than use of a private vehicle.	School
1.4	Review of GTP as a regular item on the agenda for the School.	School
2. Walking and Cycling		
2.1	Improve cycle connectivity on surrounding roads	Council
2.2	Promote participation in the Ride to School Day activity	School
2.3	Provide clearly signposted cycle parking within the Site	School
2.4	Provision of footpaths on local roads in accordance with Strathfield Council DCP	Council
2.5	In accordance with the 1% cycling mode share target, appropriate cycle parking shall be provided within the Site	School
2.6	Walking buses to provide drop-off in the immediate vicinity of the school in safe locations.	School
2.7	School challenges that reward students for taking active transport to and from school.	School
2.8	Free active travel breakfast for students who choose to cycle or walk to school as part of an event or club.	School
2.9	Running a cycling training course to promote and teach cycling skills.	School
3. Public Transport		
3.1	Provide increased public transport services in response to increased development within the surrounding area	TfNSW / Council
3.2	Update the GTP to reflect changes to any train and bus routes and service times	School
3.3	Travel information and maps on notice boards	School
3.4	Promote responsible behavior and anti-bullying policies for public transport	School
3.3	Undertake a review to promote initiatives for students using public transport.	School

4. Car Share

4.1	Establish a car-pooling program to help parents and students find someone to share in their daily drive to School	School
4.2	Students encouraged to use a shared car (e.g. GoGet) to reduce the need for individuals to drive to School.	School

5.2 Communications Strategy

5.2.1 Welcome Packs

New parents and students shall be provided with a 'welcome pack' as part of the School induction process which includes the GTP and other information in relation to sustainable transport choices. This pack shall include a copy of the GTP as well as general information regarding the health and social benefits of active transport. Advice on where to find further information should also be included such as links to Sydney Cycleways website (<http://www.sydneycycleways.net>).

5.2.2 Accurate Transport Information

In addition to these 'welcome packs', a copy of the Travel Access Guide (TAG) shall be emailed to all staff, parents and students. This TAG can be found in **Appendix B**. The TAG shall be presented in a form that is reflective of the commitment to achieving positive transport objectives. The TAG is not to be presented on loose paper.

5.2.3 Newsletters

School newsletters will be emailed to every student, staff and parents every fortnight. Any new travel arrangements or green travel promotions can be broadcasted on this medium for up-to-date information.

6 Governance & Support

6.1 Travel Plan Coordinator

A representative from the School shall be responsible for:

- Implementation and promotion of the GTP actions
- Monitoring the effectiveness of the GTP (refer to monitoring requirements outlined in Section 7) and ongoing maintenance of the Plan
- Provide advice in relation to transport-related subjects to staff, parents, students and visitors, as required.
- Liaise with external parties (i.e. Council, public transport and car share operators) in relation to Travel Plan matters.

This role does not necessarily require full-time position; however, it shall be clearly designated among the key responsibilities of the estate management.

6.2 Resourcing

It is not anticipated that the maintenance of this GTP will have significant ongoing cost implications and shall be reviewed every 12 months by the School.

7 Monitoring & Review Process

7.1 Plan Maintenance

This Plan shall be subject to ongoing review and will be updated accordingly. Regular reviews will be undertaken by the on-site coordinator, as required. As a minimum, review of the GTP shall occur at a 2-year frequency, however an annual review would be preferred.

Key considerations regarding the review of the GTP shall be:

- Updating baseline conditions to reflect any changes to the transport environment in the vicinity of the site such as changes to bus services, new cycle routes etc. In this regard, review of the GTP may be undertaken on a more frequent basis.
- Tracking progress against proposed travel mode targets
- To identify any shortfalls and develop an updated action plan to address issues
- To ensure travel mode targets are updated (if necessary) to ensure they remain realistic but also ambitious.

7.2 Travel Mode Audit Requirements

Travel mode surveys will be undertaken to determine the proportion of persons travelling to/from the site by each transport mode. This will be in the form of annual travel mode questionnaire surveys to be completed by all persons attending the site, as far as practicable. A sample of a typical travel mode questionnaire form is included in **Appendix C**.

A physical survey recording the mode of travel for all employees entering and exiting the site shall be undertaken following a year of operation to establish a reliable baseline data set from which to base future iterations of this GTP. Subsequent surveys will primarily rely on the questionnaire survey methodology to reduce the costs associated with this data collection.

Appendix A

Workplace Travel Plan (WTP)

Workplace Travel Plan

Meriden School State Significant Development Application
10-12 Redmyre Road, Strathfield

Ref: 0686r04v2
3 July 2019

Document Control

Project No: P0686

Project: Meriden School Stage 1 SSDA – GTP and WTP

Client: Meriden School

File Reference: 0686r04v2 WTP Meriden School, Issue II

Revision History

Revision	Date	Details	Author	Approved by
-	20/06//2019	Issue	V. Cheng	R. Butler-Madden
-	03/07//2019	Issue	R. Butler-Madden	R. Butler-Madden

This document has been prepared for the sole use of the Client and for a specific purpose, as expressly stated in the document. Ason Group cannot accept any responsibility for any use of or reliance on the contents on this report by any third party. This document has been prepared based on the Client's description of its requirements, information provided by the Client and other third parties to prepare this document.

Table of Contents

1	INTRODUCTION	3
1.1	PURPOSE	3
1.2	SITE LOCATION	4
2	SITE AUDIT & DATA COLLECTION	6
2.1	PROPOSED DEVELOPMENT & SITE FACILITIES	6
2.2	SCHOOL POPULATION	9
2.3	TRAVEL MODE SURVEY	9
2.4	STAFF TRAVEL SURVEY RESULTS	9
2.5	TRAFFIC GENERATION	11
2.6	CAR PARKING	11
2.7	SURROUNDING PUBLIC TRANSPORT SERVICES	11
2.8	PEDESTRIAN AND CYCLING NETWORK	16
3	OBJECTIVES & TARGETS	20
3.1	OBJECTIVES	20
3.2	TRAVEL PLAN TARGETS	21
4	ACTION PLAN	22
4.1	WORKPLACE TRAVEL ACTION PLAN MEASURES	22
4.2	COMMUNICATIONS STRATEGY	23
5	GOVERNANCE & SUPPORT	24
5.1	TRAVEL PLAN COORDINATOR	24
5.2	RESOURCING	24
6	MONITORING & REVIEW PROCESS	25
6.1	PLAN MAINTENANCE	25
6.2	TRAVEL MODE AUDIT REQUIREMENTS	25

Appendices

Appendix A: Transport Access Guide

Appendix B: Sample Travel Mode Questionnaire Form

1 Introduction

1.1 Purpose

Ason Group has been engaged by Meriden School to prepare a Sustainable Travel Plan (STP) package that includes a Green Travel Plan (GTP) and a Workplace Travel Plan (WTP) in relation to the development for Stage 1, Meriden School, Strathfield (the Site). This document relates to the specific the WTP which should be considered in conjunction with the GTP also provided as part of the wider STP package.

The STP package is provided in response to Key Issue 7 of the Secretary's Environmental Assessment Requirements (SEARs) of SSD 9692, dated 22 November 2018, which states:

"Details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan and specific Workplace travel plan) and the provision of facilities to increase the non-car mode share for travel to and from the site."

This WTP is intended to develop a package of site-specific measures to promote and maximise the use of sustainable travel modes, including walking, cycling, public transport and car sharing. In this regard, this plan sets out objectives and strategies to assist the Department of Planning and Environment (DPE) in achieving its goal to improve sustainability. It includes a review of existing transport choices and sets targets so that the effective implementation of the WTP can be assessed. These targets are to be realistic but ambitious enough to initiate substantive behavioural change to achieve the desired outcomes. The Plan shall be reviewed regularly as part of an ongoing review to ensure it remains relevant and reflective of current conditions.

In preparing this GTP, Ason Group has referenced the following key planning documents that are relevant to development at the Site:

- Future Transport Strategy 2056, TfNSW, March 2018.
- A Plan for Growing Sydney, Department of Planning & Environment, December 2014.
- NSW Long Term Transport Master Plan, TfNSW, December 2012
- Our Greater Sydney 2056: Eastern City District Plan, Greater Sydney Commission, March 2018
- Sydney's Walking Future, TfNSW, December 2013
- Sydney's Cycling Future, TfNSW, December 2013
- Sydney's Bus Future, TfNSW, December 2013

- Strathfield Consolidated Development Control Plan (SCDCP 2005)
- Strathfield Local Environmental Plan (2012)
- An Active Travel Plan for Strathfield (2016)

This WTP would ensure that the School achieves an overall reduction in travel by car. Further consultation with Council, TfNSW and D&PE will be required to refine this WTP which will be implemented in response to a suitable Condition of Consent associated with any Development Consent.

1.2 Site Location

The Site is located at Meriden School, 10-12 Redmyre Road, Strathfield and lies approximately 10 kilometres south-east of Parramatta and 11 kilometres west of the Sydney CBD. The School has three campus sites in close proximity to each other. **Figure 1** shows the three campuses in its local context and **Figure 2** shows the key roads providing access to the School.

It is located within the Local Government Authority of Strathfield Council.



Figure 1: Local Site Context

Source: AJ&C Architects



Figure 2: Site and Road Hierarchy

2 Site Audit & Data Collection

2.1 Proposed Development & Site Facilities

The proposed development relates to alterations and additions across the three school campuses. Each of the School campuses are shown in **Figure 3**, while reduced copies of the SSDA Site Plans prepared by Allen Jack + Cottier Architects are provided for context in **Figure 4**, **Figure 5** and **Figure 6**.



Figure 3: Precinct Diagram (relevant sites under assessment outlined in red)

Source: AJ&C Architects

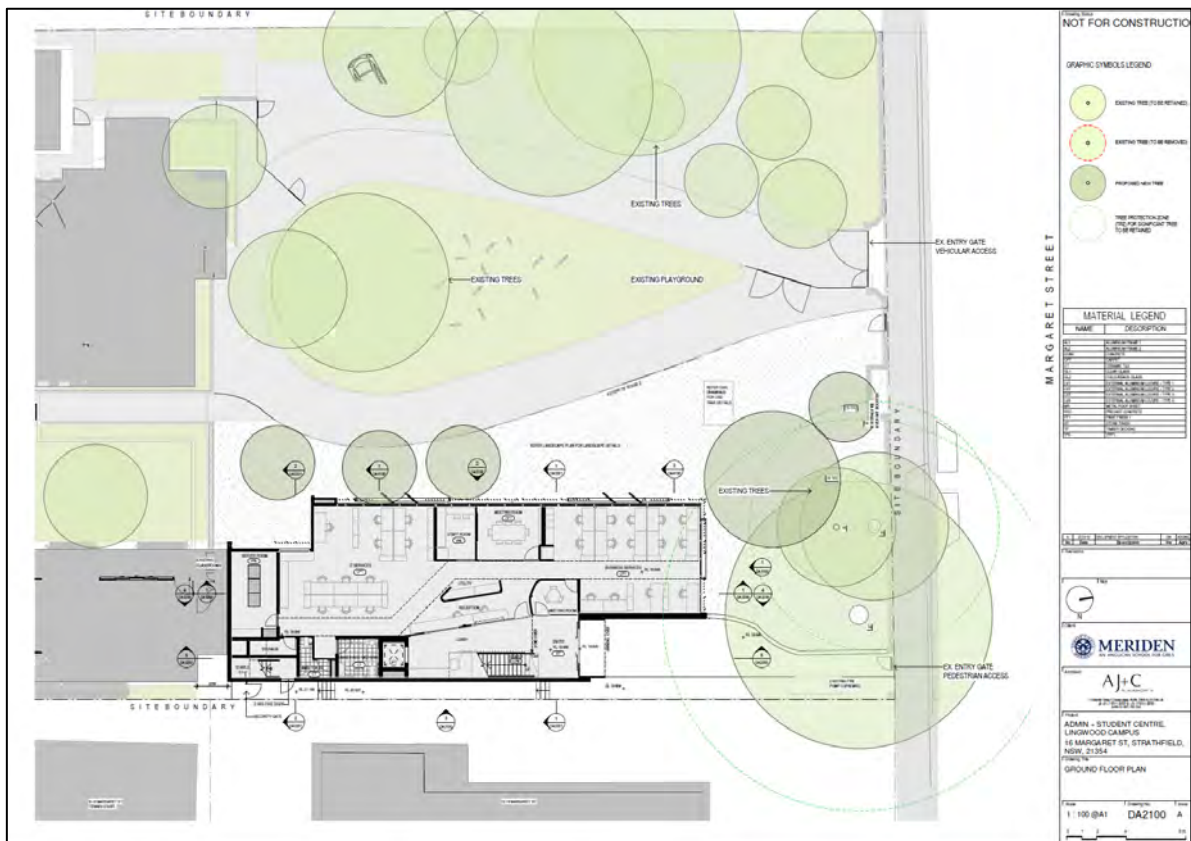


Figure 6: Admin & Student Centre Lingwood Campus Proposed Stage 2 Works

Key details for each building area are summarised below:

- **At the Senior Campus:** Demolition of the existing music building located towards the south-western corner of the Senior Campus, and construction of a new 3-storey building (above ground) incorporating a new music academy, drama facilities, music teaching rooms, and staff facilities alongside on-site landscaping.
- **At the Junior Campus:** Demolition of the existing residential dwelling at 4 Vernon Street to make way for a new landscaped playground area; the existing access and parking arrangements at the Junior Campus will be retained.
- **At the Lingwood Campus:** Demolition of the existing single storey Business Office building and construction of a new 2-storey A & S Building, to be designed with maximum flexibility to accommodate a wide range of uses, and to adapt with the demands of the school.

2.2 School Population

2.2.1 Existing Population

The School currently has a total student population of 1,254 students. For these students, the School currently employs a total of 242 staff, including 156 full-time staff and 86 part-time staff.

2.2.2 Proposed Population

The proposed new teaching facilities will result in an increased capacity of approximately 50 students and 2 staff across all three campuses. This is an increase of the school's current total capacity from approximately 1,500 students to approximately 1,550 students and a total of 244 staff across all three campuses.

2.3 Travel Mode Survey

Ason Group in consultation with the School prepared a short Travel Survey which was made available to all students and staff via the Survey Monkey application. The purpose of the Travel Survey was to determine key traffic and parking characteristics of existing students and staff, including:

- Travel mode for both the arrival and departure trip;
- For those students and staff driving or being driven, car occupancy;
- Arrival and departures peak periods;
- On and off-site parking demand.

Noting that the specific focus of this WTP is staff travel, the results of the School Survey have been documented in the GTP. Approximately 54% of the existing 242 staff responded to the Travel Survey; the results are discussed below.

2.4 Staff Travel Survey Results

2.4.1 Staff Travel Mode

Figure 9 provides details of the surveyed Staff travel modes, noting again that mode choice for Staff was generally the same for the arrival and departure trips.

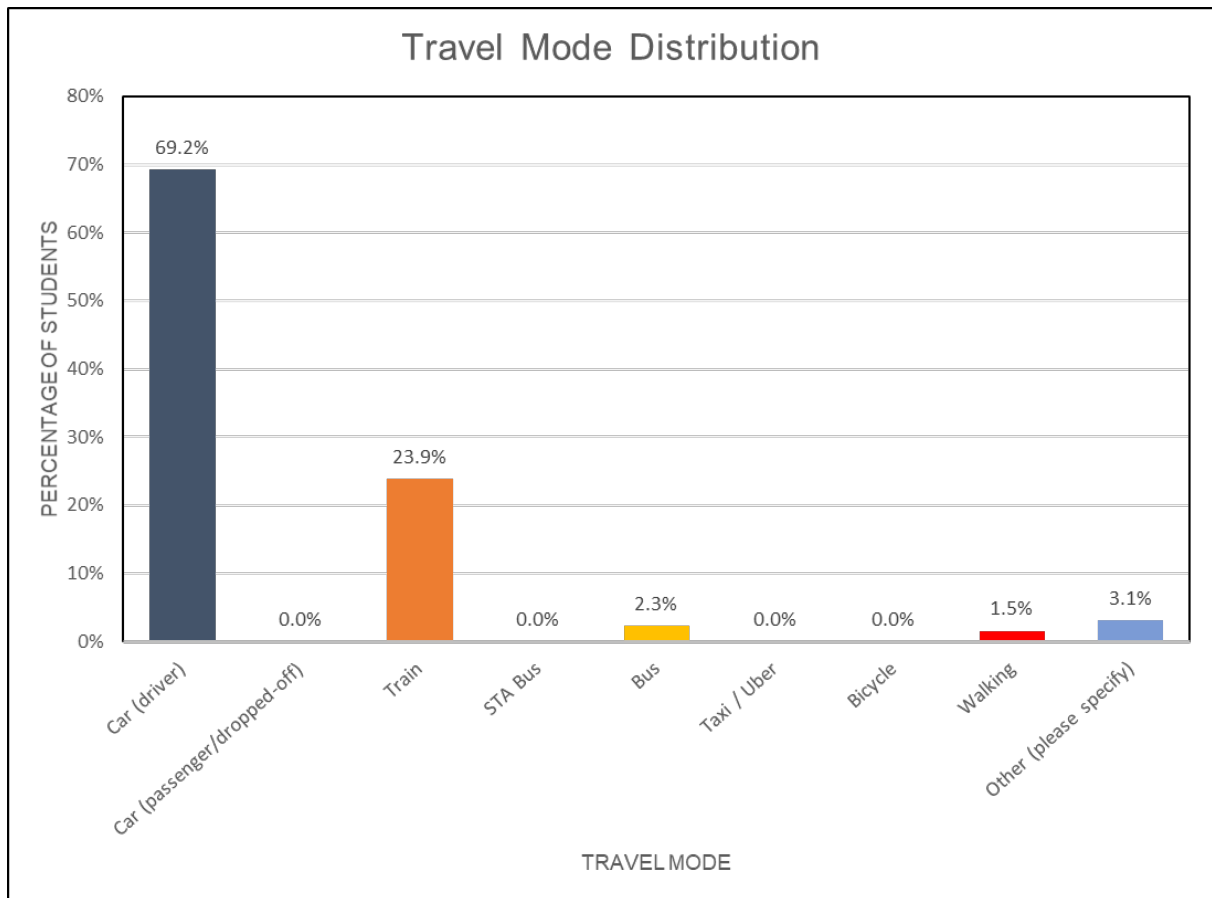


Figure 7: Staff Travel Mode

In summary, the Staff Travel Survey indicates that:

- Approximately 69% of Staff drive to / from the School; and
- Approximately 31% of Staff use alternative forms of transport to travel to / from the School.

Application of the Travel Survey results to the school's existing staff population results in the following **Table 2**, which provides a breakdown of existing travel modes for all staff. As can be seen, a significant number of staff currently drive to work.

Table 1: Existing Population Mode Share Summary

Travel Mode	Existing Mode Share of Staff	
	%	Number
Vehicle driver	69%	167
Dropped Off	0%	0
Taxi / Uber	0%	0
Train	24%	58
STA Bus	2%	5
Meriden School Bus	N/A	0
Bicycle	0%	0
Walk	2%	5
Other mode	3%	7
Total	100%	242

2.5 Traffic Generation

Taking into consideration the result of the Travel Surveys provides the vehicle movements (to and from) generated by the number of staff at the School:

- Staff: 334 vehicle movements per day.

The Travel Surveys illustrated that all staff who travel to the Site by car travel as sole car drivers. Therefore, a key aspect which needs to change is the level of car sharing which occurs.

2.6 Car Parking

The School currently provides 98 car parking spaces across the Senior and Junior campuses. Further to the completion of Lingwood Campus Stage 1 works, an additional 8 parking spaces will be provided on the Lingwood Campus; a total of 106 parking spaces would therefore be provided across the three School campuses.

2.7 Surrounding Public Transport Services

2.7.1 Rail Services

The *Integrated Public Transport Service Planning Guidelines*, Sydney Metropolitan Area (TfNSW, December 2013), states that train services influence the travel mode choices of areas within 800 metres walking distance (approximately 10 minutes) of a train station. In this regard, Strathfield Station is

located approximately 200m – 400m to the north of the School (based on the different campuses). Strathfield Station is a major rail hub that provides the following frequent services:

Table 2: Train Frequencies

Line – Station ¹	Eastbound	Westbound	Total
<i>T1 Line: Strathfield Station</i>			
Morning Peak Hour (6AM-9AM)	33	21	54
Evening Peak Hour (3PM-6PM)	35	29	64
<i>T2 Line: Strathfield Station</i>			
Morning Peak Hour (6AM-9AM)	30	25	55
Evening Peak Hour (3PM-6PM)	25	29	54
<i>T9 Line: Strathfield Station</i>			
Morning Peak Hour (6AM-9AM)	20	19	39
Evening Peak Hour (3PM-6PM)	20	19	39

In addition to the regular suburban trains, the station is also frequented by express trains that arrive approximately every 15 minutes. There are two express services that stop at Strathfield station, the BMT and the CCN. Therefore, the two-way frequencies of this express service are approximately 16 express services an hour.

The above table demonstrates that Strathfield railway station is well serviced in peak periods with trains arriving approximately every 2-3 minutes per direction.



Figure 8: Suburban Rail Network

2.7.2 Public Bus

The Public Transport Guidelines state that bus services influence the travel mode choices of areas within 400 metres walk (approximately 5 minutes) of a bus stop. In this regard, bus stops are located within 400 metres walking distance from the School in Redmyre Road, The Boulevard, Albert Road and near Strathfield Station, as shown in **Figure 11**. A major bus interchange is also located at Strathfield Station providing an accessible location to transfer to different buses services (and between rail and bus).

There are twelve bus routes within walking distance of the School, which are listed in **Table 5** below.

Table 3: Public Bus Services

Bus Number	Route	Average Weekday Service Frequency
407	Burwood to Strathfield	AM peak - 30 min PM peak - 30 min
408	Burwood to Rookwood Cemetery	AM peak – 1 hour PM peak – 1 hour
415	Campsie to Chiswick	AM peak – 20-30 min PM peak – 20-30 min
480	Strathfield to Domain via Homebush Road	AM peak – 20-30 min PM peak – 20-30 min
483	Strathfield to Domain via South Strathfield	AM peak – 20-30 min PM peak – 20-30 min
M90	Metrobus Burwood to Liverpool	AM peak – 10-15 min PM peak – 10-15 min
913	Strathfield to Bankstown via Greenacre	AM peak – 1 hour PM peak – 1 hour
914	Strathfield to Bankstown via Chullora	AM peak - 30 min PM peak - 30 min
450	Strathfield to Hurstville	AM peak - 15 min PM peak - 15 min
458	Burwood to Ryde	AM peak - 30 min PM peak - 30 min
525	Parramatta to Burwood via Olympic Park	AM peak – 20-30 min PM peak – 20-30 min
526	Burwood to Rhodes Shopping Centre	AM peak – 15-30 min PM peak – 15-30 min

With reference to Table 5, it is clear that the School has excellent access to bus services, noting that Routes 480, 415, 913, 914 and 450 operate via the Redmyre Road and The Boulevard bus stops in in close proximity to the School.

It can be seen that the bus stops within the vicinity of the Site have numerous connections throughout Sydney. An overview of the bus routes in close proximity to the Site is detailed in **Figure 11**.

2.8 Pedestrian and Cycling Network

The areas surrounding the School are well serviced in terms of pedestrian infrastructure with footpaths available on both sides of roads near the School. **Figure 12** details the key pedestrian crossings and **Figure 13** details the pedestrian desired routes to transport options.



Figure 10: Key Pedestrian Road Crossings



Figure 11: Desired Pedestrian Routes

An existing Cycle Path Map for Strathfield Council Area is included in **Figure 14**. Even though currently there are no direct connections from the Site to existing cycling system in Strathfield, the Active Travel Plan for Strathfield (2016) has proposed an on-road bicycle route (L4) along Redmyre Road and a shared path route (L6) along The Boulevard. These proposed bicycle routes will connect the Site to the Strathfield Town Centre, Homebush and Flemington train stations, which are serviced by T1, T2 T3 and T7 train lines. A map of proposed bicycle network in Strathfield is included in **Figure 15**.

As presented in the existing Cycle Path Map for Strathfield Council Area, there are no existing public bicycle racks provided in close proximity to the Site.

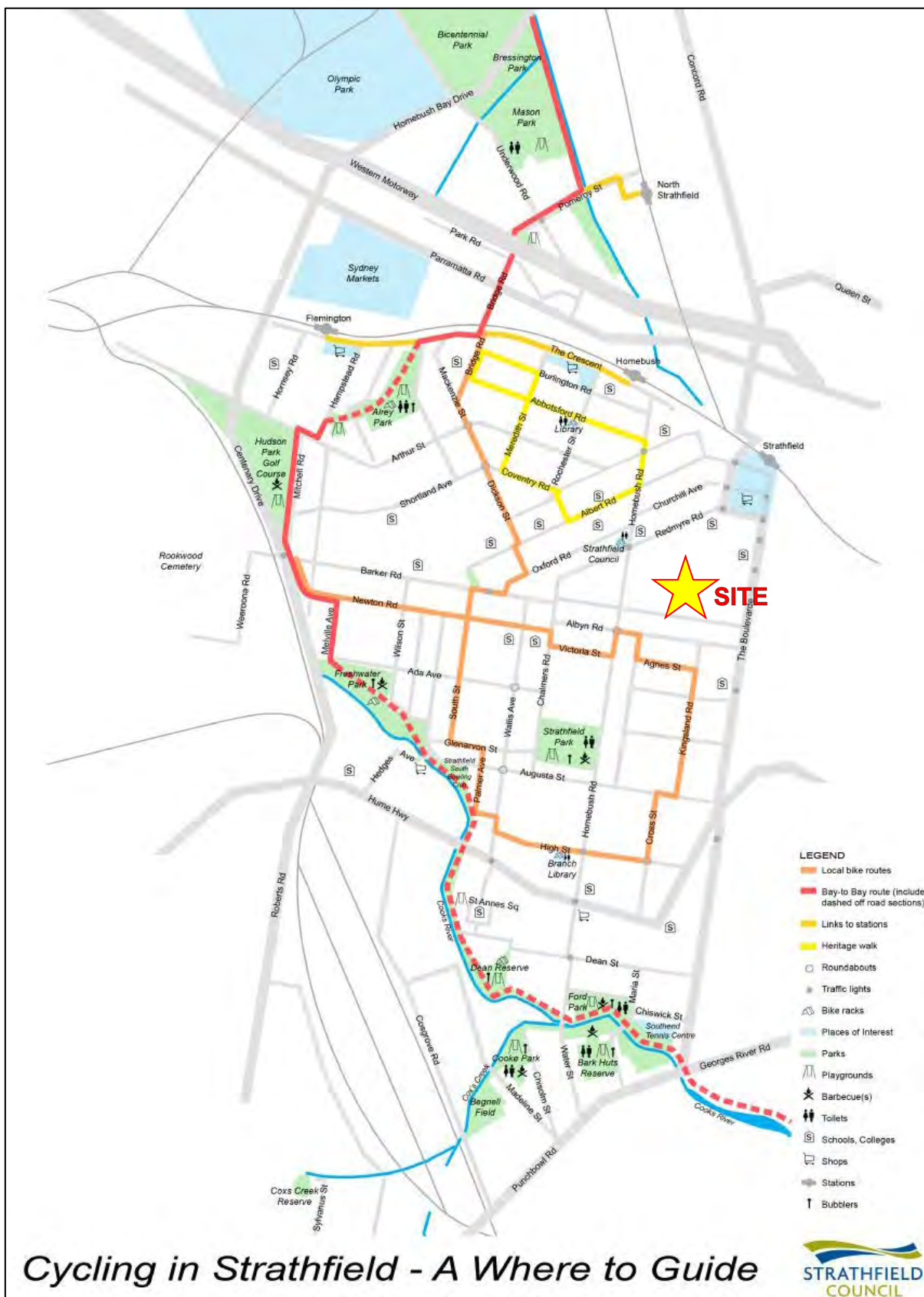


Figure 12: Existing Strathfield Cycling Routes

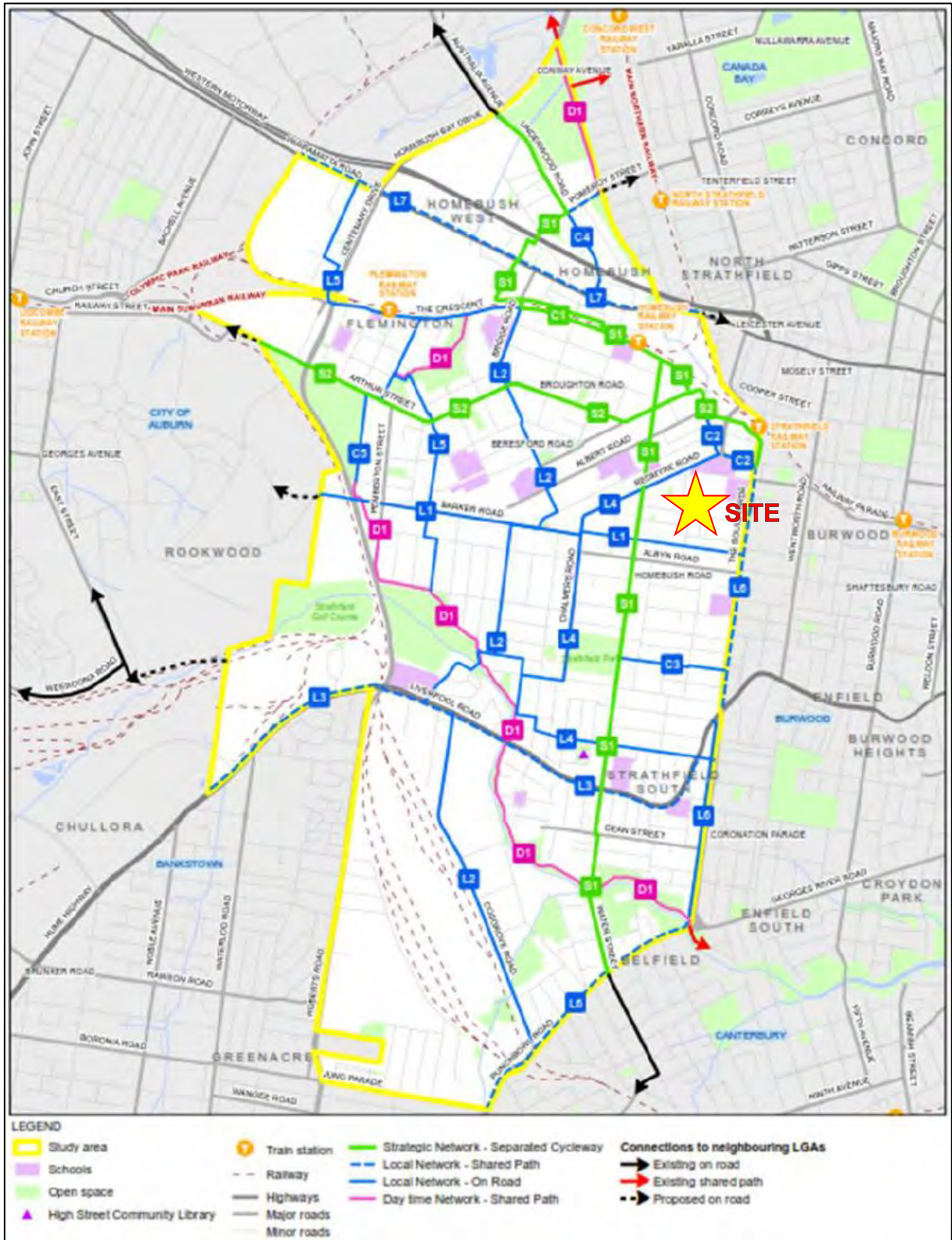


Figure 13: Proposed Strathfield Cycling Routes

3 Objectives & Targets

3.1 Objectives

The primary objectives of this WTP are to:

- Reduce the environmental footprint of the development
- Promote the use of 'sustainable transport' modes such walking and cycling, particularly for short-medium distance journeys and public transport
- Reduce reliance on the use of private vehicles for all journeys
- Encourage higher vehicle occupancy rates
- Create a safe and healthy environment during pick up and drop off times
- Encourage a healthier, happier and more active social culture

Having regard for the above, this Plan adopts the following movement hierarchy with priority given to 'active transport' followed by mass public transport and lastly the use of cars and other private vehicles.



Figure 14: Movement Hierarchy

3.2 Travel Plan Targets

It is well documented that restrictive car parking policy is beneficial to encouraging a travel behavioural change. Therefore the overall target for the STP package is to ensure that the parking provision (following completion of the proposed development) at the School is maintained at the existing level. To ensure that this overall target is achieved, mode share targets have been identified to ensure that sole car travel to the Site is discouraged, which in turn would decrease the demand for car parking.

With the above in mind, the proposed mode share targets for staff members are outlined in **Table 6**.

Table 4: Staff Mode Share Targets

Travel Mode	Existing Mode Share of Staff	Proposed Mode Share	Relative Change
Vehicle driver	69%	59%	-10%
Vehicle Passenger	0%	5%	+5%
Dropped Off	0%	0%	-
Taxi / Uber	0%	0%	-
Train	24%	27%	+3%
STA Bus	2%	3%	+1%
Bicycle	0%	1%	+1%
Walk	2%	2%	-
Other mode	3%	3%	-

The proposed mode share targets have been developed by considering the likelihood of increase of each travel mode, with a specific push to encourage ride sharing between staff members. It is noted that the proposed mode increase in the number of car passengers effectively equates to an average vehicle occupancy of 1.08 persons per car which is considered achievable.

Measures and strategies to achieve these targets are discussed in **Section 4**.

4 Action Plan

4.1 Workplace Travel Action Plan Measures

The following specific actions have been identified to aid achievement of the targets outlined in Section 3.2 for staff members. The School will undertake a review of the Action Plan and implement as best they can to achieve each action item. **Table 9** also identifies the body responsible for each action.

Table 5: Workplace Travel Action Plan Measures

Item No.	Action / Description	Responsibility
1. General		
1.1	Establish a campus transport coordinator which is to manage staff transport demands for their respective campuses	School
1.2	Preparation and maintenance of Workplace Travel Plan	School
1.3	Provide 'Travel Welcome Pack' for newly employed staff, highlighting alternate modes of transport other than use of a private vehicle.	School
1.4	Review of WTP as a regular item on the agenda for the School.	School
2. Walking and Cycling		
2.1	Improve cycle connectivity on surrounding roads	Council
2.2	Promote participation in the National Ride2Work Day activity	School
2.3	Provide clearly signposted cycle parking within the Site	School
2.4	Provision of footpaths on local roads in accordance with Strathfield Council DCP	Council
2.5	In accordance with the 1% cycling mode share target, ensure that appropriate bicycle parking spaces and End of Trip Facilities are provided within the Site	School
2.6	Running a cycling skills course to promote and teach cycling skills.	School
3. Public Transport		
3.1	Provide increased public transport services in response to increased development within the surrounding area	TfNSW / Council
3.2	Update the WTP to reflect changes to any train and bus routes and service times	School
3.3	Undertake a review to promote initiatives for staff using public transport.	School
3.4	Provision of Opal Cards with Credit for a period of free rides to increase public transport travel.	School
3.5	Public transport for School business travel to promote the mode as the first preference for staff travel.	School
4. Car Share		
4.1	Review initiatives for staff using car sharing services. This may include (but not limited to) the provision of 'pods' provided in closer proximity to the School	School
4.2	Facilitate engagement between staff with a view to encourage ride sharing for those staff that do require the use of private vehicles	School
4.3	Establish a car-pooling program to help staff find someone to share in their daily drive to School	School

Bicycle parking spaces will be provided on-site to support the Action Plan. Additional bicycle parking spaces may be recommended in the future; however, this would be subject to further review as part of the ongoing WTP maintenance which is discussed further below.

To encourage ride sharing between staff (to assist with Item 4.2 identified in Table 9), business management may consider the signposting of desirable parking spaces close to building entrances for use by vehicles with multiple occupants.

4.2 Communications Strategy

4.2.1 Welcome Packs

New staff shall be provided with a 'welcome pack' as part of the School induction process which includes the WTP and other information in relation to sustainable transport choices. This pack shall include a copy of the WTP as well as general information regarding the health and social benefits of active transport. Advice on where to find further information should also be included such as links to Sydney Cycleways website (<http://www.sydneycycleways.net>).

4.2.2 Accurate Transport Information

In addition to these 'welcome packs', a copy of the Travel Access Guide (TAG) shall be emailed to all staff. This TAG can be found in **Appendix A**. The TAG shall be presented in a form that is reflective of the commitment to achieving positive transport objectives. The TAG is not to be presented on loose paper.

4.2.3 Newsletters

School newsletters will be emailed to all staff every fortnight. Any new travel arrangements or green travel promotions can be broadcasted on this medium for up-to-date information.

5 Governance & Support

5.1 Travel Plan Coordinator

A representative from the School shall be responsible for:

- Implementation and promotion of the WTP action
- Monitoring the effectiveness of the WTP (refer to monitoring requirements outlined in Section 6) and ongoing maintenance of the Plan
- Provide advice in relation to transport-related subjects to staff and visitors, as required.
- Liaise with external parties (i.e. Council, public transport and car share operators) in relation to Travel Plan matters.

This role does not necessarily require full-time position; however, it shall be clearly designated among the key responsibilities of the estate management.

5.2 Resourcing

It is not anticipated that the maintenance of this WTP will have significant ongoing cost implications and shall be reviewed every 12 months by the School.

6 Monitoring & Review Process

6.1 Plan Maintenance

This Plan shall be subject to ongoing review and will be updated accordingly. Regular reviews will be undertaken by the on-site coordinator, as required. As a minimum, review of the WTP shall occur at a 2-year frequency, however an annual review would be preferred.

Key considerations regarding the review of the WTP shall be:

- Updating baseline conditions to reflect any changes to the transport environment in the vicinity of the site such as changes to bus services, new cycle routes etc. In this regard, review of the WTP may be undertaken on a more frequent basis.
- Tracking progress against proposed travel mode targets
- To identify any shortfalls and develop an updated action plan to address issues
- To ensure travel mode targets are updated (if necessary) to ensure they remain realistic but also ambitious.

6.2 Travel Mode Audit Requirements

Travel mode surveys will be undertaken to determine the proportion of persons travelling to/from the site by each transport mode. This will be in the form of annual travel mode questionnaire surveys to be completed by all persons attending the site, as far as practicable. A sample of a typical travel mode questionnaire form is included in **Appendix B**.

A physical survey recording the mode of travel for all employees entering and exiting the site shall be undertaken following a year of operation to establish a reliable baseline data set from which to base future iterations of this WTP. Subsequent surveys will primarily rely on the questionnaire survey methodology to reduce the costs associated with this data collection.

Appendix A

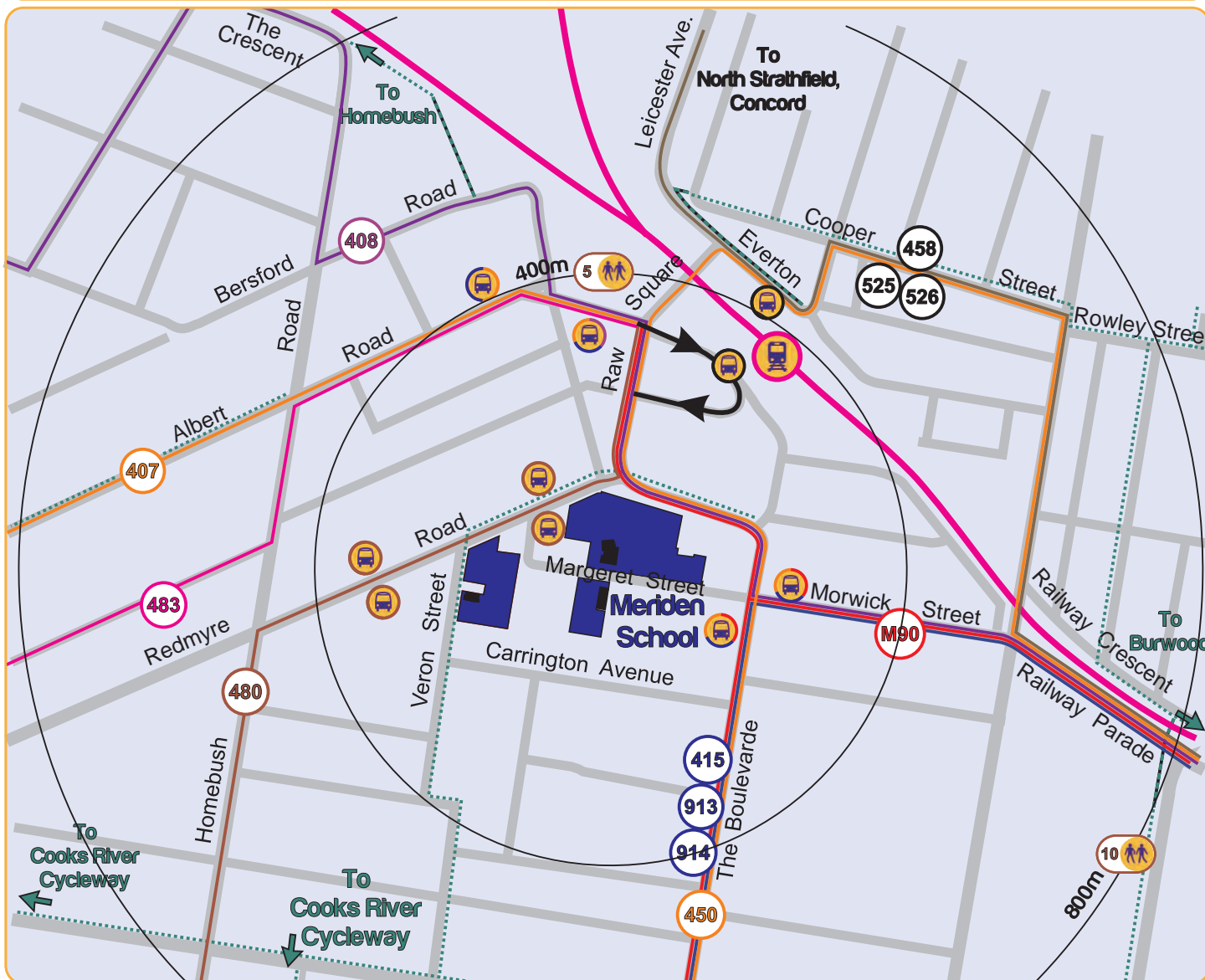
Transport Access Guide (TAG)

Travel Access Guide: Meriden School, Strathfield

Prepared by

asongroup

Info@asongroup.com.au | +612 9083 6601 | Suite 5.02, Level 5, 1 Castlereagh Street, Sydney NSW 2000



Public Transport - Sydney Buses

Route No.	Route Description	Earliest - Latest service / Frequency (minutes)	
		Monday to Friday	Saturday
407	Burwood to Strathfield	06:30 - 20:00 / 30	08:00 - 19:00 / 60
415	Campsie to Chiswick	05:30 - 20:20 / 30	07:00 - 19:50 / 30
480	Strathfield to Domain via Homebush Road	09:15 - 21:30 / 20-30	09:16 - 16:15 / 30
483	Strathfield to Domain via South Strathfield	06:00 - 00:00 / 20	07:20 - 23:10 / 30-60

Transdev bus services

M90	Metrobus Burwood to Liverpool	05:50 - 22:50 / 10-15/30	08:00 - 23:10 / 20
913	Strathfield to Bankstown via Greenacre	06:10 - 17:40 / 60	—
914	Strathfield to Bankstown via Chullora	06:10 - 19:30 / 30	—

Punchbowl Bus Company bus services

400	Strathfield to Hurstville	06:00 - 22:00 / 15/30	07:40 - 16:45 / 30
-----	---------------------------	-----------------------	--------------------

Sydney Buses services

405	Burwood to Ryde	05:40 - 23:40 / 30	05:45 - 23:45 / 20-30
525	Parramatta to Burwood via Olympic Park	06:00 - 00:00 / 30	07:50 - 22:40 / 30
526	Burwood to Rhodes Shopping Centre	05:45 - 22:40 / 30	08:00 - 00:00 / 30

Public Transport - Sydney Trains

	Strathfield Train Station	Earliest - Latest service / Frequency (minutes)	
		Monday to Friday	Saturday
	T1 Western North Shore Line	04:15 - 01:30 / 10-20	04:40 - 01:30 / 10-20
	T2 Inner West Leppington	04:15 - 01:30 / 10-20	04:40 - 01:30 / 10-20
	T9 Northern Line	04:15 - 01:30 / 10-20	04:40 - 01:30 / 10-20
	Central Coast Newcastle Line	04:50 - 00:30 / 30-60	06:30 - 00:40 / 30-60
	Blue Mountains Line	05:30 - 02:00 / 30-60	04:40 - 01:30 / 30-60

Active Transport

- On road cycle route
- Off-Road Shared Path

June 2019

Appendix B

Sample Travel Mode Questionnaire Form

Instructions for Surveyor(s)

1. The Survey Form (over page) should be completed by EVERY PERSON attending the site on a particular day.
2. This survey should be completed SEPARATELY for EACH TRIP undertaken

Travel Mode Questionnaire Survey Form

Date:

Approximate Time:

Q1. Are you one of / parent of the following?

- | | |
|---|---|
| <input type="checkbox"/> School staff | <input type="checkbox"/> Other (Please specify) |
| <input type="checkbox"/> Junior Student | |
| <input type="checkbox"/> Senior Student | |
| <input type="checkbox"/> Prep Student | |

Q2. How did you travel to / from School today?

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> Walked only | <input type="checkbox"/> Car share vehicle |
| <input type="checkbox"/> Bicycle only | <input type="checkbox"/> Motorcycle / scooter |
| <input type="checkbox"/> Train | <input type="checkbox"/> Car (dropped off/picked up) |
| <input type="checkbox"/> Public Bus | <input type="checkbox"/> Car (as driver) |
| <input type="checkbox"/> Meriden Bus | <input type="checkbox"/> Other (Please specify) |
| <input type="checkbox"/> Taxi/Uber | |

Q3. If you drove/driven to School today, how many other students/staff are normally in the car with you (excluding you)?

- | | |
|----------------------------|---|
| <input type="checkbox"/> 0 | <input type="checkbox"/> 4+ |
| <input type="checkbox"/> 1 | <input type="checkbox"/> Other (Please specify) |
| <input type="checkbox"/> 2 | |
| <input type="checkbox"/> 3 | |

[blank page]

Appendix B

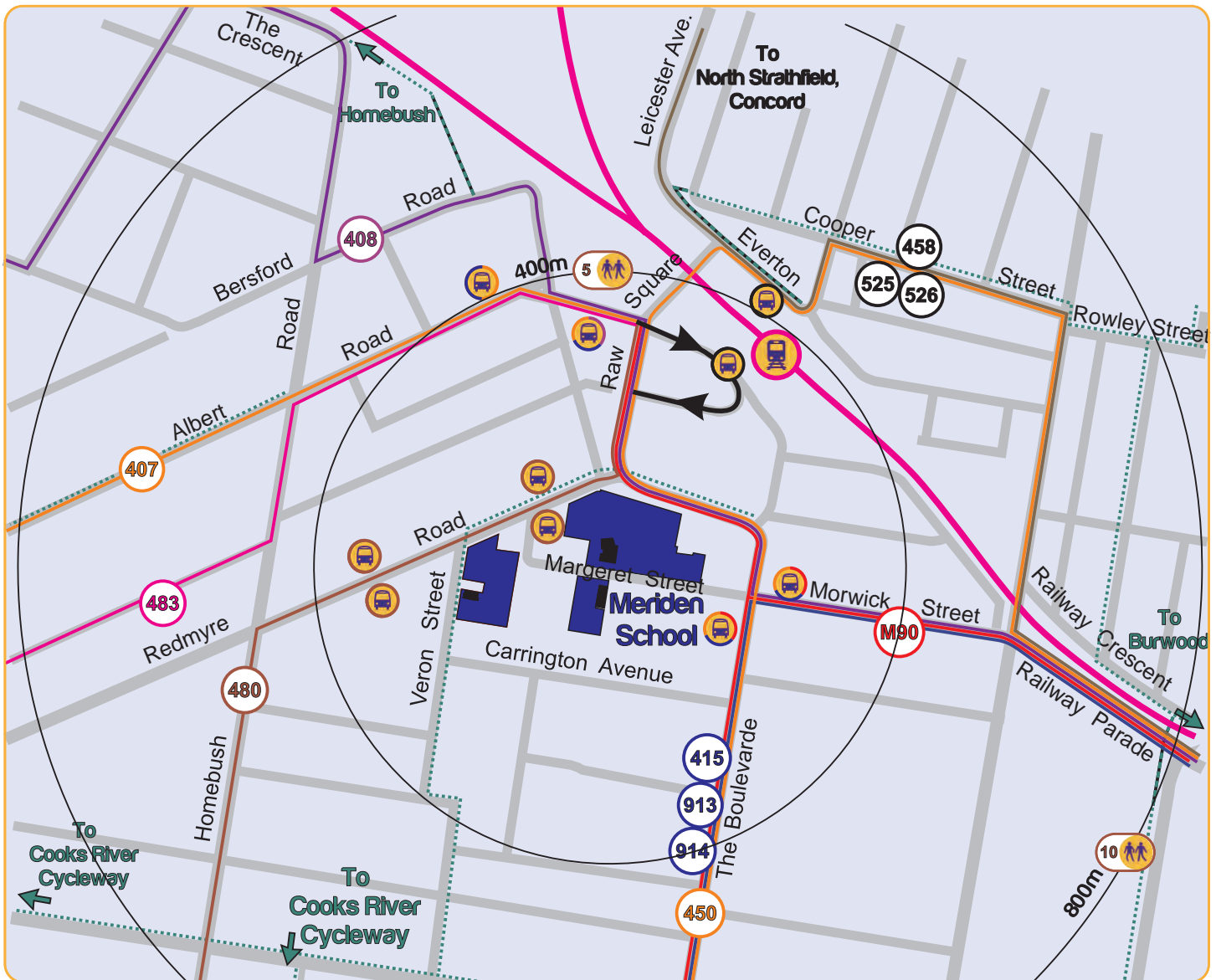
Transport Access Guide (TAG)

Travel Access Guide: Meriden School, Strathfield

Prepared by

asongroup

Info@asongroup.com.au | +612 9083 6601 | Suite 5.02, Level 5, 1 Castlereagh Street, Sydney NSW 2000



Public Transport - Sydney Buses

Route No.	Route Description	Earliest - Latest service / Frequency (minutes)	
		Monday to Friday	Saturday
407	Burwood to Strathfield	06:30 - 20:00 / 30	08:00 - 19:00 / 60
415	Campsie to Chiswick	05:30 - 20:20 / 30	07:00 - 19:50 / 30
480	Strathfield to Domain via Homebush Road	09:15 - 21:30 / 20-30	09:16 - 16:15 / 30
483	Strathfield to Domain via South Strathfield	06:00 - 00:00 / 20	07:20 - 23:10 / 30-60

Transdev bus services

M90	Metrobus Burwood to Liverpool	05:50 - 22:50 / 10-15/30	08:00 - 23:10 / 20
913	Strathfield to Bankstown via Greenacre	06:10 - 17:40 / 60	—
914	Strathfield to Bankstown via Chullora	06:10 - 19:30 / 30	—

Punchbowl Bus Company bus services

400	Strathfield to Hurstville	06:00 - 22:00 / 15/30	07:40 - 16:45 / 30
-----	---------------------------	-----------------------	--------------------

Sydney Buses services

405	Burwood to Ryde	05:40 - 23:40 / 30	05:45 - 23:45 / 20-30
525	Parramatta to Burwood via Olympic Park	06:00 - 00:00 / 30	07:50 - 22:40 / 30
526	Burwood to Rhodes Shopping Centre	05:45 - 22:40 / 30	08:00 - 00:00 / 30

Public Transport - Sydney Trains

	Strathfield Train Station	Earliest - Latest service / Frequency (minutes)	
		Monday to Friday	Saturday
	T1 Western North Shore Line	04:15 - 01:30 / 10-20	04:40 - 01:30 / 10-20
	T2 Inner West Leppington	04:15 - 01:30 / 10-20	04:40 - 01:30 / 10-20
	T9 Northern Line	04:15 - 01:30 / 10-20	04:40 - 01:30 / 10-20
	Central Coast Newcastle Line	04:50 - 00:30 / 30-60	06:30 - 00:40 / 30-60
	Blue Mountains Line	05:30 - 02:00 / 30-60	04:40 - 01:30 / 30-60

Active Transport

- On road cycle route
- Off-Road Shared Path

June 2019

Appendix C

Sample Travel Mode Questionnaire Form

Instructions for Surveyor(s)

1. The Survey Form (over page) should be completed by EVERY PERSON attending the site on a particular day.
2. This survey should be completed SEPARATELY for EACH TRIP undertaken

Travel Mode Questionnaire Survey Form

Date:

Approximate Time:

Q1. Are you one of / parent of the following?

- | | |
|---|---|
| <input type="checkbox"/> School staff | <input type="checkbox"/> Other (Please specify) |
| <input type="checkbox"/> Junior Student | |
| <input type="checkbox"/> Senior Student | |
| <input type="checkbox"/> Prep Student | |

Q2. How did you travel to / from School today?

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> Walked only | <input type="checkbox"/> Car share vehicle |
| <input type="checkbox"/> Bicycle only | <input type="checkbox"/> Motorcycle / scooter |
| <input type="checkbox"/> Train | <input type="checkbox"/> Car (dropped off/picked up) |
| <input type="checkbox"/> Public Bus | <input type="checkbox"/> Car (as driver) |
| <input type="checkbox"/> Meriden Bus | <input type="checkbox"/> Other (Please specify) |
| <input type="checkbox"/> Taxi/Uber | |

Q3. If you drove/driven to School today, how many other students/staff are normally in the car with you (excluding you)?

- | | |
|----------------------------|---|
| <input type="checkbox"/> 0 | <input type="checkbox"/> 4+ |
| <input type="checkbox"/> 1 | <input type="checkbox"/> Other (Please specify) |
| <input type="checkbox"/> 2 | |
| <input type="checkbox"/> 3 | |

[blank page]

Appendix C

Agency Consultation

From: [Ken Ho](#)
To: [Rebecca Butler-Madden](#)
Subject: RE: Meriden School SSDA I AG0686
Date: Friday, 10 May 2019 1:26:14 PM

Hi Rebecca,

Based on the information provided below and at this stage, I would have no comment.

Comment would be provided upon review of the EIS exhibition.

Regards,

Ken Ho
Transport Planner
Freight, Strategy and Planning
Transport for NSW

From: Rebecca Butler-Madden [mailto:Rebecca.BMadden@asongroup.com.au]
Sent: Thursday, 9 May 2019 3:26 PM
To: Ken Ho
Subject: RE: Meriden School SSDA I AG0686

Hi Ken,

Have you had the opportunity to review the below yet?

Kind Regards,

Rebecca Butler-Madden
Traffic Engineer | Ason Group

M: +61 406 421 154 | **T:** +61 2 9083 6601 | **E:** rebecca.bmadden@asongroup.com.au
A: Suite 5.02, Level 5, 1 Castlereagh Street, Sydney NSW 2000

From: Rebecca Butler-Madden
Sent: Friday, 3 May 2019 12:24 PM
To: Ho, Ken <Ken.Ho@transport.nsw.gov.au>
Cc: Ozinga, Mark <mark.ozinga@transport.nsw.gov.au>
Subject: Meriden School SSDA I AG0686

Hi Ken,

I hope that you are well.

We are the lead traffic consultants working on the State Significant Development Application for the proposed alterations and additions (the Proposal) to Meriden School at Redmyre Road and Margaret Street in Strathfield of which you provided SEARS for (attached) (ref: SSD 9692).

I wanted to relay to you the key aspects of our assessment and findings to date to ensure that we have covered your concerns provided on the attached and that there was no further advice from TfNSW until such a time that you have been able to review the full SSDA submission. The below provides an overview of our study, which we will submit with the SSDA in the form of a Transport Assessment.

Trip and Traffic Generation

It is noted that the Proposal could result in an additional 50 students across the School's 3 Sites with

no additional staff required. It is not expected that this increase in students would actually be realised in the immediate years following its completion. Therefore the additional trips associated with the Proposal would not be material with the following trips expected during the School travel peak hours:

- AM – 46 additional student trips (25 students travelling by car)
- PM – 41 additional student trips (23 students travelling by car).

This equates to:

- 32 additional vehicle trips in the morning peak hour; and
- 30 additional vehicle trips in the afternoon peak hour; and

We have conducted SIDRA intersection analysis of the key intersections around the Site, which has found that this number of trips would not materially impact the operation of the road network.

The greatest increase in non-car trips would be by train, with an additional 10 and 9 student trips in the morning and evening peak hours respectively.

TfNSW SEARs Input

Your letter (attached) has requested details of pedestrian accessibility, pedestrian demand and the safety of the pedestrian connections between the campuses. I can confirm that we considered this in our study.

If you require more information at this time, please let me know.

SEARs consultation requirement

The SEARs require us to consult with TfNSW. Given the nominal numbers of additional students expected as a result of the Proposal, we believe we have adequately catered for each of the SEARs. However, I welcome any further comment that you may have at this point on the Proposal.

I would suggest that the appropriate way forward would be for TfNSW to review the SSDA package once submitted as part of the formal review process and provide comments in response.

However, if you would like to discuss further, please let me know.

Kind Regards,

Rebecca Butler-Madden

Traffic Engineer | Ason Group

M: +61 406 421 154 | **T:** +61 2 9083 6601 | **E:** rebecca.bmadden@asongroup.com.au

A: Suite 5.02, Level 5, 1 Castlereagh Street, Sydney NSW 2000

This email is intended only for the addressee and may contain confidential information. If you receive this email in error please delete it and any attachments and notify the sender immediately by reply email. Transport for NSW takes all care to ensure that attachments are free from viruses or other defects. Transport for NSW assume no liability for any loss, damage or other consequences which may arise from opening or using an attachment.

 **Consider the environment. Please don't print this e-mail unless really necessary.**

Rebecca Butler-Madden

Subject: FW: Meriden School SSDA I AG0686 I Attention Narelle Gonzales

From: GONZALES Narelle M

Sent: Friday, 10 May 2019 2:59 PM

To: john.mulhaire@asongroup.com.au

Subject: RE: Meriden School SSDA I AG0686 I Attention Narelle Gonzales

Good Afternoon John,

Apologies for not getting back to you sooner, I did not realise the simplicity of your request.

Thank you for the update - at this stage Roads and Maritime services would have no further comment. A more comprehensive assessment will occur at SSDA stage.

If you have any further queries please find me details below.

Regards,
Narelle

Narelle Gonzales
Development Assessment Officer
South East Precinct | Sydney Division

P: 0409 541 879 | E: narelle.m.gonzales@rms.nsw.gov.au
W: www.rms.nsw.gov.au

Every journey matters

Roads and Maritime Services
Level 5/27 Argyle Street Parramatta NSW 2150

From: John Mulhaire [<mailto:john.mulhaire@asongroup.com.au>]

Sent: Friday, 10 May 2019 12:52 PM

To: PEGG Brendan J

Cc: Rebecca Butler-Madden; Development Sydney

Subject: RE: Meriden School SSDA I AG0686 I Attention Narelle Gonzales

Hi Brendan,

Thank you for your time on the phone. As discussed, it would be greatly appreciated if we could speak to Narelle in order to expediate the RMS response if at all possible. Or, if there is any potential to receive a response either today or Monday.

Available on the mobile if required. Thanks Brendan.

Regards,

John Mulhaire
Principal Traffic Engineer | Ason Group

T: +61 2 9083 6601 | M: +61 405 217 975 | E: john.mulhaire@asongroup.com.au
A: Suite 5.02, Level 5, 1 Castlereagh Street, Sydney NSW 2000

From: Rebecca Butler-Madden
Sent: Friday, 3 May 2019 2:34 PM
To: Development Sydney <Development.Sydney@rms.nsw.gov.au>
Cc: PEGG Brendan J <brendan.j.pegg@rms.nsw.gov.au>
Subject: Meriden School SSDA I AG0686 I Attention Narelle Gonzales

Hi,

I hope that you are well.

The below is in reference to the SEARs for an SSDA for the Meriden School Proposal. I'd appreciate it if you could pass this onto the appropriate person – as can be seen from the attached, the relevant person has been identified as Narelle Gonzales:

We are the lead traffic consultants working on the State Significant Development Application for the proposed alterations and additions (the Proposal) to Meriden School at Redmyre Road and Margaret Street in Strathfield of which you provided SEARS for (attached) (ref: SSD 9692).

It is noted in your SEARs Letter that you were in agreement with the proposed SEARs. However, we are required by the SEARs to consult with you. Therefore I wanted to relay to you the key aspects of our assessment and findings to date to ensure that we satisfy this requirement and that there was no further comment from RMS until such a time that you have been able to review the full SSDA submission. The below provides an overview of our study, which we will submit with the SSDA in the form of a Transport Assessment.

Trip and Traffic Generation

It is noted that the Proposal could result in an additional 50 students across the School's 3 Sites with no additional staff required. It is not expected that this increase in students would actually be realised in the immediate years following its completion. Therefore the additional trips associated with the Proposal would not be material with the following trips expected during the School travel peak hours:

- AM – 46 additional student trips (25 students travelling by car)
- PM – 41 additional student trips (23 students travelling by car).

This equates to:

- 32 additional vehicle trips in the morning peak hour; and
- 30 additional vehicle trips in the afternoon peak hour; and

We have conducted SIDRA intersection analysis of the key intersections around the Site, which has found that this number of trips would not materially impact the operation of the road network.

The greatest increase in non-car trips would be by train, with an additional 10 and 9 student trips in the morning and evening peak hours respectively.

SEARs consultation requirement

As noted, the SEARs require us to consult with RMS. Given the nominal numbers of additional students expected as a result of the Proposal, we believe we have adequately catered for each of the SEARs. However, I welcome any further comment that you may have at this point on the Proposal.

I would suggest that the appropriate way forward would be for RMS to review the SSDA package once submitted as part of the formal review process and provide comments in response.

However, if you would like to discuss further, please let me know.

Kind Regards,

Rebecca Butler-Madden
Traffic Engineer | Ason Group

M: +61 406 421 154 | **T:** +61 2 9083 6601 | **E:** rebecca.bmadden@asongroup.com.au
A: Suite 5.02, Level 5, 1 Castlereagh Street, Sydney NSW 2000

Before printing, please consider the environment

IMPORTANT NOTICE: This email and any attachment to it are intended only to be read or used by the named addressee. It is confidential and may contain legally privileged information. No confidentiality or privilege is waived or lost by any mistaken transmission to you. Roads and Maritime Services is not responsible for any unauthorised alterations to this email or attachment to it. Views expressed in this message are those of the individual sender, and are not necessarily the views of Roads and Maritime Services. If you receive this email in error, please immediately delete it from your system and notify the sender. You must not disclose, copy or use any part of this email if you are not the intended recipient.