4 March 2025

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TO	Melanie Corke; Business Development Manager (Community Ventures)
FROM	William Xie; Traffic Engineer (Ason Group) Emily Duan; Traffic Engineer (Ason Group)
CC	Amy Cropley; Associate Planner (EPM Projects) Ali Rasouli; Principal Lead (Ason Group)
SUBJECT	P0760A Santa Sophia Catholic College, Gables – Response to DPHI Test of Adequacy Car Parking Feedback

Dear Melanie,

This Technical Note (TN) has been prepared to further review the car parking implications of the proposed Modification to the approved development (SSD-9772) of Santa Sophia Catholic College (the School), located at 1 Lakefront Crescent, Gables (the Site). Particularly, this TN has been prepared in response to feedback from the Department of Planning, Housing and Infrastructure (DPHI) from a Test of Adequacy (ToA) submitted, with the feedback reproduced below:

Car parking: *The applicant has submitted a technical note (completed by Ason Group; dated 16 July 2024) assessing the traffic and transport implications of the proposed modification. It is noted that a car park utilization survey was conducted on 14 May 2024, covering the period from 6:00 AM to 6:30 PM. However, the data provided is insufficient to confirm that the observed conditions are representative of daily occurrences. As such, the applicant is requested to either extend the survey period to include additional data or provide further operational details demonstrating the survey data is true representation.*

For context, this Section 4.55 Modification 3 (the MOD 3) predominantly involves increase of the student capacity at the existing Ambrose Ealy Learning Centre (ELC), located within the School. There is a high demand for expanded childcare services, and this increase in students is primarily to address this existing issue.

A previous technical note produced by Ason Group, *S4.55 MOD 3_Santa Sophia Catholic College, Gables*, dated 16 July 2024, reference: P0760Atn01v01 (herein referred to as the Previous TN), summarised the traffic and transport implications of the proposed MOD 3. This above feedback from DPHI has followed in response to this technical note and reference should be generally made to it.

We have completed further analysis to address this above feedback, with this TN documenting our findings.

Background

For the Previous TN, parking surveys were undertaken for the existing Ambrose car park next to the ELC building, which is shown below in **Figure 1**. The existing Ambrose car park provides services for parents to drop off and pick up of children attending Ambrose Activities and Ambrose Ealy Learning. It currently allows maximum 10 minutes parking at periods of 7:30am – 9:00am and 2:00pm – 5:00pm. Considering this maximum parking period, each parking space can theoretically serve 6 vehicles per hour, allowing the entire car park to accommodate 60 vehicles in one hour, or 15 vehicles every 15 minutes.

Figure 1: Ambrose Car Park

In response to the above feedback from DPHI, additional parking utilisation surveys have been undertaken for a length of two weeks as detailed in the following dot points:

- 18 to 22 November 2024
- 25 to 29 November 2024

Survey periods covered 6:00AM to 6:30PM, every day.

Parking Analysis

Analysis of the parking survey data has been undertaken with a breakdown of the maximum parking demand per 15-minute period from the 10 days surveyed shown in **Figure 2**. Full survey results are shown in **Appendix A**.

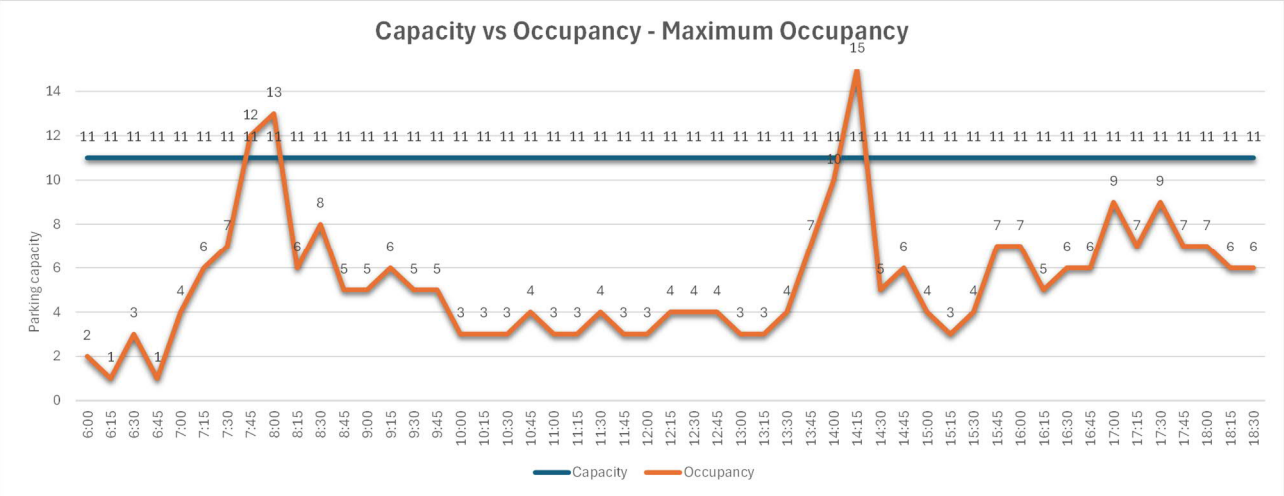

Figure 2: Maximum Parking Demand Breakdown

Some key takeaways are documented as follows:

- Generally, during the survey periods, it is noted that the demand does not meet or exceed the maximum capacity. Suggesting that the existing supply of 11 spaces (inclusive of 1 accessible space) are sufficient, with 4 car parking spaces available for the additional 20 students.
- There are few cases where the demand for parking exceeds the maximum capacity of 11 spaces (inclusive of 1 accessible space) during the surveyed periods. These are detailed as follows:
  - During the morning drop off period, there are 6 instances where the parking demand meets or exceeds the maximum capacity (with demand reaching up to 13 spaces) between 7:45-8:00 AM.
  - During the afternoon pick up period there are 6 instances where parking demand exceeds the maximum capacity (with demand reaching up to 15 spaces) at 2:15 PM.
- As advised by the ELC that the school traffic also currently uses the ELC designated car park.

Following consultation with Community Ventures and EPM projects, we have found out the main reason for this occurrence is undesirable parking currently observed by the School.

It is noted that an Operational Transport and Access Management Plan (OTAMP) (0760r02v5) has previously been prepared and approved. This plan outlines the designated areas for school drop-off and pick-up, and specifies that the ELC car park (Ambrose Car Park) is separate from these areas. The OTAMP is provided in **Appendix B**.

Additionally, we propose the following parking management measures to be implemented to ensure that the demand for parking does not exceed the capacity which will be detailed in the following section.

Parking Management Measures

To manage the parking demand, we propose to prepare a Parking Management Plan for the ELC to manage the Ambrose Car Park at post modification stage. There are various potential measures that can be implemented which are focused on the following:

- Adjustment of the parking duration of the Ambrose Car Park,
- Educating the School parents to not park in the Ambrose Car Park, and
- Other Management Measures.

Adjustment of Parking Duration

With regards to the first potential measure, limiting the maximum parking duration to 5 minutes would allow for more efficient use of the car park which could mitigate this issue observed. The current *Guide to Transport Assessment*, *TS 00085, Version 1.1*, dated November 2024, does not specify an average length of stay for pick up drop off operations but the previous *Guide to Traffic Generating Developments*, dated October 2002, states that the RTA's surveys indicate an average length of stay of 6.8 minutes for parents dropping off and picking up children at childcare centres. It is recommended that the project team consider reducing the maximum parking duration to 5 minutes which is similar to the above length of stay observed. This adjustment could potentially double the efficiency of the car park, allowing it to accommodate 30 vehicles every 15 minutes, readily addressing the required increased demand over the existing demand.

One way to ensure that this maximum duration is adhered initially (e.g. the first two months of implementing such measures) to would be to have a staff member manage the car park during AM / PM peak hours to ensure parents do not exceed the allotted time.

Noting the Ambrose car park is required to provide additional 4 car spaces for parents to satisfy relevant parking requirement, doubling the efficiency with the implementation of this measure would allow the car park to meet the requirement.

This management measure can readily be imposed through a suitable Condition of Consent for the MOD 3.

Education of School Parents

There should be an emphasis on educating school parents to encourage them to not park within the Ambrose Car Park. By doing so the capacity for the car park can be maximised for relevant visitors i.e. parents using it to pick up or drop off their kids at the ELC. As a means to formalise this, the School has prepared a letter confirming that they will actively discourage parents of the School from using the Ambrose Car Park which is shown in **Appendix C**.

Other Management Measures

Further to the above, there can be other management measures implemented to further support the above measures detailed which can be further investigated by the School. Such measures can include:

- A service control device (boom gate) is proposed for installation at the Ambrose Car Park access to prevent unauthorised cars from entering. It is expected that the installation of the boom gate will be a Condition of Consent upon approval.

- A car park monitoring system to ensure that the maximum parking durations are met by parents picking up and dropping off kids and using the Ambrose Car Park. Such systems would allow for better monitoring and management of the car park.

Conclusion

Based on the above assessment of parking survey data across two work weeks, it is observed that the parking demand does exceed the parking capacity (noted to be 11 spaces, including 1 accessible space) of the Ambrose Car Park in various instances in the morning drop off and afternoon pick up periods.

However, a Parking Management Plan can be prepared for the ELC to manage the Ambrose Car Park at post modification stage. There are various parking management measures that can be implemented to address this issue.

Should you have any questions or wish to discuss the above further, please contact the undersigned or Ali Rasouli from our office.

Yours sincerely,

Emily Duan

Traffic Engineer

E emily.duan@asongroup.com.au

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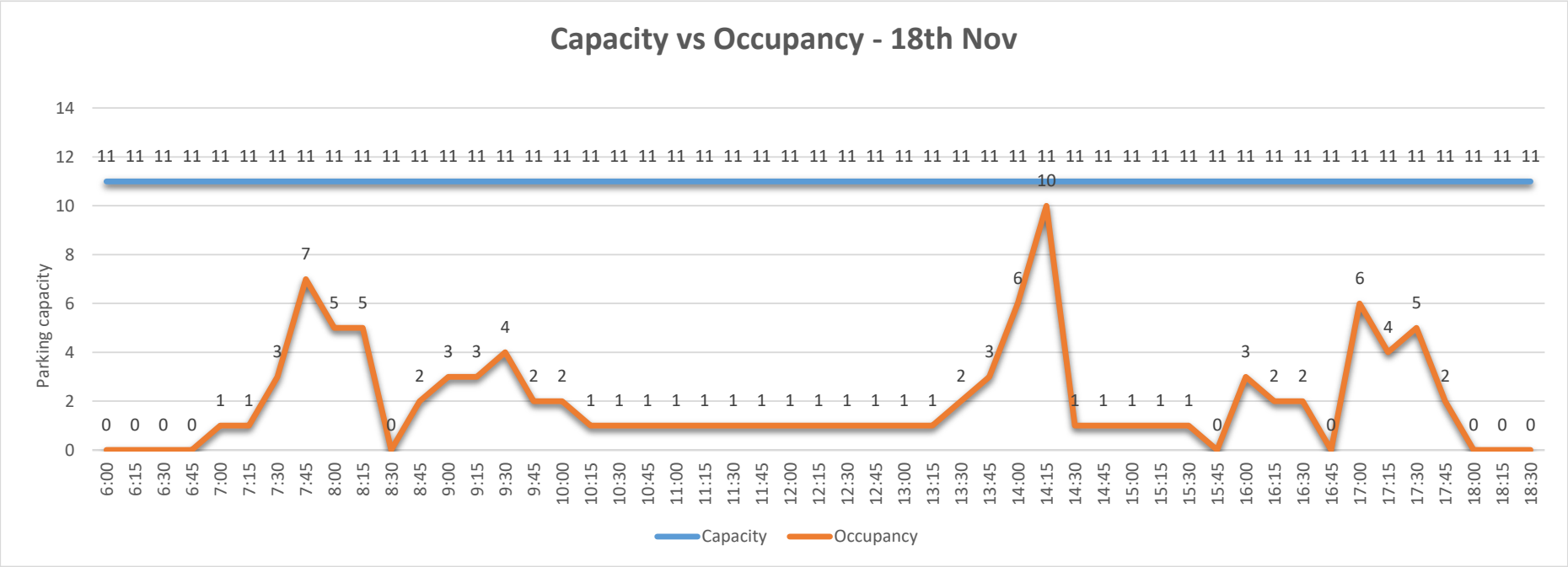
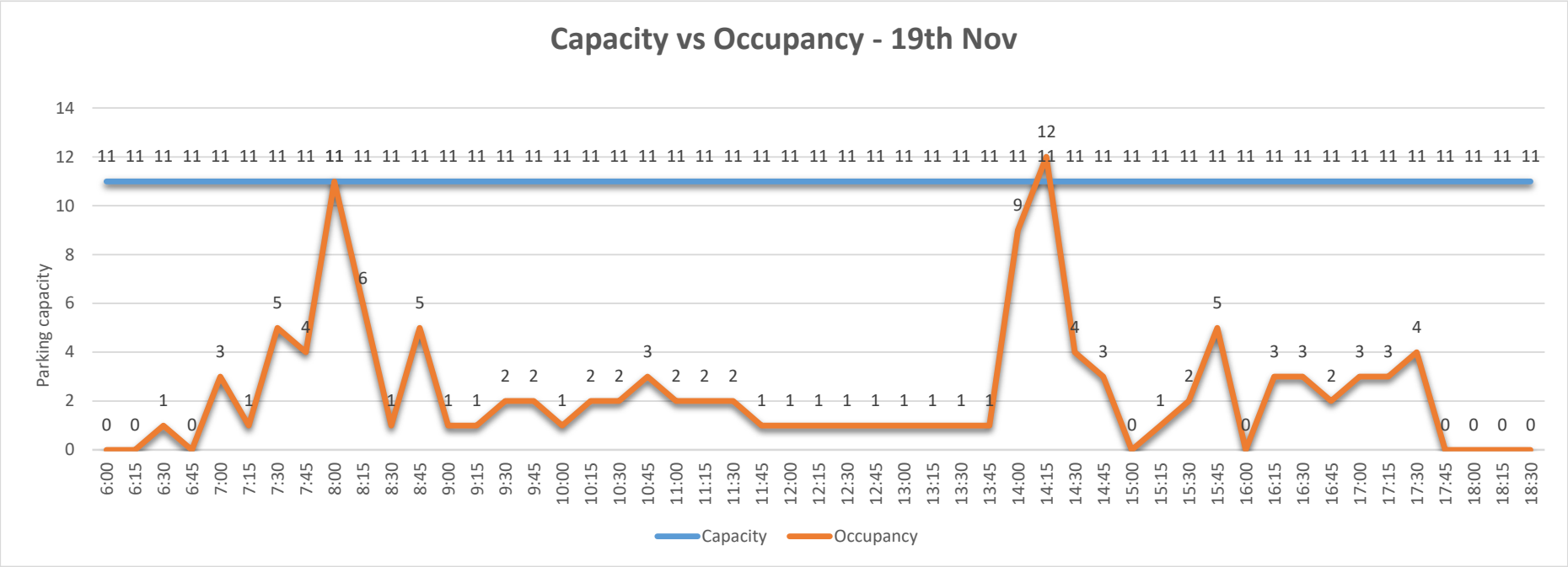
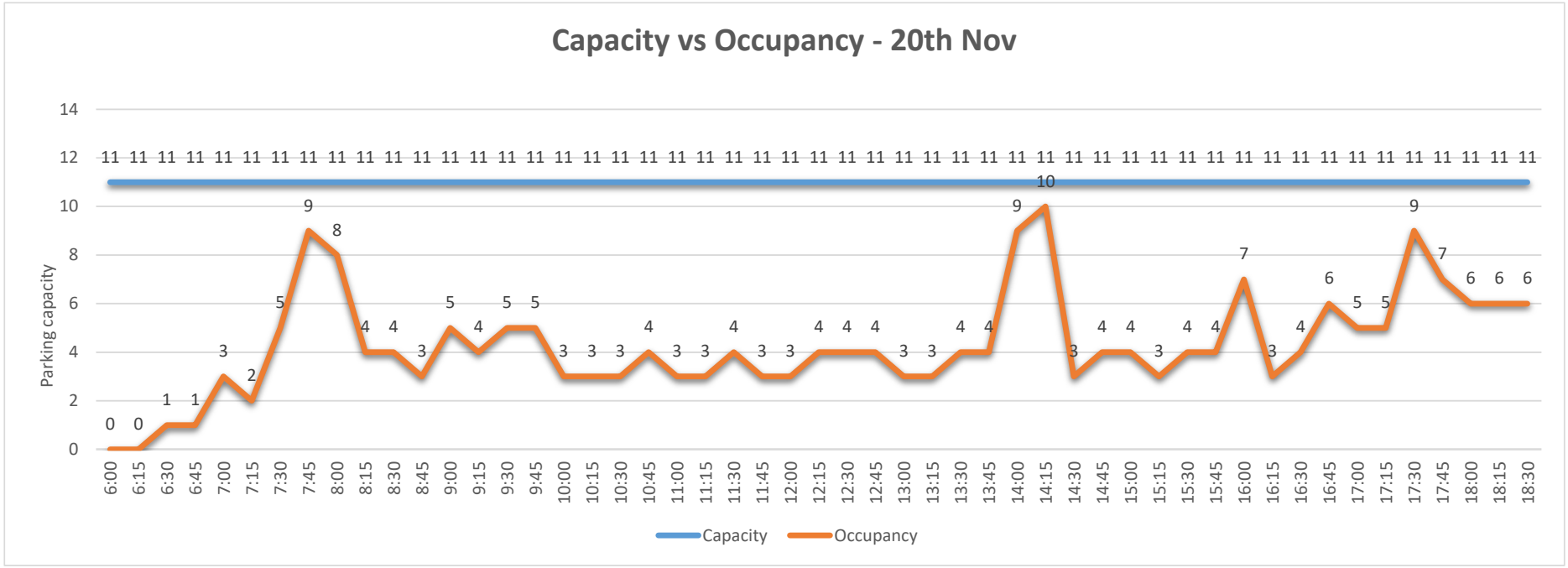
Attachments:

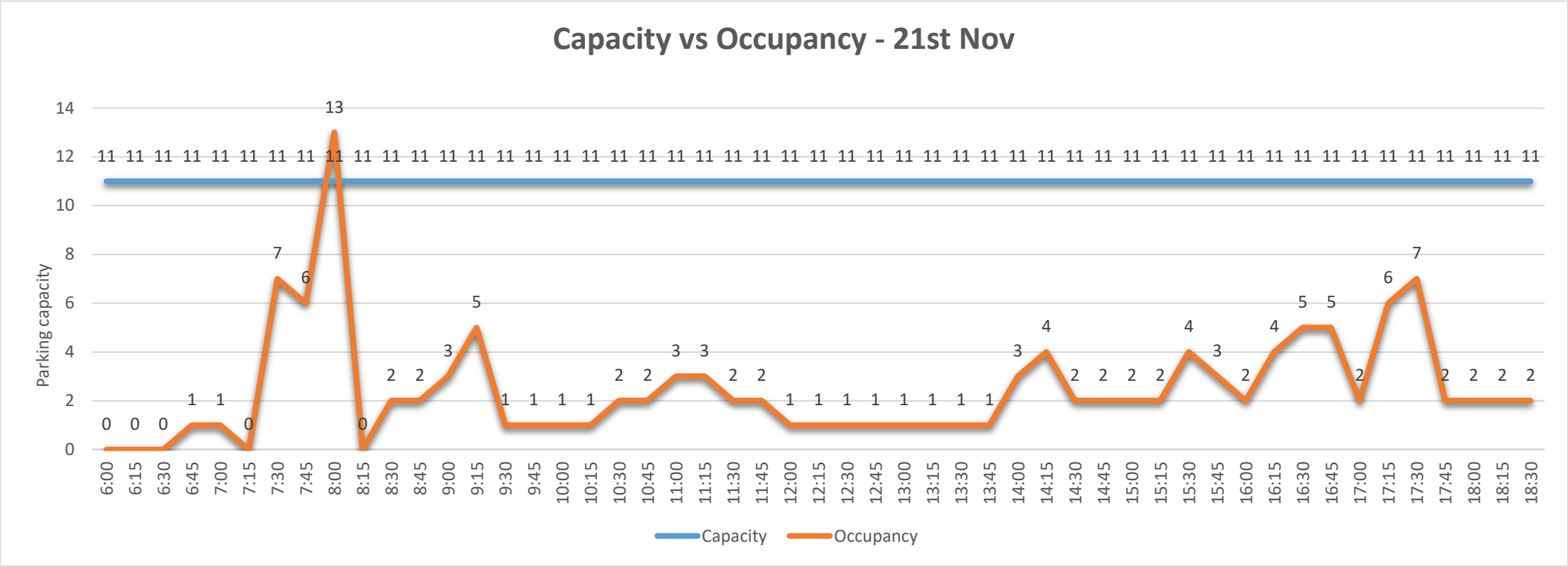
Appendix A Survey Results
Appendix B Approved Operational Transport and Access Management Plan
Appendix C Santa Sophia College Letter

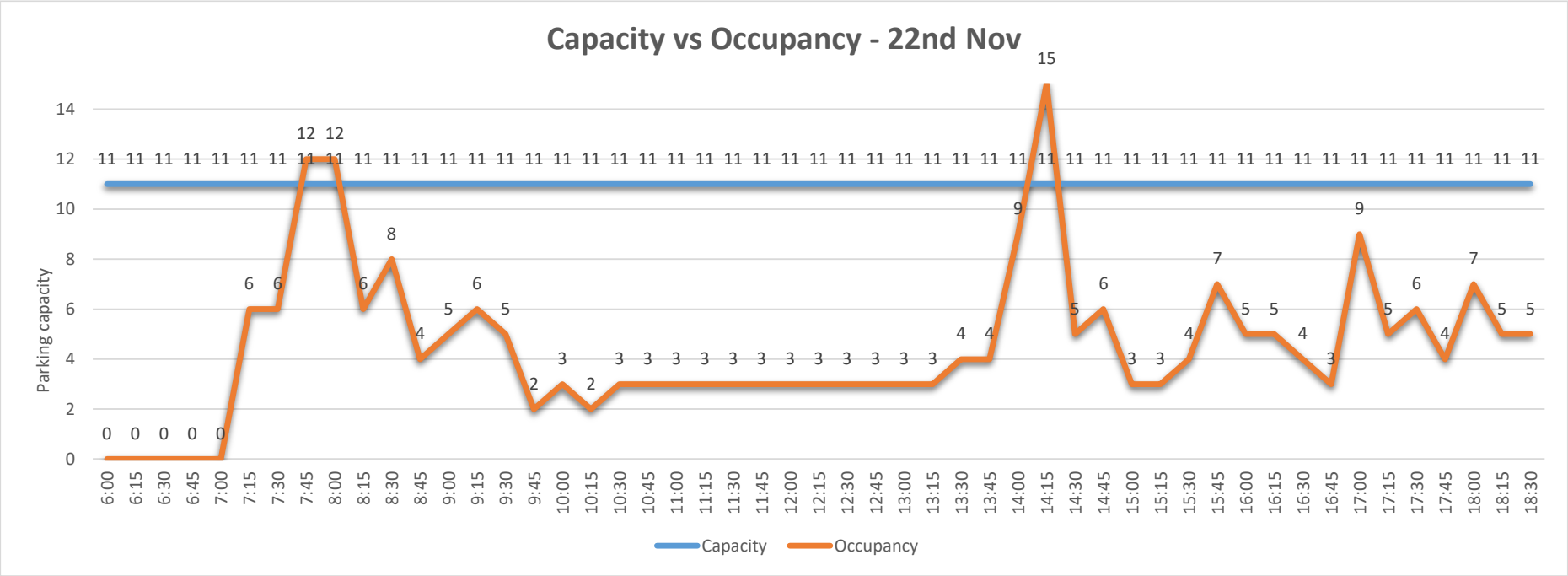
Appendix A. Survey Results

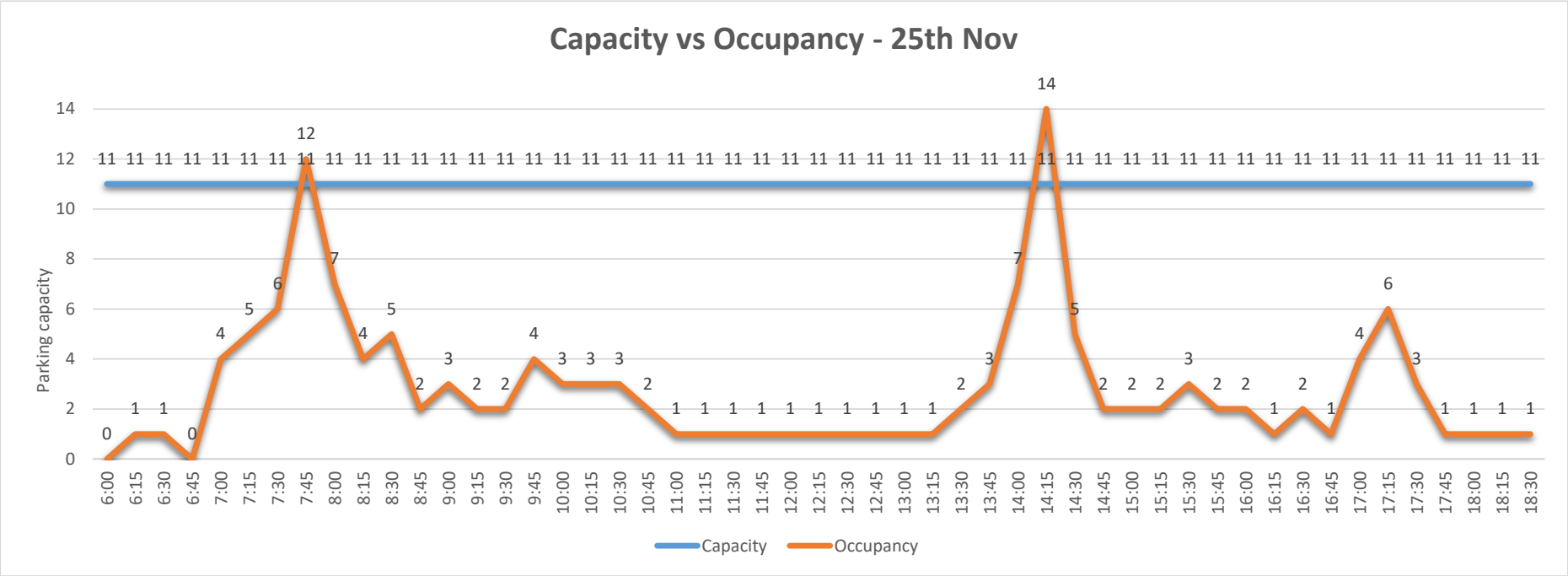

Capacity vs Occupancy - 18th Nov
Parking capacity
Capacity
Occupancy

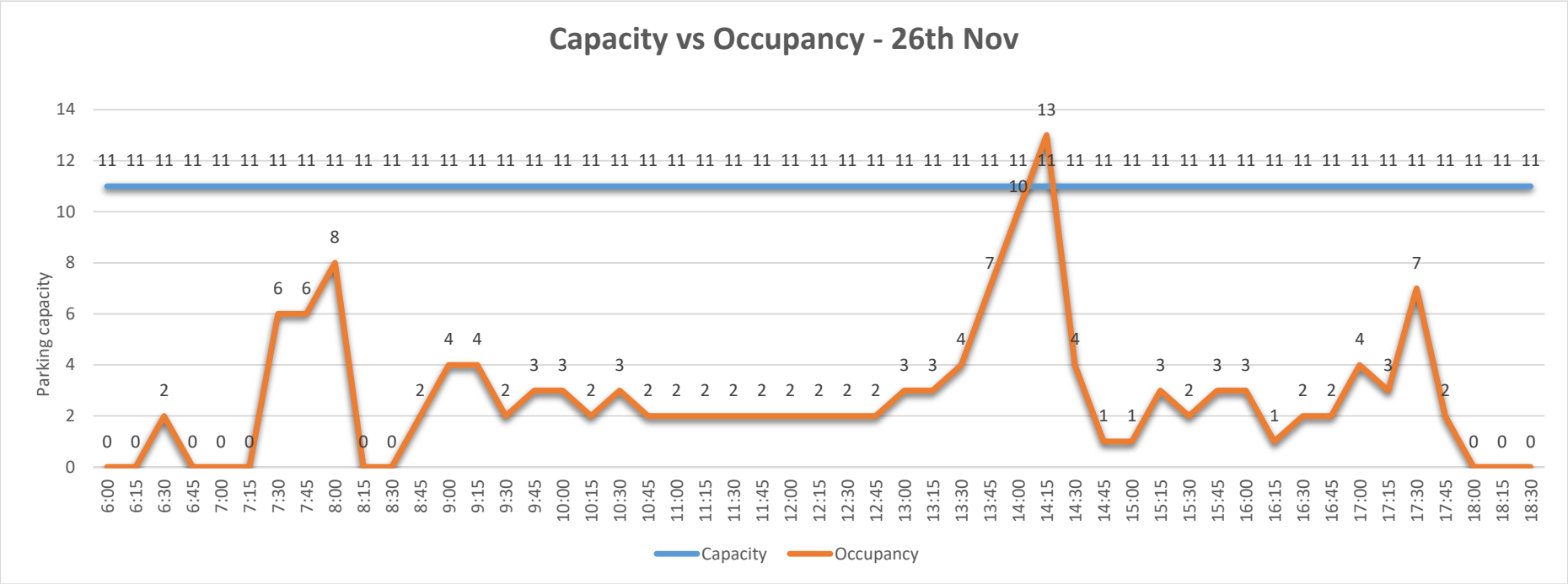

Capacity vs Occupancy - 19th Nov
Parking capacity
14
12
10
8
6
4
2
0
6:00 6:15 6:30 6:45 7:00 7:15 7:30 7:45 8:00 8:15 8:30 8:45 9:00 9:15 9:30 9:45 10:00 10:15 10:30 10:45 11:00 11:15 11:30 11:45 12:00 12:15 12:30 12:45 13:00 13:15 13:30 13:45 14:00 14:15 14:30 14:45 15:00 15:15 15:30 15:45 16:00 16:15 16:30 16:45 17:00 17:15 17:30 17:45 18:00 18:15 18:30
Capacity
Occupancy

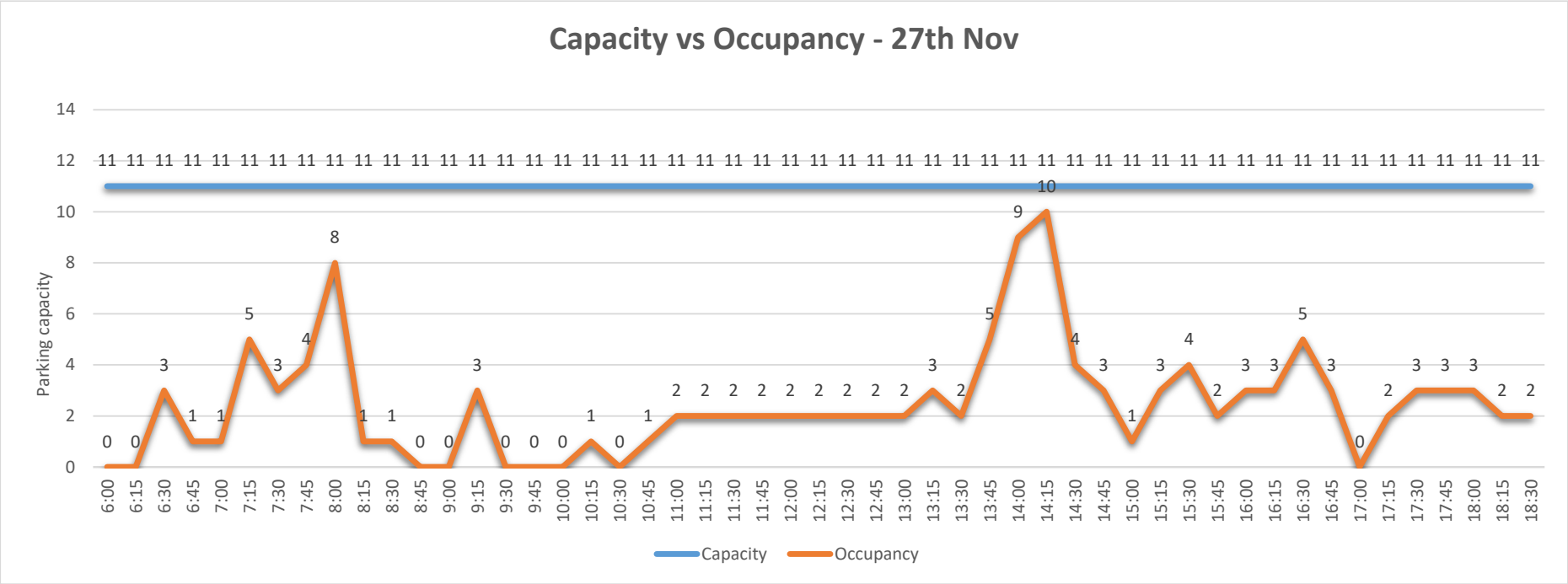

Capacity vs Occupancy - 20th Nov
Parking capacity
Capacity
Occupancy

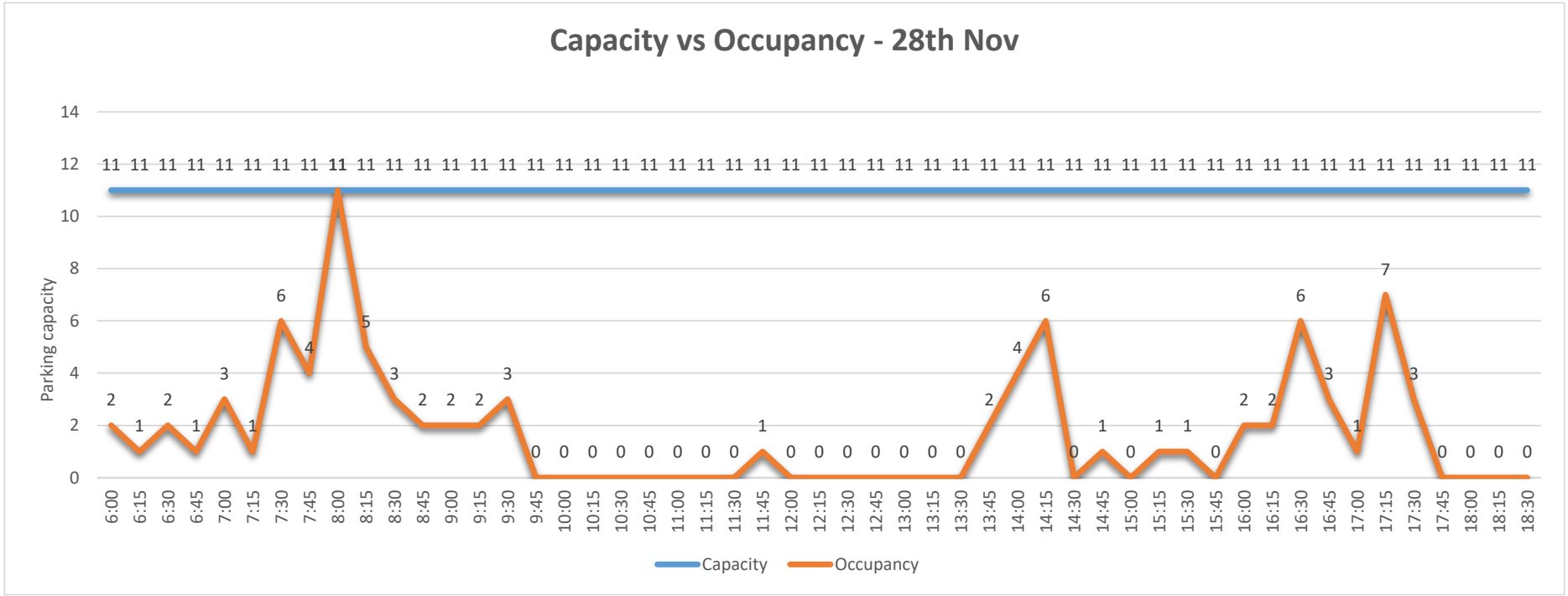

Capacity vs Occupancy - 21st Nov
Parking capacity
Capacity
Occupancy

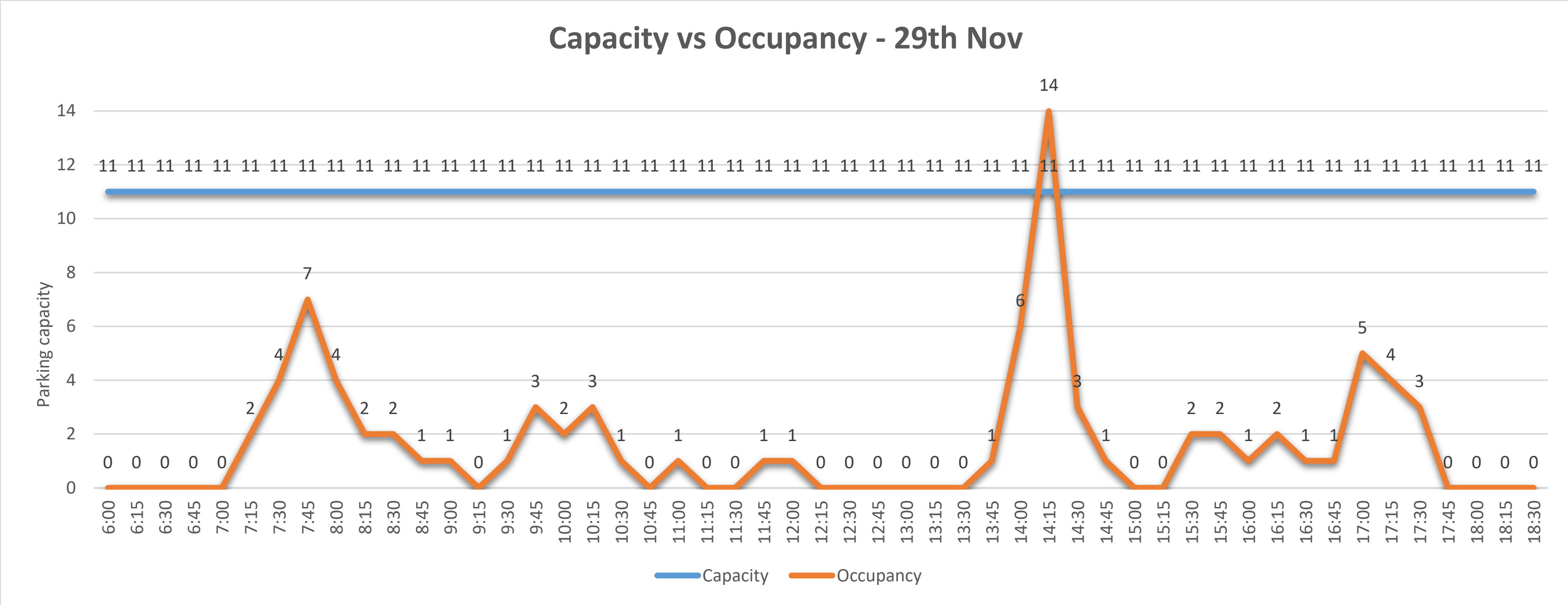

Capacity vs Occupancy - 22nd Nov
Parking capacity
Capacity
Occupancy


Capacity vs Occupancy - 25th Nov
Parking capacity
Capacity
Occupancy


Capacity vs Occupancy - 26th Nov
Parking capacity
Capacity
Occupancy


Capacity vs Occupancy - 27th Nov
Parking capacity
Capacity
Occupancy


Capacity vs Occupancy - 28th Nov
Parking capacity
Capacity
Occupancy



Capacity vs Occupancy - 29th Nov
Parking capacity
14
12
10
8
6
4
2
0
6:00 6:15 6:30 6:45 7:00 7:15 7:30 7:45 8:00 8:15 8:30 8:45 9:00 9:15 9:30 9:45 10:00 10:15 10:30 10:45 11:00 11:15 11:30 11:45 12:00 12:15 12:30 12:45 13:00 13:15 13:30 13:45 14:00 14:15 14:30 14:45 15:00 15:15 15:30 15:45 16:00 16:15 16:30 16:45 17:00 17:15 17:30 17:45 18:00 18:15 18:30
Capacity
Occupancy

Appendix B. Approved Operational Transport and Access Management Plan

asongroup

Operational Transport and Access Management Plan

Santa Sophia Catholic College, The Gables

Ref: 0760r02v5
29/10/2021

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Document Control

Project No: 0760

Project: Santa Sophia Catholic College

Client: TSA Management

File Reference: P0760r02v5 AG OTAMP_Santa Sophia Catholic College, The Gables; Issue V.docx

Revision History

Revision	Date	Details	Author	Approved by
-	14/04/2021	Draft	M. Tran & T. Lehmann	D. Choi
I	17/05/2021	Draft Issue I	T. Lehmann	D. Choi
II	19/05/2021	Issue I	T. Lehmann	T. Lehmann
III	26/05/2021	Issue II	T. Lehmann	T. Lehmann
IV	02/06/2021	Issue III	D.Choi & W. Zheng	D.Choi
V	30/09/2021	Issue IV	M. Tangonan & W. Zheng	D. Choi
VI	29/10/2021	Issue V	W. Zheng	D. Choi

party. This document has been prepared based on the Client's description of its requirements, information provided by the Client and other third parties.

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Appendices

1 Introduction

1.1 Purpose

Ason Group has been engaged by TSA Management on behalf of Catholic Education Diocese of Parramatta (CEDP) to prepare an Operational Transport and Access Management Plan (OTAMP) for the Santa Sophia Catholic College, The Gables (the School) located at Lot 26 DP255616, Red Gables Road, Box Hill North in response to condition E23 specified in the Development Consent SSD-9772, granted on 21 April 2020. The condition reads as follows:

> ***Operational Transport and Access Management Plan (OTAMP)***
>
> *E23: Prior to commencement of operation, an OTAMP is to be prepared by a suitability qualified person, in consultation with Council, TfNSW and TfNSW (RMS), and submitted to the satisfaction of the Planning Secretary. The OTAMP must address the following:*
>
> *a) Detailed pedestrian analysis including the identification of safe route options – to identify the need for management measures such as staggered school start and finish times to ensure students and staff are able to access and leave the site in a safe and efficient manner during school start and finish;*
>
> *b) The location of and access to all car parking spaces on the school campuses and off-site and their allocation (i.e. staff, visitor, accessible, emergency, etc.);*
>
> *c) The location and operational management procedures of the drop-off / pick-up zones located within future Road B and future Fontana Drive, including access procedures (for the Fontana Drive Zone) and staff management / traffic controller arrangements, generally in accordance with the recommendations contained in the Technical Note prepared by Ason Group and dated 19 December 2019, which accompanied the Applicant's Response to Submissions Addendum;*
>
> *d) The location and operational management procedures for the Fontana Drive bus zone for daily school drop-off / pick-up operations, for excursions and sporting activities, including staff management / traffic controller arrangements;*
>
> *e) Details of a private school bus service required by condition E19, including bus routes and service times; and*
>
> *f) Details of parking arrangements for drop-off / pick-up of children using the OOSH;*
>
> *g) Delivery and service vehicle and bus access and management arrangements;*
>
> *h) Management of approved access arrangements;*
>
> *i) Potential traffic impacts on surrounding road networks and mitigation measures to minimise impacts, including measures to mitigate queuing impacts associated with vehicles accessing the drop-off / pick-up zones;*
>
> *j) Car parking arrangements and management associated with the proposed use of school facilities by community members and events; and*
>
> *k) A monitoring and review program; and*

(l) a plan to ensure safe reversing movements by trucks accessing the substation on future Fontana Drive (including delivery / loading times restricted outside of school hours).

With consideration for the above condition, the purpose of this OTAMP is to provide guidance in relation to the traffic management arrangements for the Site, in particular the management of traffic in relation to the drop-off / pick-up (DOPU) zone for students.

The overall objective is to ensure safe and efficient movement of vehicles, visitors and employees. In particular, this OTAMP details the following:

- A vehicle and pedestrian access plan;
- Operation of the DOPU area during peak periods;
- Vehicle movement within the local road network;
- Internal manoeuvring and large vehicle parking plan; and
- Details on the governance, monitoring, review, and administration of the OTAMP.

1.2 Author Credentials

The Curriculum Vitae (CVs) for the authors of this Plan have been attached in **Appendix A**.

1.3 Response to Conditions

In response to Condition E18 of the Development Consent SSD-9772, the following table provide details of the requirement of Condition E18 and respective response to the conditions reference demonstrating compliance with the condition.

Table 1: Conditions of Consent

Condition No.	Condition	Response
E23	Prior to the commencement of operation, an OTAMP is to be prepared by a suitably qualified person, in consultation with Council, TfNSW and TfNSW (RMS), and submitted to the satisfaction of the Planning Secretary. The OTAMP must address the following:	Refer to Appendix A for CV of authors of the report. Consultation has been undertaken with the detailed authorities. This is summarised in Section 1.4.
E23 a)	Detailed pedestrian analysis including the identification of safe route options – to identify the need for management measures such as staggered school start and finish times to ensure students and staff are able to access and leave the site in a safe and efficient manner during school start and finish.	Refer to Section 2.9 and Section 3.3 of the report for details.
E23 b)	The location of and access to all car parking spaces on the school campuses and off-site and their allocation (i.e., staff, visitor accessible, emergency, etc.)	Refer to Section 2.4 and Section 3.4 of the report for details.

E23 c)	The location and operational management procedures of the drop-off / pick-up zones located within future Road B and future Fontana Drive, including access procedures (for the Fontana Drive zone) and staff management / traffic controller arrangements, generally in accordance with the recommendations contained in the *Technical Note* prepared by Ason group and dated 19 December 2019, which accompanied the Applicant's Response to Submissions Addendum.	Refer to Section 2.7and 3.4 of the report for details.
E23 d)	The location and operational management procedures for the Fontana bus zone for daily school drop-off / pick-up operations, for excursions and sporting activities, including staff management / traffic controller arrangements.	Refer to Section 2.6, 2.8 and 3.4.13 of the report for details.
E23 e)	Details of a private school bus service required by condition E19, including bus routes and service times.	Refer to Section 2.8.6 of the report for details, note that some of the details are under consultation.
E23 f)	Details of parking arrangement for drop-off / pick-up children using the OOSH.	Refer to Section 3.4 of the report for details.
E23 g)	Delivery and service vehicles and bus access and management arrangements.	Refer to Section 3.4 of the report for details.
E23 h)	Management of approved access arrangements.	Refer to Section **Error! Reference source not found.** and 3.4 of the report for details.
E23 i)	Potential traffic impacts on surrounding road networks and mitigation measures to minimise impacts, including measures to mitigate queuing impacts associated with vehicles accessing the drop-off / pick-up zones.	Refer to Section 3.4 of the report for details.
E23 j)	Car parking arrangements and management associated with the proposed use of school facilities by community members and events, and	Refer to Section 3.3 and 3.4 of the report for details.
E23 k)	A monitoring and review program.	Refer to Section 4 of the report for details.
E23 l)	a plan to ensure safe reversing movements by trucks accessing the substation on future Fontana Drive (including delivery / loading times restricted outside of school hours).	Refer to Section 3.4.3 of the report for details.

1.4 Detailed Stakeholder Engagement

Over the course of the development of the Plan, Ason Group has consulted with key stakeholders including TfNSW, the Hills Shire Council, Bus providers, and the School Principal. The following section of this report provide details of consultation undertaken by the Project Team in its preparation of this STP.

1.4.1 The Hills Shire Council Stakeholder Engagement

Table 2: The Hills Shire Council Consultation

Identified Party to Consult:	The Hills Shire Council

Consultation type:	Email correspondence. In person meeting.
When is consultation required?	Prior to commencement
Why?	E23 – Operational Transport and Access Management Transport Plan: Prior to commencement of operation, an OTAMP is to be prepared by a suitability qualified person, in consultation with Council, TfNSW and TfNSW (RMS), and submitted to the satisfaction of the Planning Secretary.
When was consultation scheduled/held?	8th March 2021 11th May 2021 13th May 2021 1st June 2021 3rd June 2021 1st July 2021 3rd August 2021 28th October 2021
Identify persons and positions who were involved	**Traffic Consultant** – Ason Group: Dora Choi (Principal Lead - Traffic Management & Operations), Wendy Zheng (Senior Traffic Engineer), Thomas Lehmann (Traffic Engineer) **Council** – Ben Hawkins (Manager – Subdivision & Development Certification, Rodney Pavitt (Senior Engineer – Development), Angela Vernicos (Road Safety Officer), Michael Lathlean (Manager - Asset Management, Traffic and Parks, Shire Strategy Transformation & Solutions)
Provide the details of the consultation	8th March 2021: Ason Group liaised with Ben Hawkins to discuss the signage and linemarking requirements. 11th May 2021: Ason Group issued a signage and linemarking plan to Council for comment. 13th May 2021: Council provided feedback regarding the signage and linemarking plan. 1st June 2021: A meeting was held between Council, Ason Group, TSA and Stocklands regarding the signage and linemarking plan 3rd June 2021: Ason re-issued the signage and linemarking plan per Council direction and additional feedback was provided by Council 1st July 2021: Secondary DOPU on Fontana Driver operations has been queried by Council 3rd August 2021: Council issued their approval of the signage and linemarking plan with 2 additional conditions 28th October 2021: Council confirmation that they have reviewed and have no comments on the OTAMP
What specific matters were discussed?	• 8th March 2021: Ason Group liaised with Ben Hawkins to discuss the signage and linemarking requirements. Council detailed that Ason Group is to liaise with Stockland regarding the signage and linemarking plan. • 11th May 2021: Ason Group issued a signage and linemarking play to Council for comment. • 13th May 2021: Council provided feedback regarding the signage and linemarking plan. • Council requested additional works packages to be included within the signage and linemarking plan. • 1st June 2021: A meeting was held between Council, Ason Group, TSA and Stocklands regarding the signage and linemarking plan for the precinct surrounding the school and Council provided direction.

	• 3rd June 2021: Ason re-issued the signage and linemarking plan per Council direction and additional feedback was provided by Council • 1st July 2021: Secondary DOPU on Fontana Driver operations has been queried by Council • 3rd August 2021: Council issued their approval of the signage and linemarking plan with 2 additional conditions • 28th October 2021: Council confirmation that they have reviewed and have no comments on the OTAMP
What matters were resolved?	• Signage and Linemarking Plan for the school has been resolved and approved by Council • Additional footpath width construction requested by Council has been agreed to and resolved.
What matters are unresolved?	No items to be resolved.
Any remaining points of disagreement?	No.

1.4.2 TfNSW Stakeholder Engagement

Table 3: TfNSW Consultation

Identified Party to Consult:	Transport for NSW
Consultation type:	Email correspondence. Video Conference.
When is consultation required?	Prior to commencement
Why?	E23 – Operational Transport and Access Management Transport Plan: Prior to commencement of operation, an OTAMP is to be prepared by a suitability qualified person, in consultation with Council, TfNSW and TfNSW (RMS), and submitted to the satisfaction of the Planning Secretary.
When was consultation scheduled/held?	8th February 2021. 15th February 2021. 11th March 2021 17th Junes 2021 28th June 221 1st July 2021 5th July 2021 12th July 2021 13th July 2021 26th July 2021 29th July 2021 28th August 2021 30th August 2021 28th September 2021 25th October 2021
Identify persons and positions who were involved	**Traffic Consultant** – Ason Group: Dora Choi (Principal Lead - Traffic Management & Operations), Wendy Zheng (Senior Traffic Engineer), Thomas Lehmann (Traffic Engineer)

	TfNSW – John McMullan (Contract Management Specialist, Public Transport Contracts and Partnerships), Wade Mitford (Service Planner). Steven Nguyen (Network and Safety Officer - Network & Asset Management, Planning & Programs), Paula Darnley (Senior Contracts Officer - Public Transport Contracts and Partnerships, Greater Sydney), John Broady (Route Planner – Western Sydney)
Provide the details of the consultation	5th February 2021: A meeting was held between Ason Group, TfNSW, Busways, CDC Hillsbus, and the School Principal. Ason Group provided preliminary student data to TfNSW. 15th February 2021: Ason Group forwarded queries from the School regarding the SSTS. 11th March 2021: A meeting was held between Ason Group, TfNSW, Busways, CDC Hillsbus, and the School Principal. Ason Group provided preliminary student data to TfNSW. 17th June 2021: Request to change the standard school zone times for Santa Sophia was submitted to Centre for Road Safety via TfNSW Network Safety Officer 1st July 2021: CRS enquiry regarding DOPU management was raised and answered 5th July 2021: CRS enquiry regarding DOPU management was raised and answered 12th July 2021: TfNSW confirmed the school bus routes for Santa Sophia from Rouse Hill Station 13th July 2021: Bus route details confirmed 26th July 2021: CRS confirmed approval of changed school zone times 29th July 2021: TfNSW confirm the start of school zone review process 27th August 2021: TfNSW response to queries regarding school bus routes from the west to Santa Sophia 30th August 2021: Video conference between TfNSW, Ason, TSA, Stocklands and Built regarding the delivery timing for the roads around the school 28th September 2021: TfNSW confirmation that school zone signage and linemarking is being installed. 25th October 2021: TfNSW confirmation that they have reviewed and have no comments on the OTAMP

What specific matters were discussed?	• 5th February 2021: the existing bus routes within the locality and proposed new bus services.
	  • TfNSW provided details on the SSTS program.
	  • Ason Group provided high-level information regarding the catchment data and potential travel mode splits for buses.
	  • TfNSW detailed that multiple direct routes are not feasible for the site given the catchment.
	  • The School bell times were confirmed to be beneficial for future bus routes.
	  • TfNSW detailed that some students would likely be required to changeover at Rouse Hill to travel to the School.
	  • Ason Group provided the preliminary student locations to TfNSW, Busways, and CDC Hillsbus to assist with route planning.
	• 12th February 2021: Ason Group forwarded queries from the School regarding the SSTS.
	  • Ason Group provided the preliminary student locations to TfNSW, Busways, and CDC Hillsbus to assist with route planning.
	• 11th March 2021: A meeting was held between Ason Group, TfNSW, Busways, CDC Hillsbus, and the School Principal. Ason Group provided preliminary student data to TfNSW.

	• 17th June 2021: Request to change the standard school zone times for Santa Sophia was submitted to Centre for Road Safety via TfNSW Network Safety Officer
	  • The school start and end times are earlier than standard school zones so the application to move them forward was submitted to TfNSW and forwarded onto Centre for Road Safety (CRS) to assess
	• 1st July 2021: CRS enquiry regarding DOPU management was raised and answered
	  • CRS had raised the same query as Council regarding the management of the DOPU for the secondary school students and provided the school guidelines for the responsibility
	• 5th July 2021: CRS enquiry regarding DOPU management was raised and answered
	• 12th July 2021: TfNSW confirmed the school bus routes for Santa Sophia from Rouse Hill Station
	  • TfNSW confirmed the implementation of 4 school bus routes between Santa Sophia and Rouse Hill Station to be operated by HillsBus (CDC)
	• 13th July 2021: Bus route details confirmed
	• 26th July 2021: CRS confirmed approval of changed school zone times
	• 29th July 2021: TfNSW confirm the start of school zone review process
	• 27th August 2021: TfNSW response to queries regarding school bus routes from the west to Santa Sophia
	• 30th August 2021: Video conference between TfNSW, Ason, TSA, Stocklands and Built regarding the delivery timing for the roads around the school
	  • TfNSW following the school zone implementation review has raised the issue that only Fontana Drive is open in the road network surrounding the school so the school zone signage and linemarking implementation can not be completed.
	  • Stocklands provided timing for the completion of the surrounding road network and TfNSW agreed to a stages installation of the school zone signage and linemarking as the roads come online.
	• 28th September 2021: TfNSW confirmation that school zone signage and linemarking is being installed.
	• 25th October 2021: TfNSW confirmation that they have reviewed and have no comments on the OTAMP

What matters were resolved?	• School Zone Signage and Linemarking has been agreed to and implemented by TfNSW • Request for non standard school zone hours have been reviewed and agreed to by CRS • School buses have been agreed to and provided between Rouse Hill Station and the School.
What matters are unresolved?	The school would like to have school bus services provided between Pitt Town / Windsor and the school which due to road network restraints in that area has not been provided.
Any remaining points of disagreement?	No.

1.4.3 Busways Stakeholder Engagement

Table 4: Busways Consultation

Identified Party to Consult:	Busway
Consultation type:	Email correspondence. Video Conference.
When is consultation required?	Prior to commencement
Why?	E23 – Operational Transport and Access Management Transport Plan: Prior to commencement of operation, an OTAMP is to be prepared by a suitability qualified person, in consultation with Council, TfNSW and TfNSW (RMS), and submitted to the satisfaction of the Planning Secretary.
When was consultation scheduled/held?	8th February 2021 11th February 2021 16th April 2021 19th April 2021 20th April 2021 14th September 2021
Identify persons and positions who were involved	**Traffic Consultant** – Ason Group: Dora Choi (Principal Lead - Traffic Management & Operations), Wendy Zheng (Senior Traffic Engineer), Thomas Lehmann (Traffic Engineer) **Busways** – Dave Davies (Manager, Stakeholder Engagement – Scheduling)
Provide the details of the consultation	28th January 2021: Ason Group emailed TfNSW, Busways, CDC Hillsbus, and the School Principal to liaise and request a meeting to discuss the existing bus routes and provision. 5th February 2021: A meeting was held between Ason Group, TfNSW, Busways, CDC Hillsbus, and the School Principal. 11th February 2021: A meeting was held between Ason Group, TfNSW, Busways, and CDC Hillsbus. 16th April 2021: Ason Group requested a map of the proposed bus route. 19th April 2021: Ason Group email Busways and CDC Hillsbus regarding the new routes in the North West. 20th April 2021: Busways confirmed that routes 740 and 741 are run by Busways and no separate services are planned. 14th September 2021: Busways referred Ason to TfNSW regarding the provision of bus services between Santa Sophia and the west.

What specific matters were discussed?	• 5th February 2021: the existing bus routes within the locality and proposed new bus services.
	  • TfNSW provided details on the SSTS program.
	  • Ason Group provided high-level information regarding the catchment data and potential travel mode splits for buses.
	  • TfNSW detailed that multiple direct routes are not feasible for the site given the catchment.
	  • The School bell times were confirmed to be beneficial for future bus routes.
	  • TfNSW detailed that some students would likely be required to changeover at Rouse Hill to travel to the School.
	  • Ason Group provided the preliminary student locations to TfNSW, Busways, and CDC Hillsbus to assist with route planning.
	• 11th February 2021: the proposed new bus services and infrastructure.
	  • Ason Group provided additional data of students who would utilise public transport.

	• Ason Group provided high-level information regarding the catchment data and potential travel mode splits for buses. • TfNSW detailed that an announcement regarding future bus routes would be made soon, however no specific details could be provided. • 16th April 2021: Ason Group requested a map of the proposed bus route. • 19th April 2021: Ason Group email Busways and CDC Hillsbus regarding the new routes in the North West. • 20th April 2021: Busways confirmed that routes 740 and 741 are run by Busways and no separate services are planned. • 14th September 2021: Busways referred Ason to TfNSW regarding the provision of bus services between Santa Sophia and the west.
What matters were resolved?	No items to be resolved.
What matters are unresolved?	The school would like to have school bus services provided between Pitt Town / Windsor and the school which due to road network restraints in that area has not been provided.
Any remaining points of disagreement?	No.

1.4.4 CDC Hillsbus Stakeholder Engagement

Table 5: CDC Hillsbus Consultation

Identified Party to Consult:	CDC Hillsbus
Consultation type:	Email correspondence. Video Conference.
When is consultation required?	Prior to commencement
Why?	E23 – Operational Transport and Access Management Transport Plan: Prior to commencement of operation, an OTAMP is to be prepared by a suitability qualified person, in consultation with Council, TfNSW and TfNSW (RMS), and submitted to the satisfaction of the Planning Secretary.
When was consultation scheduled/held?	8th February 2021 11th February 2021 16th April 2021 19th April 2021 20th April 2021 2nd September 2021 6th September 2021
Identify persons and positions who were involved	**Traffic Consultant** – Ason Group: Dora Choi (Principal Lead - Traffic Management & Operations), Wendy Zheng (Senior Traffic Engineer), Thomas Lehmann (Traffic Engineer) **Busways** – Thomas Uthaug (Service Development Manager), Max Chen (Services Schedule Manager)
Provide the details of the consultation	28th January 2021: Ason Group emailed TfNSW, Busways, CDC Hillsbus, and the School Principal to liaise and request a meeting to discuss the existing bus routes and provision.

	5th February 2021: A meeting was held between Ason Group, TfNSW, Busways, CDC Hillsbus, and the School Principal. 11th February 2021: A meeting was held between Ason Group, TfNSW, Busways, and CDC Hillsbus. 16th April 2021: Ason Group requested a map of the proposed bus route. 19th April 2021: Ason Group email Busways and CDC Hillsbus regarding the new routes in the North West. 20th April 2021: Busways confirmed that routes 740 and 741 are run by Busways and no separate services are planned. 2nd September 2021: Hillsbus has been notified that the times provided for the four bus routes will need to be adjusted to account for school times. 6th September 2021: A meeting was held between Ason Group, CDC Hillsbus, and the School.

What specific matters were discussed?	• 5th February 2021: the existing bus routes within the locality and proposed new bus services.
	  • TfNSW provided details on the SSTS program.
	  • Ason Group provided high-level information regarding the catchment data and potential travel mode splits for buses.
	  • TfNSW detailed that multiple direct routes are not feasible for the site given the catchment.
	  • The School bell times were confirmed to be beneficial for future bus routes.
	  • TfNSW detailed that some students would likely be required to changeover at Rouse Hill to travel to the School.
	  • Ason Group provided the preliminary student locations to TfNSW, Busways, and CDC Hillsbus to assist with route planning.
	• 11th February 2021: the proposed new bus services and infrastructure.
	  • Ason Group provided additional data of students who would utilise public transport.
	  • Ason Group provided high-level information regarding the catchment data and potential travel mode splits for buses.
	  • TfNSW detailed that an announcement regarding future bus routes would be made soon, however no specific details could be provided.
	• 16th April 2021: Ason Group requested a map of the proposed bus route.
	• 19th April 2021: Ason Group email Busways and CDC Hillsbus regarding the new routes in the North West.
	• 20th April 2021: CDC Hillsbus stated that they may provide a future bus service, but no information could be provided at this time.
	• 2nd September 2021: Hillsbus has been notified that the times provided for the four bus routes will need to be adjusted to account for school times.
	• 6th September 2021: the proposed school bus route information:
	  • Times have agreed to be adjusted to account for start / finish times for the secondary students
	  • Hillsbus have live login information from the SSTS scheme

What matters were resolved?	No items to be resolved.
What matters are unresolved?	Nil.
Any remaining points of disagreement?	No.

1.4.5 School Principal Stakeholder Engagement

Table 6: School Principal Consultation

Identified Party to Consult:	School Principal
Consultation type:	Email correspondence. Video Conference.
When is consultation required?	Prior to commencement
Why?	E23 – Operational Transport and Access Management Transport Plan: Prior to commencement of operation, an OTAMP is to be prepared by a suitability qualified person, in consultation with Council, TfNSW and TfNSW (RMS), and submitted to the satisfaction of the Planning Secretary.
When was consultation scheduled/held?	27th October 2020 5th February 2021 6th September 2021
Identify persons and positions who were involved	**Traffic Consultant** – Ason Group: Dora Choi (Principal Lead - Traffic Management & Operations), Wendy Zheng (Senior Traffic Engineer), Thomas Lehmann (Traffic Engineer) **School Principal** – Mark DeVries (Principal), Kelly Picket (Business Manager)
Provide the details of the consultation	27th October 2020: Ason Group and Mark DeVries reviewed a questionnaire detailing operations and transport initiatives from staff and students. 28th January 2021: Ason Group emailed TfNSW, Busways, CDC Hillsbus, and the School Principal to liaise and request a meeting to discuss the existing bus routes and provision. 5th February 2021: A meeting was held between Ason Group, TfNSW, Busways, CDC Hillsbus, and the School Principal. Ason Group provided a draft email to Mark DeVries regarding SSTS information. 6th September 2021: A meeting was held between Ason Group, CDC Hillsbus, and the School.

What specific matters were discussed?	• 27th October 2020: Ason Group and Mark DeVries reviewed a questionnaire detailing operations and transport initiatives from staff and students.
	  • The specific matters are detailed within the body of this Plan and have informed the OTAMP.
	• 5th February 2021: the existing bus routes within the locality and proposed new bus services.
	  • TfNSW provided details on the SSTS program.
	  • Ason Group provided high-level information regarding the catchment data and potential travel mode splits for buses.
	  • TfNSW detailed that multiple direct routes are not feasible for the site given the catchment.
	  • The School bell times were confirmed to be beneficial for future bus routes.
	  • TfNSW detailed that some students would likely be required to changeover at Rouse Hill to travel to the School.
	  • Ason Group provided the preliminary student locations to TfNSW, Busways, and CDC Hillsbus to assist with route planning.
	• 6th September 2021: the proposed school bus route information:
	  • Times have agreed to be adjusted to account for start / finish times for the secondary students
	  • Hillsbus have live login information from the SSTS scheme

What matters were resolved?	No items to be resolved.

What matters are unresolved?	Nil.
Any remaining points of disagreement?	No.

2 Site Details

2.1 Santa Sophia Catholic College Development

Santa Sophia Catholic College is located on the corner of Fontana Drive and the future Road B, between Red Gables Road and Fontana Drive, in Box Hill North (the Site).

The School will cater for approximately 1,920 primary and secondary school students, inclusive of a 60 student Catholic Early Learning Centre (CELC). The School will have 130 full-time equivalent staff and an additional 6 staff for the CELC.

The Site is located approximately 39 kilometres northwest of the Sydney CBD at 10 Red Gables Road, Box Hill North within The Hills Shire LGA.

Figure 1 provides an overview of the Site in its local context, **Figure 2** details the Site within the context of the road hierarchy, and **Figure 3** shows the Site within the town centre once completed.

Figure 1: Site Context and Location as of 24th January 2021

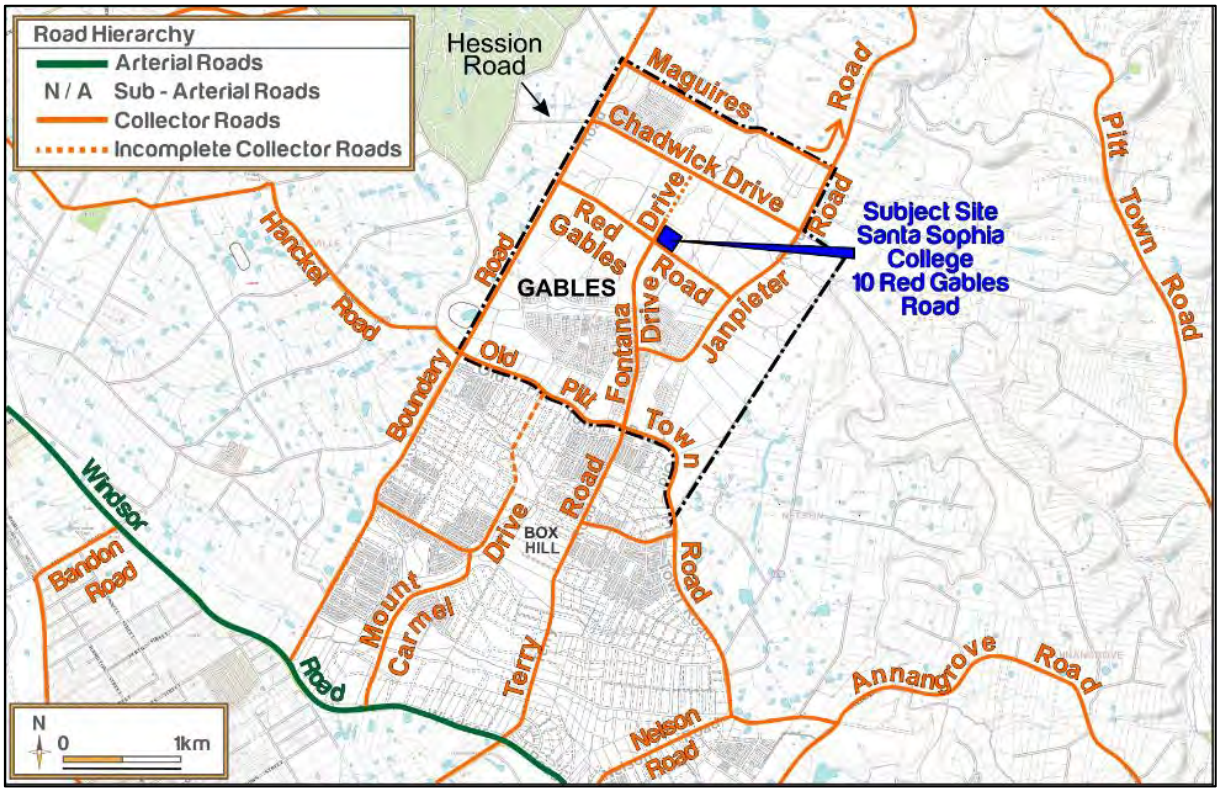

Figure 2: Site and Road Hierarchy as of 24th January 2021

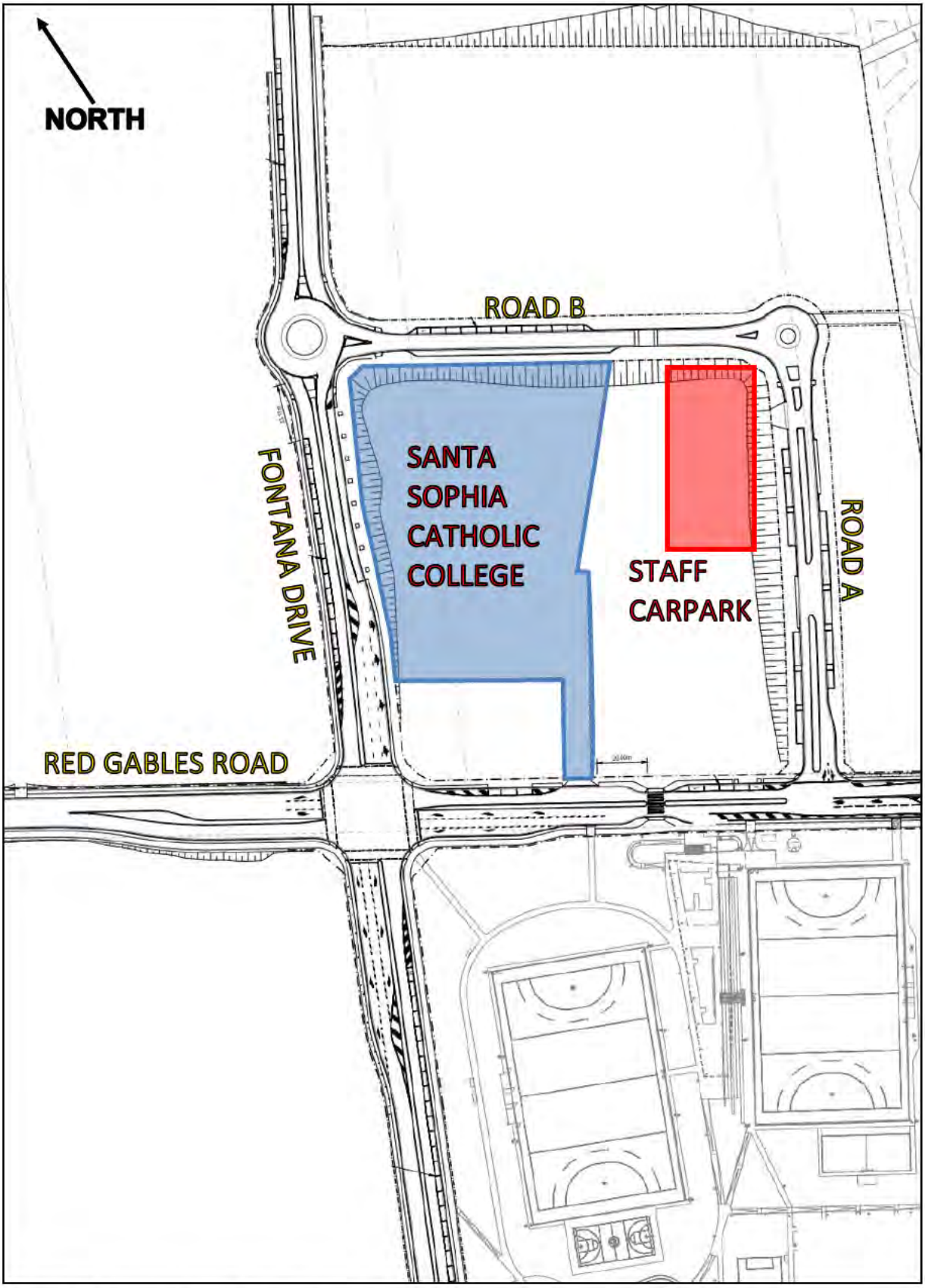

Figure 3: Site and Town Centre Context – Full Development

In a more local context, the Santa Sophia Catholic College development provides an access from Red Gables Road.

It should be noted however that the full extent of Fontana Drive between Red Gables Road and Chadwick Drive will not be delivered until after the completion of the School. Similarly, Red Gables Road between Fontana Drive and Boundary Road will not be delivered until after the completion of the School. As such, this Plan will also discuss the operational measures to be implemented during the opening day stage prior to completion of the surrounding road network. The opening day road network is detailed in **Figure 6**: Bus Bay & DOPU Opening Dates.

2.2 Site Transport Amenities

2.2.1 Full Development

At full development, the School and immediate surroundings of the School site includes:

- 110 staff car parking spaces (including 3 accessible space) located off-site to the east of the School as part of a temporary arrangement. The future permanent parking for the school will form part of the Stockland Town Centre development;
- 10 car parking spaces (including 1 accessible space) located on-site for the CELC;
- On-street DOPU area with 12 spaces for primary students along the northern frontage along new Road B (now Lakefront Crescent);
- On-street DOPU area with 28 spaces for secondary students along the northern frontage along Fontana Drive;
- 252 bicycle parking rails within School grounds;
- On-road bicycle facilities provided along Fontana Drive on the western boundary; and
- Constructed concrete footpath along all frontages of the School.

With consideration for the development of the Town Centre, the overall precinct and the future growth of the School, it is important to note that the Fontana Drive on-street DOPU area is to be provided once required as per the Technical Note (TN) prepared by Ason Group dated 19th December 2019, attached in **Appendix B**. This is anticipated to be in the 2nd – 3rd year of School operation. Up until that point the Road B on-street provision will meet the anticipated demand between Day 1, Term 4 2021 to end of 2023.

The on-site amenities are detailed in **Figure 4** and the staff car park is detailed in **Figure 5**.

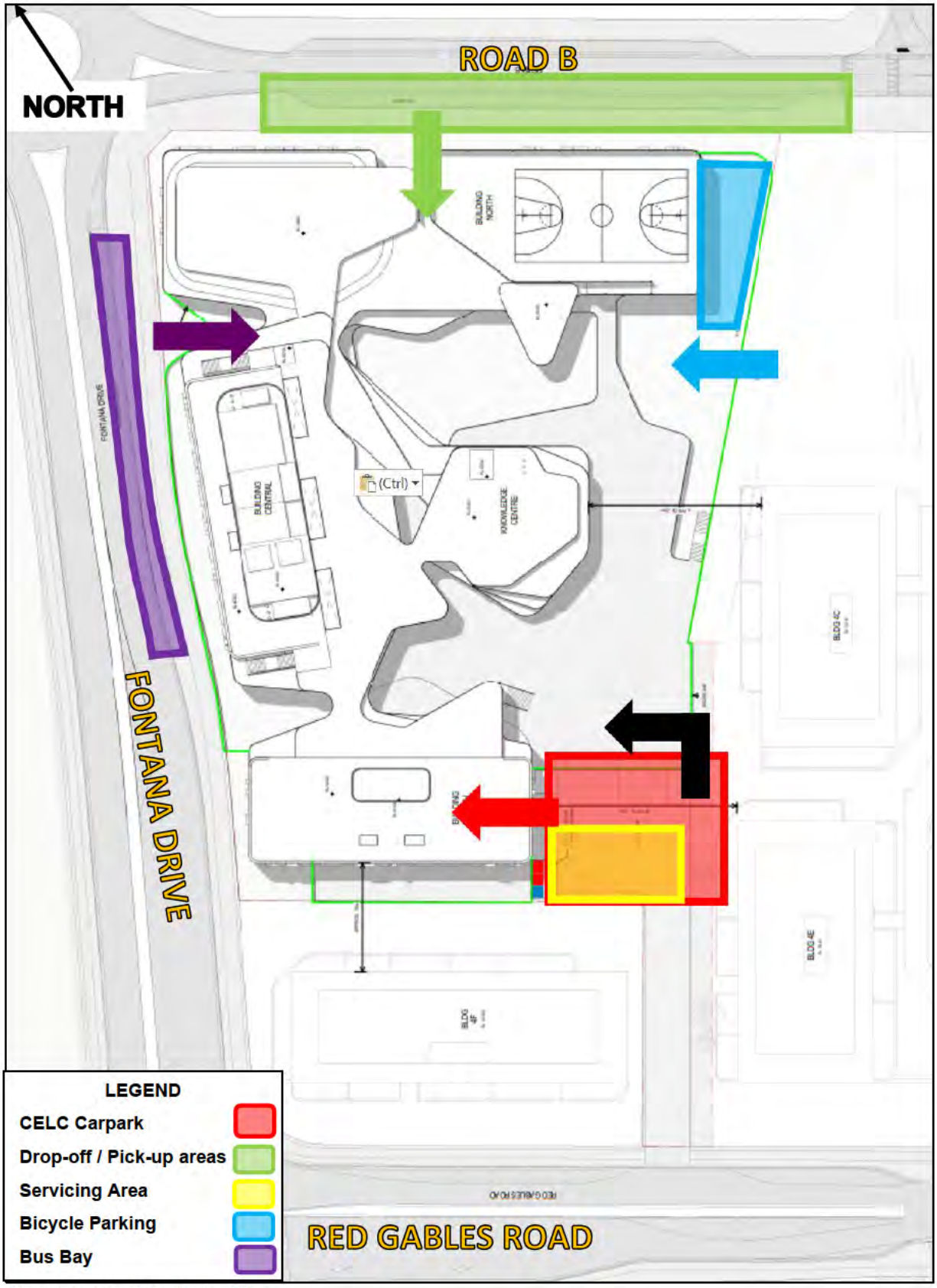

Figure 4: On-Site Amenities

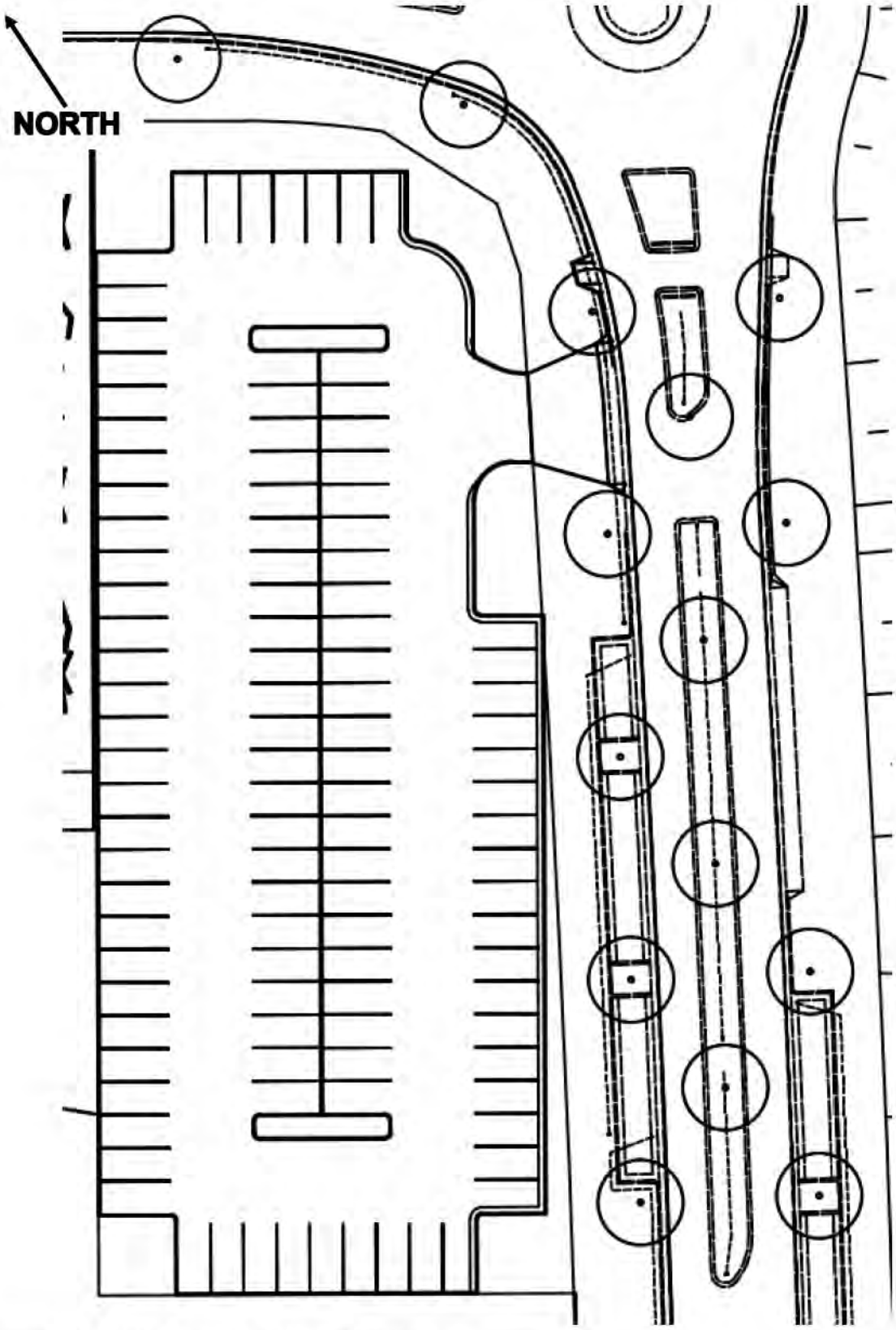

Figure 5: Off-Site Amenities (Staff Carpark)

2.2.2 Opening Day

Due to the COVID-19 lockdown that is in place in the Greater Sydney Area, the opening day for the school, i.e, when the School Campus is open for students to attend is currently planned for 8 November 2021. For the purpose of this report, D1, Term 4 2021 is the intended first day of School Campus operation.

The School and immediate surroundings of the School includes the provision of the following transport infrastructure, which will be complete and available for D1, Term 4 2021:

- 110 staff car parking spaces (including 3 accessible space) located off-site to the east of the School as part of a temporary arrangement,
- 10 car parking spaces (including 1 accessible space) located on-site for the CELC,
- On-street DOPU area with 12 spaces for all students along the northern frontage along new Road B,
- 252 bicycle parking rails within School grounds,
- On-road bicycle facilities provided along Fontana Drive on the western boundary, and
- Constructed concrete footpath along all frontages of the School.

Figure 6: Bus Bay & DOPU Opening Dates now provides further details of the intended delivery dates of the road network surrounding the school. The Bus Bay and northern DOPU location will be completed prior to T4 2021, with the second DOPU location south of the school coming online prior to T1 2022.

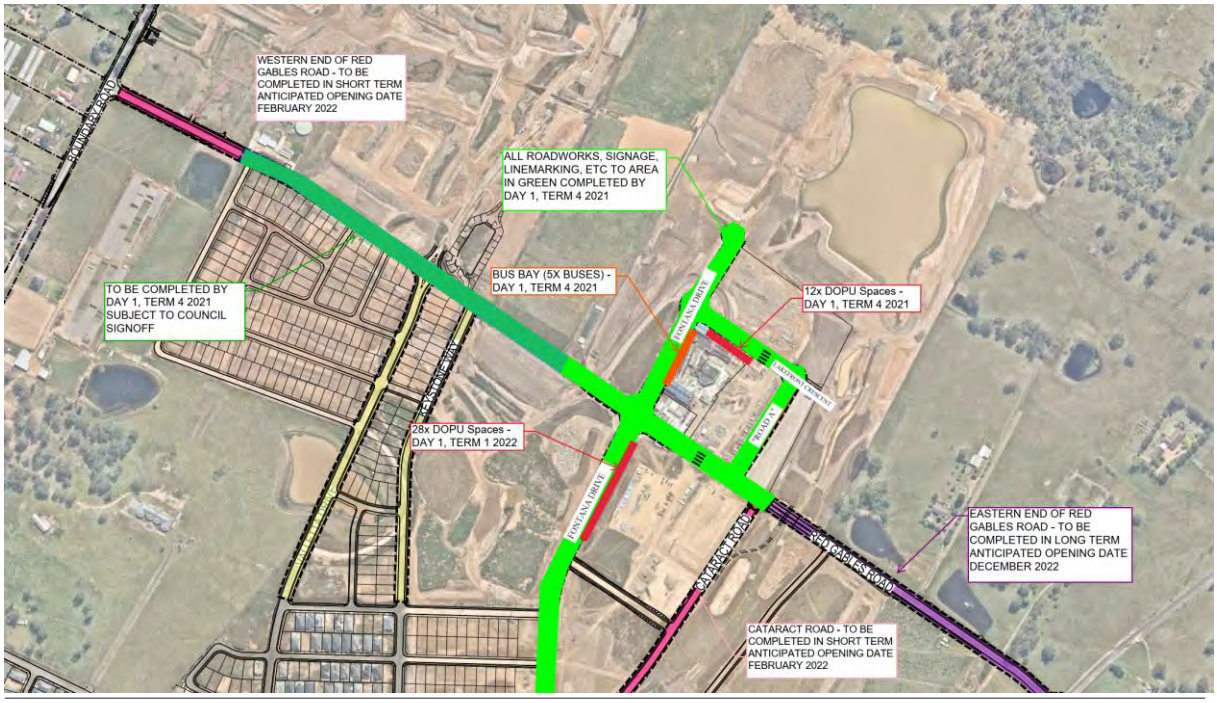

Figure 6: Bus Bay & DOPU Opening Dates

2.3 Signage and Linemarking

Ason Group has prepared a Signage and Line Marking Plan to assist with access to the Site as well as manage the drop-off / pick-up facilities and attached in **Appendix C**.

This Signage and Line Marking Plan details the traffic management arrangements within Road B along the School's frontage and the roundabout intersection of Road B and Fontana Drive, in particular: parking restrictions relating to the DOPU facilities; bus stop; and school zone signage.

This plan was submitted to The Hills Shire Council for review by Local Traffic Committee (LTC) and was subsequently approved and endorsed in full by Council with two additional conditions:

ITEM **LTC RECOMMENDATION JUNE 2021 - SANTA SOPHIA CATHOLIC COLLEGE GABLES - PROPOSED PARKING RESTRICTIONS AND LINE MARKING PLANS**

RESOLUTION

1. Council approve the attached signposting and linemarking plan at Attachment 1 (ECM# 19519569) subject to:
   a) the W5-10 (Speed Hump) advisory signs on the approaches to the raised pedestrian crossing on Road B (Lakefront Crescent) be supplemented by 25kph advisory speed limit (W8-2) signs;
   b) the 'No Stopping' signs on northern and southern sides of Red Gables Road, directly east of Fontana Drive to indicate both directions (i.e. R5-400(L&R) instead of R5-400(L) or R5-400(R));

2. The cost and installation of all signage and line marking is to be undertaken by Stockland or Santa Sophia Catholic College inclusive of any changes to times required on the signs if the non-standard school zone times are approved.

Figure 7: Council Resolution (27 July 2021)

In addition, Council has requested additional footpath width along the DOPU area on Fontana Drive to be constructed prior to the start of Term 1, 2022. The School has agreed to the additional footpath width and this will be implemented prior to the start of Term 1, 2022.

The Council correspondence regarding the signage and linemarking plan and the additional footpath width is attached in **Appendix H.**

2.4 On Site Parking Provision

Ason Group previously prepared a Transport and Accessibility Impact Assessment (TAIA) dated 15th May 2019 which assessed the parking requirements for the School as well as the arrangement of the DOPU area. In addition, following comments from the relevant authorities, Ason Group provided a TN dated 19th December 2019, which addressed the comments raised including the parking provision.

As outlined within the TAIA, the School's parking provision has been assessed against The Hills Shire Council's DCP parking requirements under The Hills DCP 2012 Part C Section 1, as well as investigations of similar schools to determine an appropriate provision. The following breakdown is provided.

Allocation of the staff parking spaces is at the School's discretion.

Table 7: Parking Provision

Land Use	Parking Type	Parking Location	Parking Provision
CELC	Staff	Off-site	6
	DOPU	On-site	10
Education Establishment	Staff	Off-site	104
	Year 12	Not permitted to drive	0
	Visitor	Local road network	25
	Total		**145**

With consideration for the CELC, this parking is accessed via Red Gables Road to the south of the Site.

Consultation with the School has detailed that it is CEDP policy that senior students are not permitted to drive to and from school. As such, this informed the TAIA as well as this GTP.

Separate to the parking provision, the two areas dedicated for DOPU provide a total of 40 spaces. These spaces are split between Fontana Drive (28 spaces) for senior students, and Road B (12 spaces) for primary school students. This was addressed within the TN and is discussed in further detail below.

2.5 Cycling Provision

The School will provide a total of 252 bicycle racks primarily provided at the northeast corner adjacent to the plaza. It is important that students be kept informed of the rules and guidelines around cycling, such as not riding across the road and dismounting when using crossings.

It is understood that the students in Years 5 and above will be encouraged to travel to and from School via bicycle, in addition to walking. For students in Years 4 and below, it is recommended that bicycle travel to and from school occur escorted by a parent or legal guardian, as recommended by the NSW Department of Education.

The Department of Education recommends that primary aged students are safest when they are supervised by an adult when riding. Children under 16 can now ride on the footpath unless there are signs prohibiting cycling. It is recommended that the School undertake cycling safety training for all students, regardless of whether they choose to commute via active travel modes or not.

2.6 Bus Bay Provision

A bus bay adjacent to the School's western frontage on Fontana Drive in the kerbside lane has been provided and the location is detailed in **Figure 8**. The bus bay provides sufficient room for 5 buses and has been developed following consultation with Council, Busways, and TfNSW in December 2018, reflected in Condition E16(c) of SSD-9772. The bus bay provide a dedicated bus stopping area with sufficient queue capacity for the buses during the key peak periods and has been constructed for use on Day 1, Term 4 2021.

Figure 8:Bus Stop Location

2.7 Pick-Up / Drop-Off Provision

Two DOPU areas are provided for the Proposal to support the forecasted traffic demands. These DOPU areas are located at the northern frontage of future Road B (accommodating 12 spaces) and adjacent to the hockey fields along future Fontana Drive (able to accommodate 28 spaces). **Figure 9** details the locations of the DOPU areas relative to the Site.

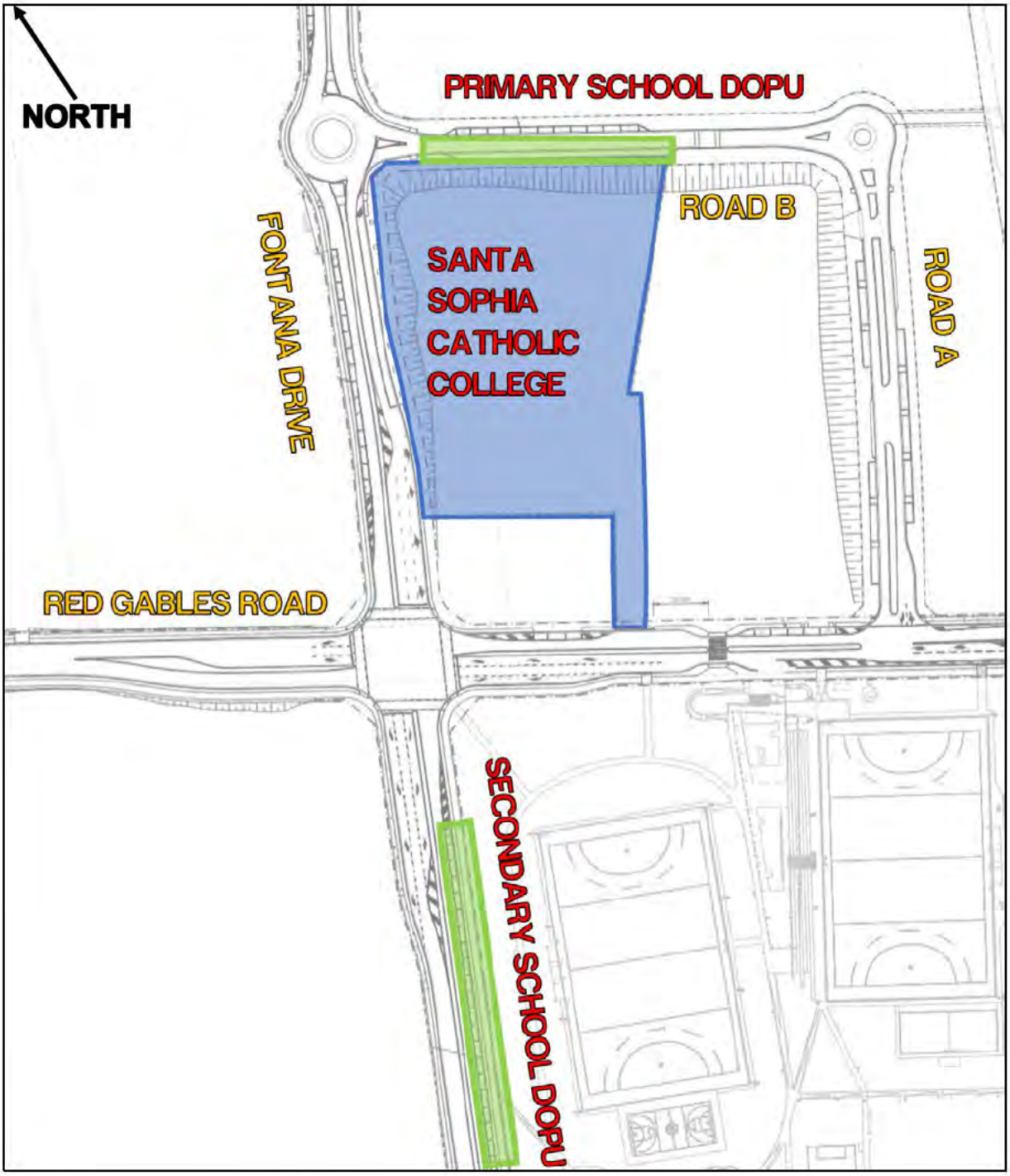

Figure 9: Proposed Pick-Up / Drop-Off Facilities

Based on the locations of DOPU areas, the Road B DOPU is dedicated for the primary school only while the Fontana Drive DOPU would be dedicated for the secondary school.

As previously mentioned, the Fontana Drive DOPU area is required in 2022 and will be provided prior to Day 1 Term 1, 2021.

2.8 Public Transport Services

Figure 10 shows that the Site is currently limited by public and active transport infrastructure as the current Site and surrounding areas are undeveloped greenfield land. However, the Box Hill North area is earmarked to receive additional bus routes, and pedestrian and cycling amenities as detailed in the sections below. The existing public and active transport options in the area as well as the indicative future transport options is presented in **Figure 10**.

2.8.1 Railway Services

TfNSW Guidelines states that train services influence the travel mode choices of areas within 800 metres distance (approximately 10 minutes' walk) of a train station. It is therefore noteworthy that the closest train stations are Vineyard Station and Riverstone Station although they are both beyond the recommended radius. Both stations are located on the Richmond Line and serviced by Sydney Trains T1 Western and T5 Cumberland line services.

Currently there are no bus routes connecting to Vineyard Station from the School, however there are bus routes connecting Riverstone Station to Box Hill North and are detailed further below.

2.8.2 Metro Services

TfNSW Guidelines states that metro services influence the travel mode choices of areas within 800 metres distance (approximately 10 minutes' walk) of a metro station. It is therefore noteworthy that the closest metro station is Rouse Hill Station although itself is approximately 8km to the south-west of the Site and therefore falls beyond the recommended radius. Rouse Hill Station is located on the Northwest Metro Line and provides access to Tallawong and Chatswood.

Connections to Rouse Hill Station from the School are provided via the bus network which is discussed below. Additional bus routes are being explored through conversations with Busways, CDC Hillsbus, and TfNSW.

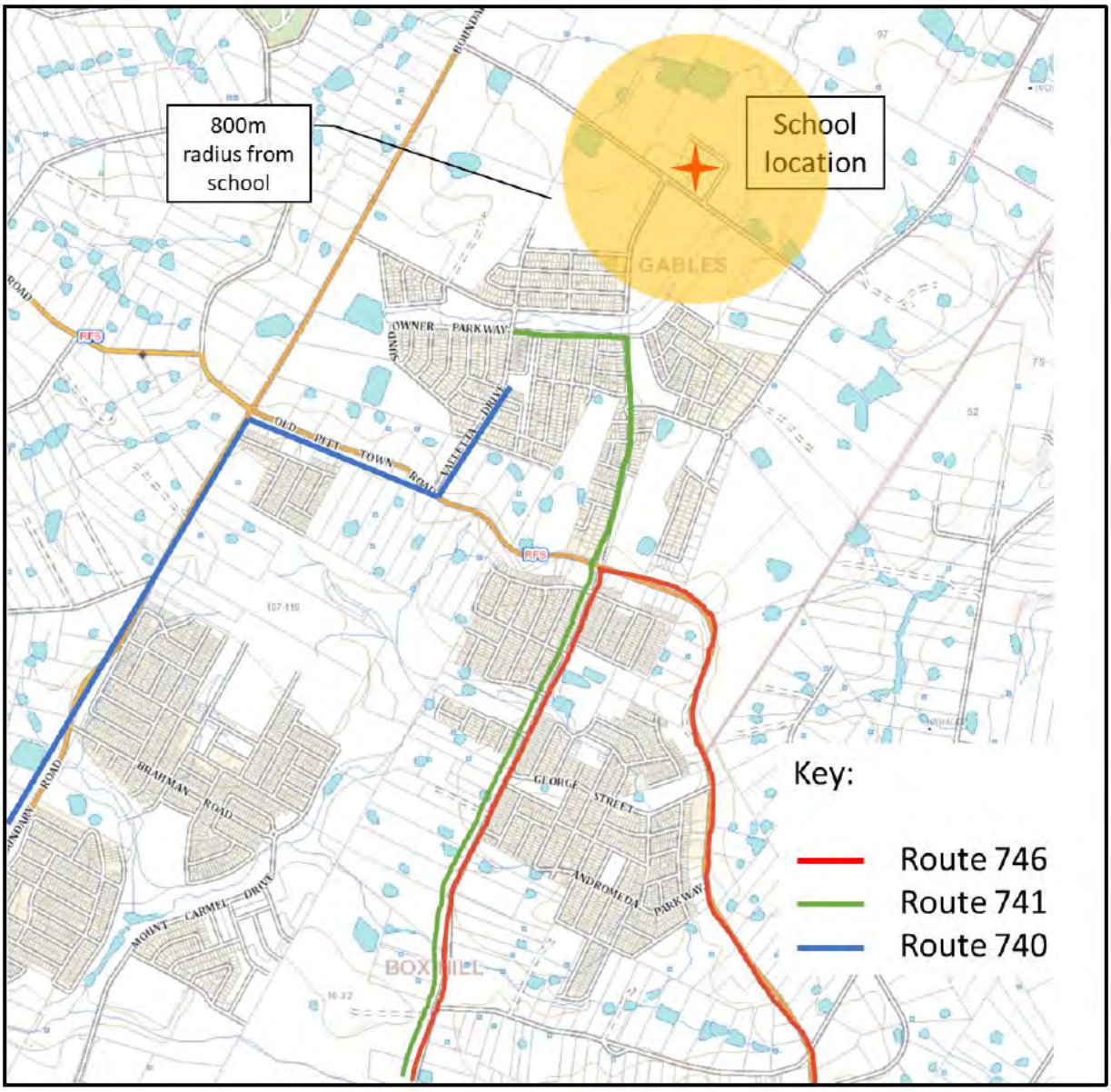

Figure 10: Existing public transport as of 5th October 2021

2.8.3 Existing Bus Services

Transport for NSW (TfNSW) Guidelines state that bus services influence the travel mode choices of sites within 400 metres (approximately 5 minutes' walk) of a bus stop. The closest bus stops to the Site are located beyond this recommended radius with the closest bus stops located approximately 1 km away. These bus routes and associated stops are located along Boundary Road, Terry Road and Old Pitt Road as shown on **Figure 10**.

The bus services that travel closest to the Site are detailed below:

- Route 740: providing a service every 30 minutes during the peak periods between Rouse Hill Station and Valletta Drive, Box Hill North.
- Route 741 providing services during the peak periods between Riverstone to Maraylya and Oakville via Box Hill North.
- Route 746 providing a service every 20-30 minutes during the peak periods between Riverstone to Rouse Hill Town Centre via Box Hill North.

The Site location is therefore currently lacking in public bus services that are accessible and within walking distance.

2.8.4 Future Public Bus Services

Despite the lack of existing public bus services, there are opportunities in the future for public bus provisions in the area to accommodate the transport demands of the North West Growth Area (NWGA) and the Box Hill North Precinct. Specifically, the North West Sector Bus Servicing Plan was adopted to increase the level of accessibility of public transport. **Figure 11** details the proposed bus network and routes detailed in the North West Sector Bus Servicing Plan.

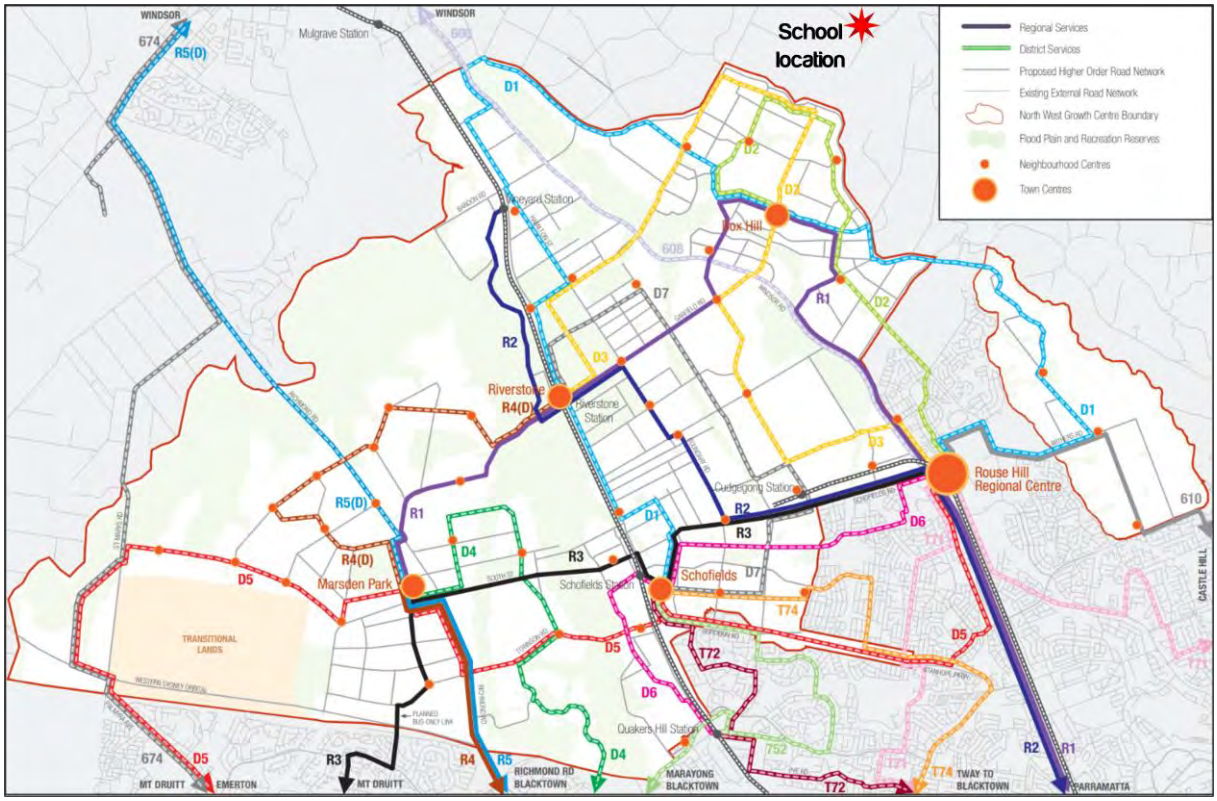

Figure 11: North West Sector Bus Servicing Plan (November 2016)

Furthermore, Council has approved a Development Plan and Transport Plan which identifies two indicative District Bus Routes within the Box Hill North Precinct. Proposed bus stop delivery for the two

routes form Part of Council's S94 Contributions Plans (2016), with stop locations and route alignments indicated in **Figure 12**. It is acknowledged that the bus routes are indicative and subject to final confirmation by TfNSW however the Transport Plan indicates that pedestrian demands and desire lines would further be substantiated by the public transport linkages.

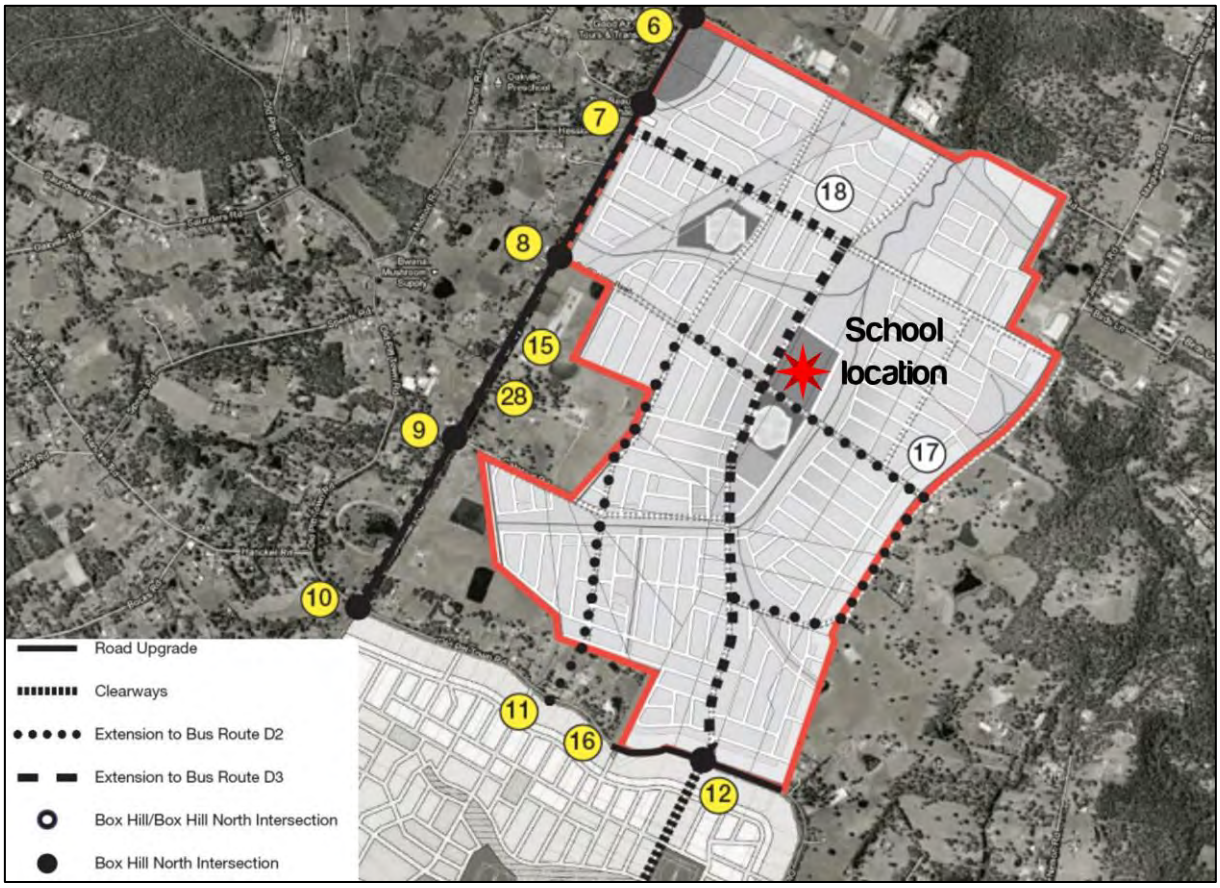

Figure 12: Approved Future Public Transport Plan (2015)

However, none of the future planned bus routes shown in **Figure 11: North West Sector Bus Servicing Plan (November 2016)** or **Figure 12: Approved Future Public Transport Plan (2015)** have been delivered in time for Day 1, Term 4 2021 and nor have they been planned for Term 1, 2022.

2.8.5 School Bus Services

Hillsbus with TfNSW approval has proposed four school bus routes between the School and Rouse Hill Station:

- One morning and one afternoon express service between Rouse Hill Station and the school
- One morning and one afternoon all stops service between Rouse Hill Station and the school via Hynds Rd and Mount Carmel Dr.

- One morning and one afternoon all stops service between Rouse Hill Station and the school via Old Pitt Town Rd and Milford Dr.
- One morning and one afternoon all stops service between Clower Ave, Rouse Hill and the school via George St and Mason Rd.

The stops along the routes proposed has been mapped and is attached in **Appendix D**.

These routes will be operational from Day 1 Term 4, 2022.

2.8.6 Chartered School Bus Services

There is currently no public bus service connecting the students to the north west of the school (Pitt Town, Windsor direction) and for Term 4 2021 there are 56 students currently enrolled in the school coming from that area. The number increases to 180 in Term 1 2022.

Following months of engagement with TfNSW and Busway, TfNSW has informed the school that at this time it has not been possible to extend or divert buses without significant impacts on the existing services for Term 4, 2022. However, TfNSW will continue to work with the bus operators and the transport coordinator at Santa Sophia during Term 4 2021, to look for further opportunities to provide school services in 2022.

Therefore the current chartered school bus carrying students from the Pitt Town / Windsor area to the temporary campus in Schofields will be retained to service the Box Hill campus until a school bus route can be provided.

2.9 Active Transport Connectivity

2.9.1 Pedestrian Accessibility

Five pedestrian access points to the School are proposed which are shown in **Figure 13**.

The access points are as follows:

1. Fontana Drive access adjacent to bus bays.
2. Road B access adjacent to the drop-off / pick-up area and the main reception.
3. Plaza access.
4. CELC access via private road from Red Gables Road.
5. Private road access via Red Gables Road.

It should be noted however that the private road access via Red Gables Road will be restricted to staff members and secondary school students only.

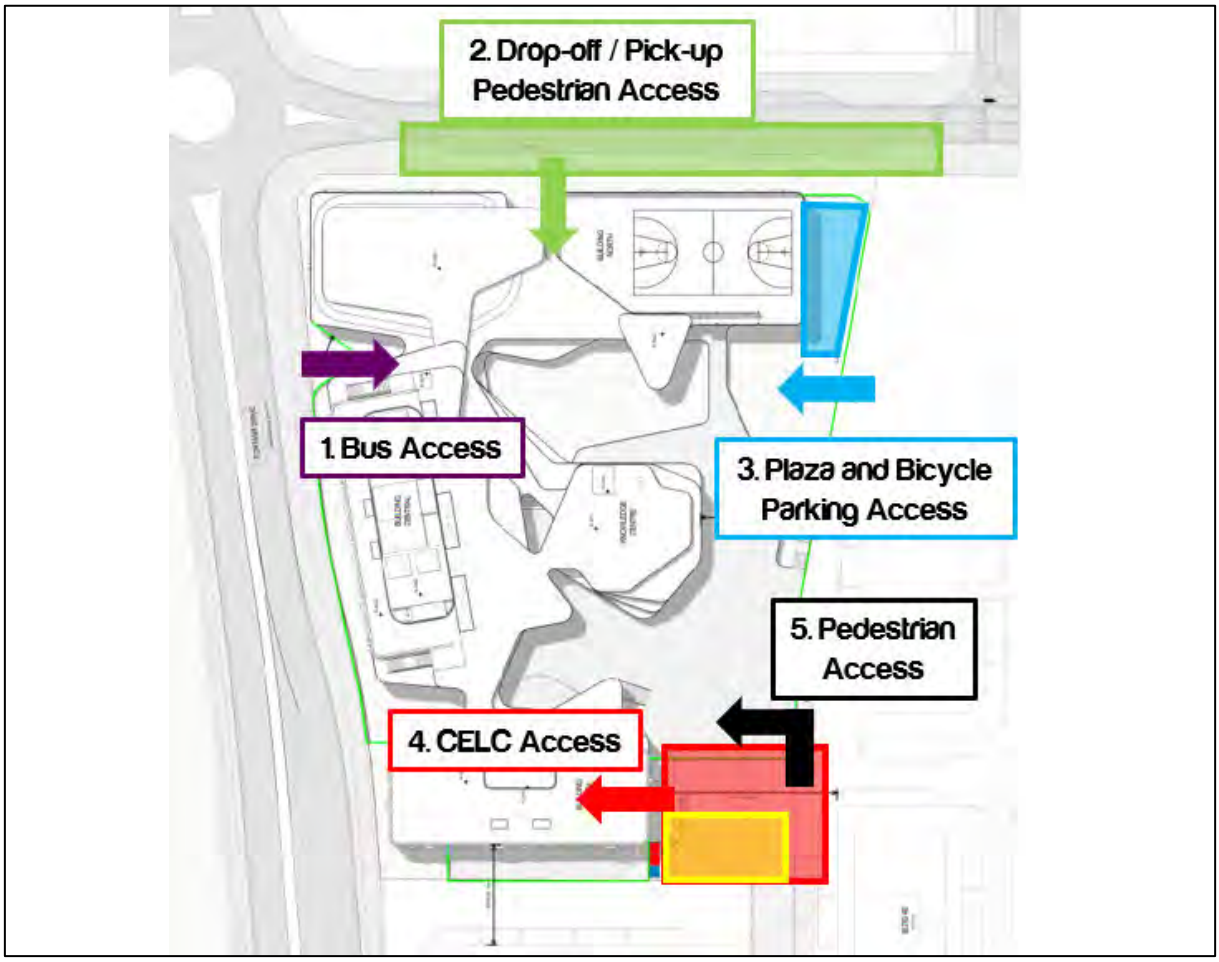

Figure 13: Pedestrian Access Points

In addition to pedestrian access points indicated above, two crossing locations have been planned to facilitate movement across Red Gables Road and Road B, as indicated in **Figure 14** below. These locations will facilitate movements from the adjacent DOPU locations to the School.

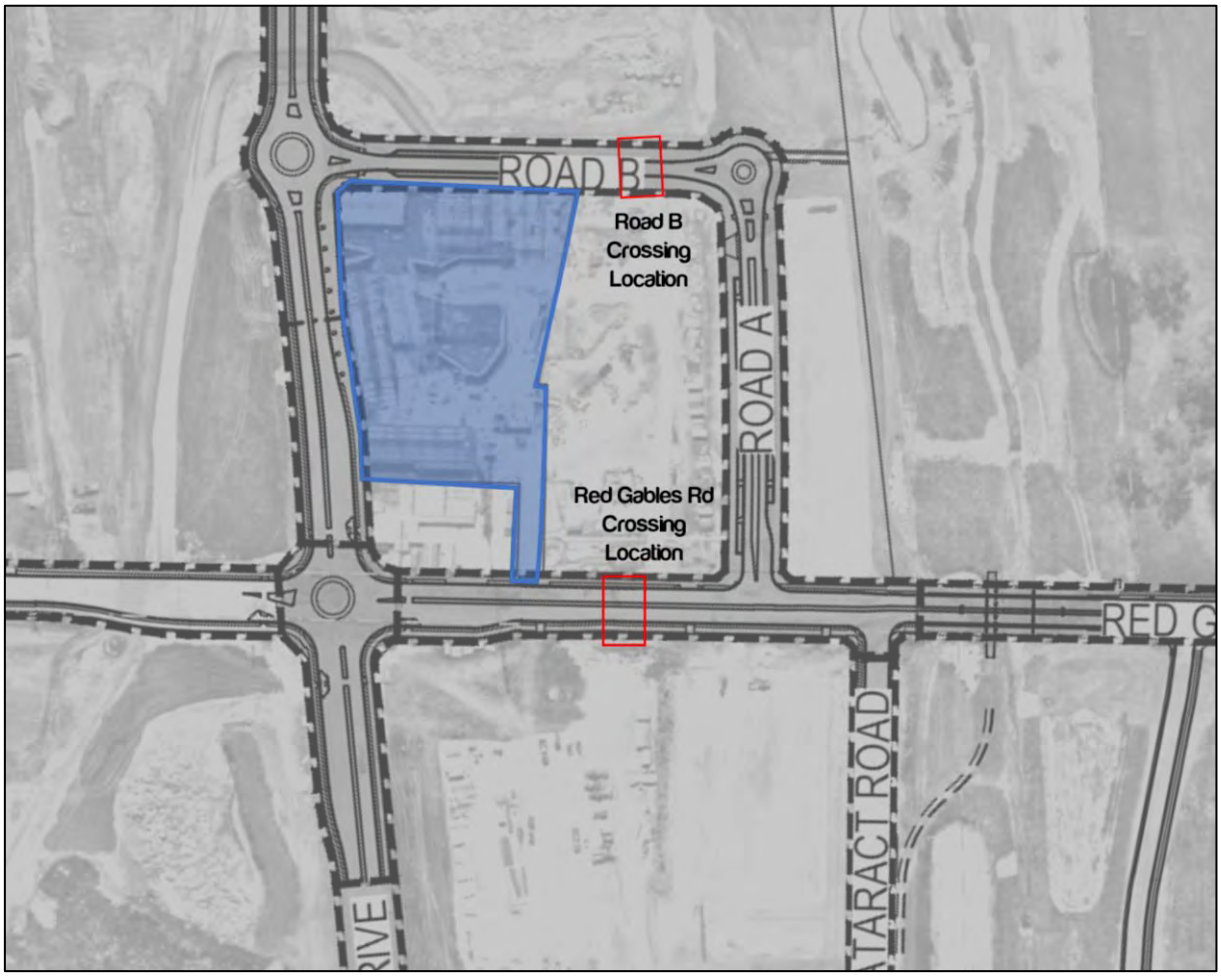

Figure 14: Pedestrian Crossing Location

2.9.2 Future Pedestrian and Cycle Network

The Hills Shire Council has provided an indicative pedestrian and cycle network for the future community at Box Hill North in The Hills Shire Development Control Plan 2012, Part D Section 17 – Box Hill North. The network map details a proposed on-road cycle path along Fontana Drive that will border the Gables Town Centre to the west. The on-road cycle path serves as a continuous cycling route spine from the Gables Town Centre to Terry Road in Box Hill to the south.

Shared Pedestrian and Cycle Paths would border the west and south street frontages of the Gables Town Centre at Fontana Drive and Red Gables Road. The indicative pedestrian and cycling amenities are detailed in **Figure 15**.

This pedestrian and cycle network will facilitate access to and from the School noting that footpaths (shared or otherwise) are provided along all roads, however it is noted the road network is not fully constructed at this time.

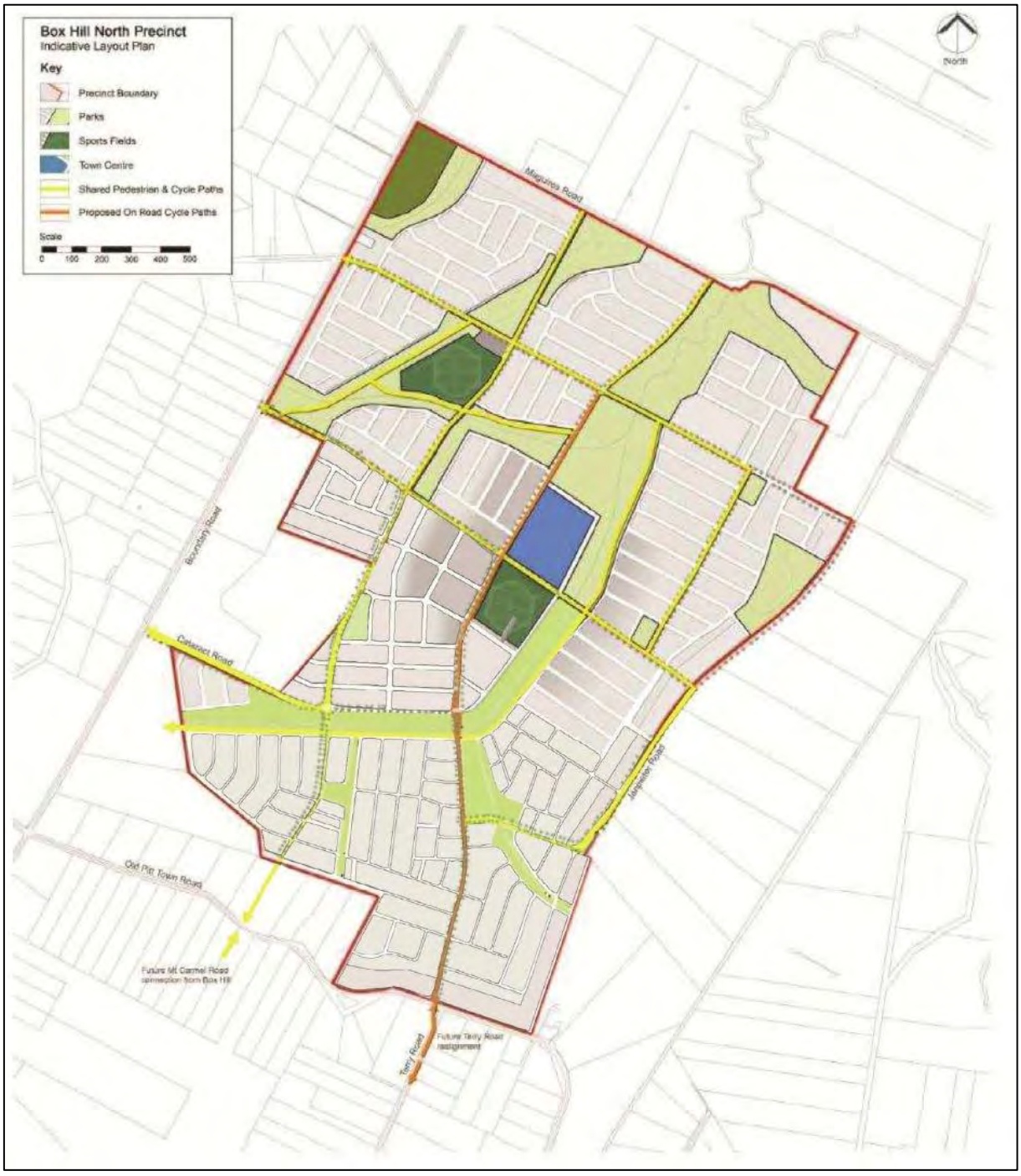

Figure 15: Indicative Box Hill North Pedestrian and Cycle Network

3 Operational Management Measures

3.1 Plan of Management

The School can and will coordinate pedestrian and vehicle on-site and within the local road network to meet operational requirements and ensure the safety of students with maintaining efficiency on-street. The following management measures are proposed.

3.1.1 Plan Maintenance

This Plan shall be subject to ongoing review and will be updated as necessary in response to changing requirements. The Plan will be reviewed initially within 6 months of Day 1, Term 4, followed by a second review 6 months after the initial review.

Beyond the initial two reviews, the Plan will be reviewed yearly.

3.1.2 Key responsibilities of School Management

School Management shall:

- Ensure all staff are provided with sufficient training to undertake the required tasks. This includes responsibility for measures to ensure that all staff, parents/carers, visitors, and students are familiar with site specific rules through appropriate site induction procedures.
- Be familiar with and address their respective duty of care requirements in accordance with the applicable state Work Health and Safety legislation.
- Ensure WHS Incident logbooks are maintained and undertake necessary action(s) in relation to any reported issues.

3.2 Hours of Operations

The School would be accessible from 6:00AM – 6:30PM on weekdays with restricted access outside of these hours. As detailed previously, the Proposal provides for an Out of School Hours Care (OOSH) program (part of the CELC programme) which requires students to be signed in/out. The hours of operation are as follows:

- Before school: 6:00AM – 8:10AM
- After school: 2:30PM – 6:30PM

The effect of an OOSH program will serve an improvement to overall traffic conditions, as the traffic peak can be distributed over a number of hours across the day. This would reduce the traffic pressure on the key intersections during the school peak hours.

Furthermore, it is likely that activities for the community use of facilities would not generate traffic volumes higher than the school peak hours. These later hours would generally be outside of typical peak periods, school and road network peaks and therefore suggest that the background traffic is lighter and resulting traffic impact is not expected to be significant.

3.2.1 Out of Hours Access

Regarding the general site as a whole, access to the School will be restricted at these times:

- weekdays: before 6:00am and after 6:00pm
- weekends and public holidays: before 8:00am and after 10:00pm

Out of Hours School Care (OOSH) program (part of the CELC) will have the following hours of operation

- before School: 6:00am – 9:00am
- after School: 4:00pm – 7:00pm

The CELC will have the following hours of operation:

- weekdays: 6:00am – 6:30pm
- outdoor play hours: 7:00am – 6:00pm

For the multipurpose hall for community use, the hours of operation will be:

- weekdays: 3:00pm – 10:00pm
- weekends: 8:00am – 10:00pm

For the café / canteen, the hours of operation will be:

- weekdays: 7:00am – 10:00pm
- weekends: 8:00am – 10:00pm

3.2.2 Staggered Start and Finish Times

The implementation of staggered start and finish times will provide an opportunity for the School to manage and control staff and student movements in a safe and efficient manner. The proposed start / finish times are:

- Primary hours: 8:10am – 2:30pm
- Secondary hours: 8:00am – 2:15pm

Upon implementation of the staggered start and finish time in D1 Term 4, the School will review the effectiveness of the staggered start and finish times in peak spreading. Should excessive queuing, congestion and parking issues be observed as part of the monitoring, further refinements to the staggered start and finish time will be considered and implemented.

3.3 Pedestrian Access

It is considered that, in the earlier stages (2021 – 2022) of school operations, the number of students where walking is the primary travel mode to the school is anticipated to be low, with the predominant number of students attending the school via public or private transport modes. This is due to incomplete road and walking infrastructure.

As surrounding residential developments complete and occupied, and with the completion and delivery of walking and cycling infrastructure, students walking to the school is expected to increase in future years (2023 and beyond).

At this stage, the OTAMP document will form the basis for future pedestrian studies and additional connectivity that will be required to facilitate the growth of pedestrian movements.

The access points and crossing locations are presented in Section 2.9.1 and the figure below demonstrates pedestrian routes from key areas servicing the school.

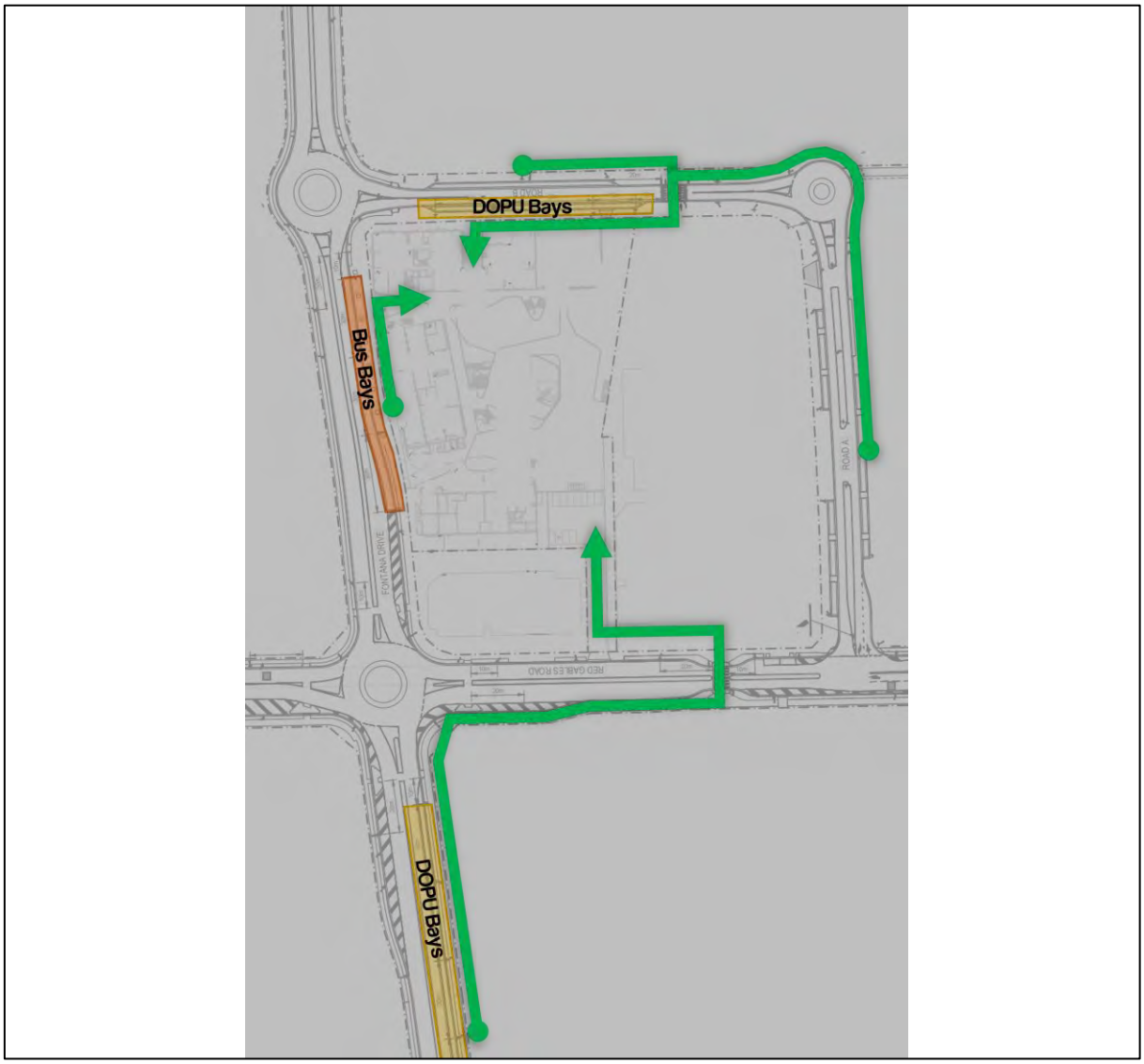

Figure 16: Pedestrian Access Routes

Prior to the first bell and at end of school day, staff members will be monitoring all access points and both DOPU areas. Designated staff members will be trained to act as school crossing supervisors from D1 Term 4, 2021 until formal approval is secured from the TfNSW School Crossing Supervisors programme for School Crossing Supervisors to manage pedestrian crossings on Road B and Fontana Drive.

Application will be made to the TfNSW School Crossing Supervisors programme for two School Crossing Supervisors to ensure safe children crossing at the Road B and Fontana Drive pedestrian crossing areas during School AM and PM peak hours.

3.3.1 Visitor Access

Walk-in visitor access to the school will be via the main access gate on Road B and are required to check in at the community reception area. All access points will be secured outside of school operating hours with access provided to staff members and students. The means of secure access is to be determined by the School administration.

3.3.2 Student Parking

No student with driver's license will be allowed to drive to / from the school. The policy will be communicated by the school to all students and families via School communication.

3.3.3 Out of Hours Events

Prior to any larger scale out of school hour activities (fete, sporting events, carnivals, etc), an Event Traffic Management Plan specific to the activity should be prepared to address traffic and parking management matters.

3.3.4 CELC Access

The CELC facility which operates as the OOSH before and after school is located in Building South which is accessible through the southern gate on Fontana Drive. While it is anticipated that the majority of parents dropping off / picking up students from the CELC would be doing so by car, pedestrians are directed to use the intercom at the southern gate.

3.4 Vehicle Access

As detailed in Section 2.2, the School provides 2 DOPU areas and a staff carpark. Access to these areas at opening is detailed in **Figure 17** and at full development in **Figure 18**.

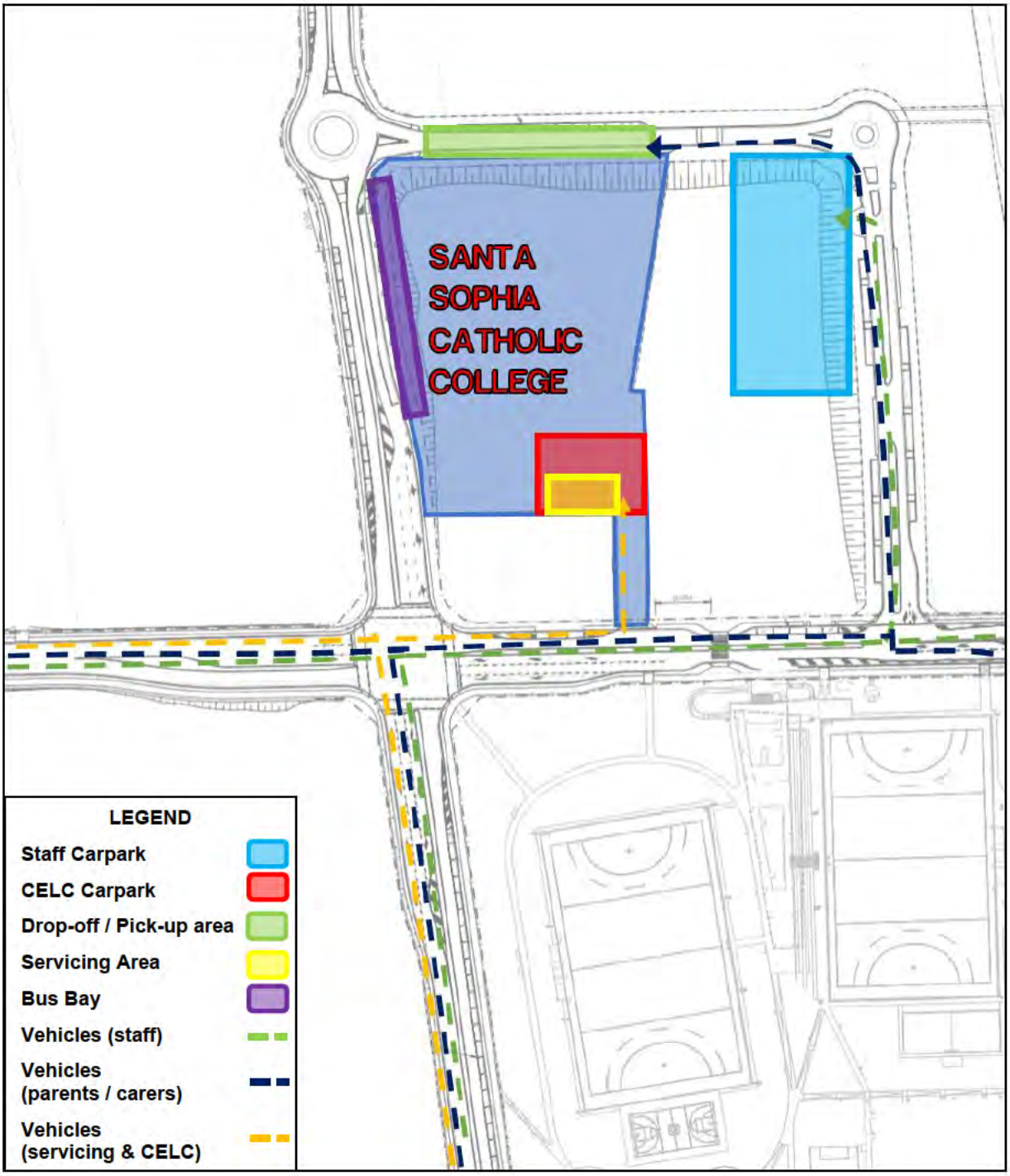

Figure 17: Vehicles Access – Opening Day (Day 1, Term 4 2021)

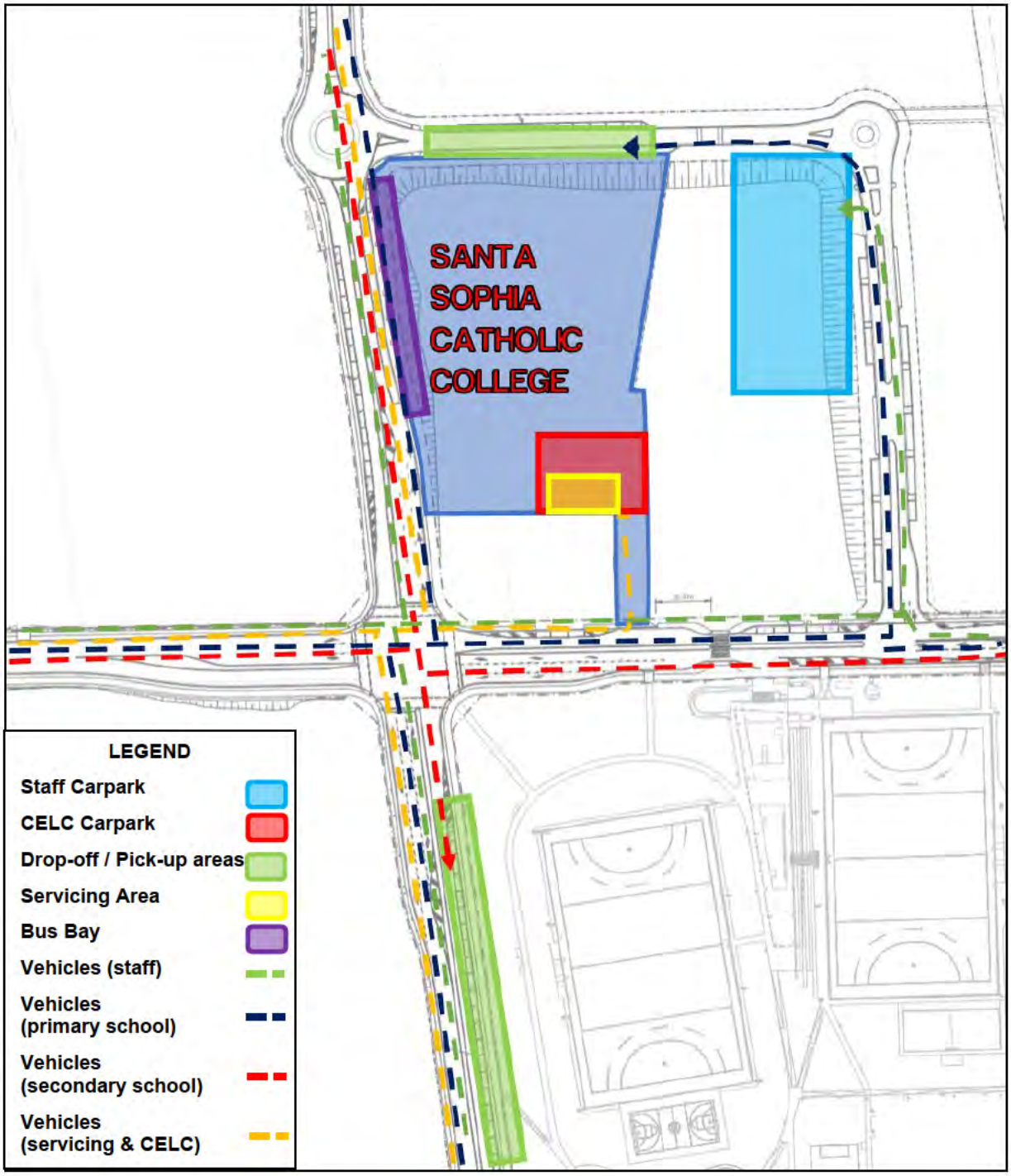

Figure 18: Vehicles Access – Full Development

With reference to the second DOPU site, situated south of the school – will be operational prior to T1 2022.

The management procedures of these amenities are discussed below.

3.4.1 Bus Access

Noting the provision of a bus bay suitable for 5 buses along the western boundary on Fontana Drive and with reference to **Figure 8**, the bus bays along Fontana Drive will be monitored by two staff members with this number to potentially increase with the continued increase of students. These staff members will assist with embarking and disembarking and will organise student into separate groups for each of the bus routes. As the buses arrive, they will be announced via megaphone with students to remain on school grounds until the bus has arrived.

This staff management will be reviewed as part of the annual review and monitoring process.

To access the bus bays prior to the completion of Fontana Drive, a turning circle will be provided to permit buses to perform a U-turn manoeuvre and access the bus bays.

For special events such as excursions, these bus stops will also be utilised as a waiting bay as necessary. Students will be mustered on-site, and staff members will assist with embarking and disembarking, as per standard operation.

3.4.2 Servicing

The Proposal provides a loading dock accessible via Red Gables Road within the CELC pick-up / drop-off area. An additional loading area available along the Road B site frontage within in the pick-up / drop-off area is also provided for infrequent deliveries. Information provided by the CEDP details the number of vehicles accessing the site and the size of vehicles. **Table 8** details the vehicle size and frequency of deliveries / servicing.

Table 8: Service / Delivery Vehicle Size and Frequency

Service / Delivery Purpose	Vehicle Size	Frequency
Food Delivery	Up to and including 8.8m Medium Rigid Vehicle	3 times per week
On-site repairs / construction works	Up to and including standard B99 vehicle	As necessary
Creative Hub Deliveries	Up to and including 12.5m Heavy Rigid Vehicle	2 – 3 times per year
Waste Collection	A private contractor approximately 11m in length	5 times per week

Deliveries would be strictly managed to ensure that all deliveries occur outside of the OOSH and School peak periods, with the minimum movements. The Operational Waste Management Plan prepared by MRA Consulting Group details that all waste collection will only occur after school hours. The Operational Waste Management Plan is attached in **Appendix E**.

Access to the water services system maintained by Flow System is via Road B. When access is required during school hours, anticipated for emergency maintenance purpose, staff member of the school will need to manage vehicle access to / from the water services system to ensure road user safety is maintained at all times. Regular maintenance is to occur outside school operation hours.

3.4.3 Substation Access

The substation for the School is located on the Fontana Drive side of the South Building. A Heavy Rigid Vehicle (HRV) used by Ausgrid for servicing can access the substation by reversing off Fontana Drive as shown below:

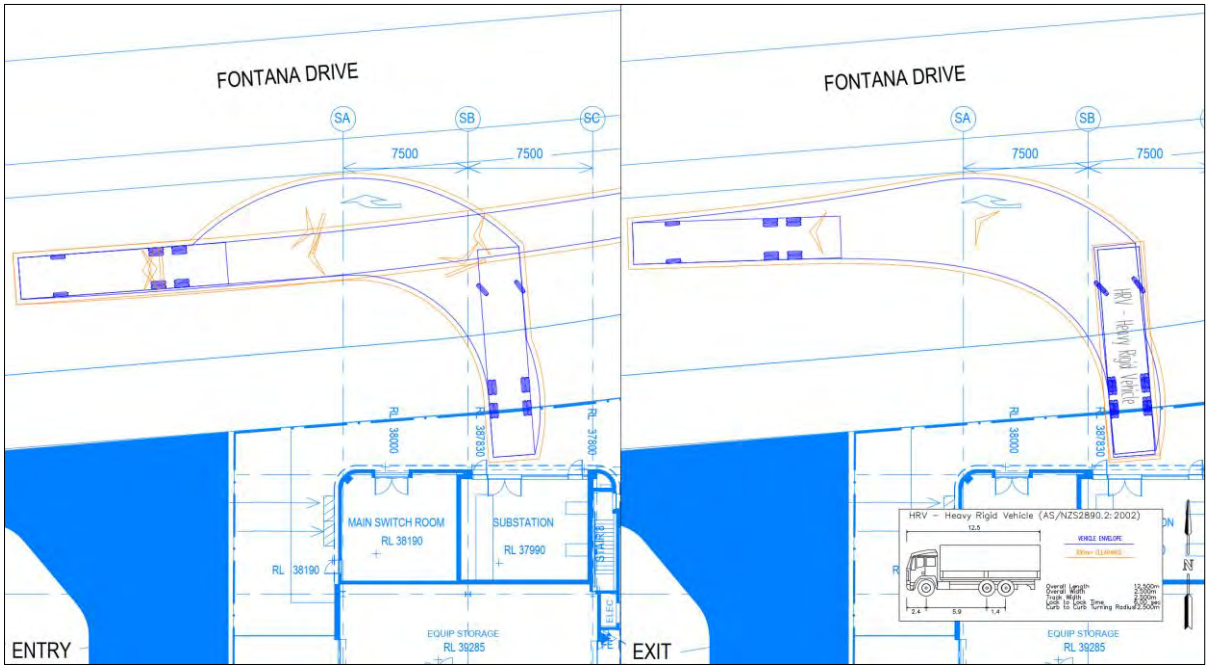

Figure 19: Substation Access Swept Path Assessment

Given length of the HRV and proximity of the substation to the road, the southbound side of Fontana Dr will have to be closed during substation servicing and a Traffic Guidance Scheme to be prepared by service provider (Ausgrid) prior to substation access is required to redirect vehicles in the area.

Regular maintenance is to occur outside school operation hours and the service provider is to schedule the maintenance visit with the School. When emergency access is required during school hours, it is likely that the school will need to be evacuated first and the Fontana Drive is to be closed under emergency access provisions.

3.4.4 CELC Carpark Access

As per Figure 17 and Figure 18, vehicles accessing the CELC will turn left into the private roadway from Red Gables Road and will utilise one of the available spaces. Vehicles will then park on-site, and children will be escorted by parents / carers to the CELC.

This arrangement is consistent on opening day and at full development.

3.4.5 Staff Carpark Access

As per Figure 17, at initial School opening, vehicles accessing the temporary staff carpark will turn into Road B from Fontana Drive and the utilise the access on Road A. At full development of the town centre, vehicles accessing the temporary staff carpark will be maintained from any of the surrounding roads and the internal town centre road network as per Figure 18. Parking allocation is determined by the School administration.

The permanent staff carpark location will form part of the Stockland Town Centre Development, where the future access is yet to be determined.

3.4.6 Visitor and Community Access

With reference to the TAIA and TN, visitors and community members arriving at the School during standard operation will utilise the surrounding road network which has some 625 spaces.

For events held outside of standard operating hours, the staff carpark (temporary and permanent) will be made available for visitors and the community to utilise. This information will be distributed with information regarding the event and will form a part of any Event Plan of Management, which may trigger the need for an Event Traffic and Transport Management Plan. The information to be circulated by the School will include:

- Parking locations.
- Management procedures.
- Events times.

3.4.7 Pick-Up / Drop-Off Operations

As detailed in Section 2.7, at full development of the School, two DOPU areas are proposed for the School to support the forecasted traffic demands - one on Road B for primary school students (Kindergarten to Year 6) (12 spaces) and the other on Fontana Drive for secondary school students (Year 7 to Year 12) (28 spaces).

With consideration for the assessment of the DOPU area undertaken in the TAIA and the TN prepared by Ason Group, the anticipated traffic generation of the School at opening during the morning and afternoon 10-minute peak periods are as follows:

- Morning 10-min peak period: 97 total vehicle trips
- Afternoon 10-min peak period: 92 total vehicle trips

Where a vehicle trip refers to the movement of a vehicle entering the Site, and exiting the Site, as two separate trips.

As per the TAIA and the TN, a turnaround time of 1 minute will be achieved through the implementation of the strategies provided in more detail below. In this regard, the Road B DOPU area can accommodate a total of 120 vehicles per 10-minute period. As such, the Road B DOPU area can accommodate the demand at opening.

Noting the proposed growth of the School, in 2022 the anticipated traffic generation is as follows:

- Morning 10-min peak period: 150 vehicle trips
- Afternoon 10-min peak period: 139 vehicle trips

In this regard, the demand for the Road B DOPU area is expected in 2022. At this time, the Fontana Drive DOPU area – which provides a further 28 spaces – will be utilised to alleviate congestion associated with the increase in demand. As per section 2.2.2, the Fontana Drive DOPU area will be online prior to T1 2022.

At Full Development, the School is anticipated to generate the following traffic volumes during the 10-min peak periods:

- Primary School:
  - Morning 10-min peak period: 94 vehicles
  - Afternoon 10-min peak period: 122 vehicles
- Secondary School:
  - Morning 10-min peak period: 132 vehicles
  - Afternoon 10-min peak period: 74 vehicles

Therefore, the provision exceeds the anticipated peak demand and therefore there would be minimal queuing within the local road network.

The management procedures and strategies, and staff responsibilities are detailed further below.

3.4.8 Pick-Up Procedures

- Vehicles are to access the student Pick-Up/ Drop-Off area along future Road B for the Primary College and future Fontana Drive for the Secondary College.
- Authorised staff will be on hand to supervise the drop-off at the drop-off zone approximately 1 hour after the end of school.
- Two staff members will manage each DOPU area.

- The School is to request parents / carers to display a colour-coded sign with their child's name on the windscreen or passenger side window. The colour will correspond to a year group.
- When the dismissal bell goes, the students go to their designated respective seating area.
    - Secondary school students will walk across Red Gables Road towards the Fontana Drive DOPU area.
    - Primary school students will walk towards the DOPU area on Road B.
- Parents / carers pull up in the zone and the authorised staff calls out the name of the student.
- Student is guided by staff to get into vehicle and assisted with any oversize bags or equipment, and vehicle drives off.
- Similar to a taxi rank, parents / carers are advised not get out of their car but continue to move forward with the queue of cars.
- Should parents / carers wish to assign a representative pick-up their child, a note should be provided to the child's teacher prior. The adult assigned to pick-up the student will be required to show identification.
- Only persons assigned to the school by parents / carers on the permission note will be permitted to pick-up students.
- Double parking is not permitted.

3.4.9 Drop-Off Procedures

- Vehicles are to access the student DOPU area along future Road B for the Primary College and future Fontana Drive for the Secondary College.
- Authorised staff will be on hand to supervise the drop-off at the drop-off zone approximately 1 hour before the start of school.
- Two staff members will manage each DOPU area.
- Similar to a taxi rank, parents / carers are advised not get out of their car but continue to move forward with the queue of cars.
- Parents / carers are advised to remain in the car and an authorised staff member will assist students in exiting the vehicle quickly and safely.
- Parents / carers are reminded to arrive and depart the zone in a safe manner.

The School Drop-off and Pick-up, Organising the initiative as prepared by TfNSW provides additional information around school DOPU areas and is included in the Appendices.

3.4.10 Staff Responsibility

It is advised that staff monitor the operation of the proposed DOPU facility for safety hazard breaches. Should vehicles be observed to undertake illegal manoeuvres or parking behaviour such as double parking, drivers can be identified through the student and correctional action taken to educate drivers of appropriate and responsible driving behaviour. Such enforcement will reduce the occurrence of this behaviour and facilitate the safety and efficiency of the operation of the DOPU facilities.

3.4.11 DOPU Maintenance

It is anticipated that the operation of the DOPU areas would be reviewed in accordance with section 3.1.1, and will be undertaken in consideration of College operations in consultation with Council, and local bus operators.

Investigations into the public transport provision and modal splits of students will also provide insight into potential methods at accommodating the demand of the pick-up / drop-off area. This traffic management plan will be an evolving document which will undergo renewal and revision.

3.4.12 Driver Code of Conduct

All drivers are to operate in a manner consistent with the requirements of applicable Work Health and Safety (WHS) legislation and other business specific policies.

All commercial vehicle drivers are to be familiar with the Driver Code of Conduct before attending the Site. A copy of the Code is included in **Appendix F**.

3.4.13 Bus Bay Access and Operations

Before 2023 the only buses that would access the Bus Bay are school buses run by HillsBus / CDC or Busways and chartered school buses as it is unlikely the public bus routes will be extended to Santa Sophia prior to Red Gables road opening in full. The school buses and chartered buses have set arrival and departures time and do not need to be managed to access the Bus Bay.

School policy is for staff members to hold all students needing to use the regular school or chartered bus services inside the school gate north of the central building and releasing the students when their bus arrives in the PM. In the AM a staff member will manage the Bus Bay area to ensure all students leave the bus only when the bus is stopped in the Bus Bay and proceed directly into the School.

3.5 Day 1 Term 4 2021 Access

The School, Bus Bay and northern DOPU location will be completed prior to T4 2021, with the second DOPU location south of the school coming online prior to T1 2022 with the road network detailed per **Figure 6**: Bus Bay & DOPU Opening Dates.

Vehicular / pedestrian / cyclist access to the School will be solely from the south through Fontana Drive until the link between Boundary Road and Red Gables Road is opened early 2022.

All vehicular traffic will be directed to turn right onto Red Gables Road from Fontana Drive then left to Road A to access the northern DOPU or Bus Bay shown in **Figure 20**: Term 4 2021 Access below.

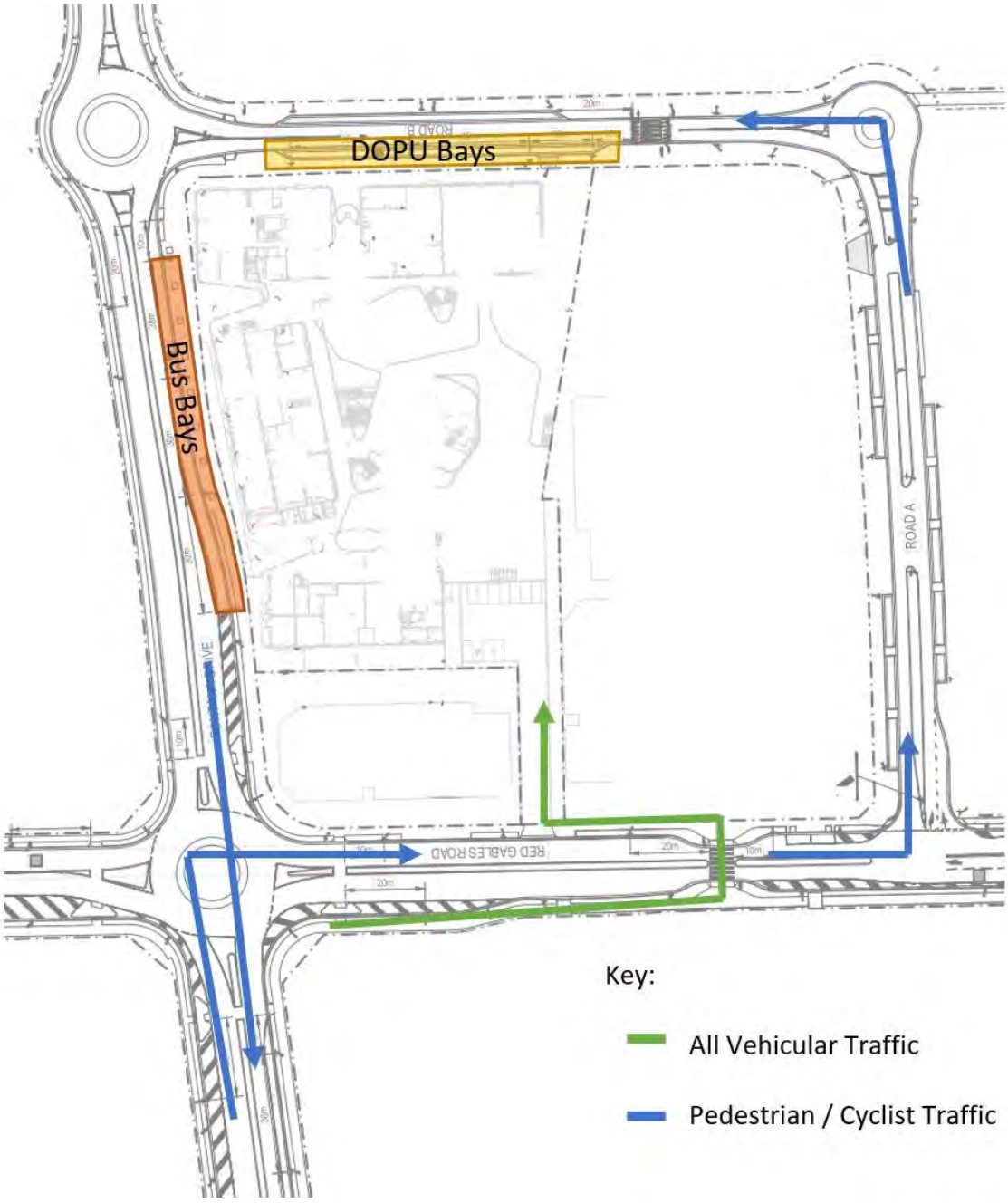

Figure 20: Term 4 2021 Access

School bus services will be available from Day 1, Term 4 2021 and students will access the school from the bus stop on Fontana Drive. The Bus Bay will be managed by staff in Term 4 2021.

Students being dropped off / picked up by private vehicle will access the school from the northern DOPU location on Road B. The northern DOPU and the crossing on Road B will be managed by staff in Term 4 2021 but the Red Gables Road crossing will not be as without the Fontana Drive DOPU the expected pedestrian numbers from the southern will be negligible.

4 Monitoring and Review Process

4.1 Travel Plan Coordinator

A staff member within the School will be appointed as the Travel Plan Coordinator (TPC) and be responsible for:

- Engagement with the staff and parent bodies,
- Implementation and promotion of the Plan actions,
- Monitoring the effectiveness of the Plan (refer to monitoring requirements outlined in **Section 4**) and ongoing maintenance of the Plan,
- Provide advice in relation to transport-related subjects to staff, management, and visitors, as required, and
- Liaise with external parties (i.e. Council, public transport, and car share operators) in relation to Travel Plan matters.

This role will be staffed by the school as an internal position and the role will be voluntary with no financial incentives given.

4.2 Plan Maintenance

This Plan shall be subject to ongoing review and will be updated as necessary in response to changing requirements. The Plan will be reviewed initially within 6 months of Day 1, Term 4, followed by a second review 6 months after the initial review. Beyond the initial two reviews, the Plan will be reviewed yearly. Regular reviews will be undertaken by the Travel Plan Coordinator (TPC), as required.

Key considerations regarding the review of the Plan 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, new roads, etc. In this regard, review of the OTAMP may be undertaken on a more frequent basis,
- To identify any shortfalls and develop an updated OTAMP to address issues.
- To identify changes relating to assessments undertaken as part of the GTP and how they impact mitigation measures and actions.
- To capture key changes relating to residential developments in the surrounding locality, and how these will impact based on the Schools' catchment zone from a walking and cycling perspective.

4.3 2022 Anticipated Operational Changes

The intersection of Boundary Road and Red Gables Road will open early Term 1 2022 which will provide access to the School from the west but the vehicular access to the School will likely to remain the same as **Figure 20**: Term 4 2021 Access.

The Fontana Drive DOPU will be available for Term 1 2022 at which time the School will ensure staff will be managing both the DOPU and the crossing on Red Gables Road. Vehicular access to the DOPU will be from Red Gables Road or southbound on Fontana Drive following the same vehicular traffic route outlined in **Figure 20**: Term 4 2021 Access**.**

Red Gables Road to the east is not expected to open until December 2022 and the Red Gables Road / Fontana Drive intersection update to signalised intersection well after 2022.

4.4 Monitoring and Review Actions

To assess the efficacy of the OTAMP, the following actions are to be undertaken by the TPC:

- Undertake community consultation to gauge feedback regarding implemented management plans and areas for improvement to improve traffic conditions.
- Periodic on-site review of facilities such as the drop-off / pick-up area, bicycle racks.

It is recommended that an initial audit be undertaken within 6-months of the school opening to establish baseline conditions as early as possible.

4.5 Feedback Framework

Following the actions undertaken as part of the review process, feedback is to be provided to key stakeholders including: the community, TfNSW, Council, and CEDP, detailing the efficacy of the OTAMP. The management plans will be adapted accordingly.

Appendix A

Author's CV

Dora Choi

Principal – Traffic Engineering

Email: dora.choi@asongroup.com.au

Phone: 0450 923 889

Dora has 20 years of professional experience across the fields of urban planning, and traffic and transport engineering. With specialities in concept and schematic traffic design, road safety engineering, construction traffic management planning and major event traffic and transport operations planning, Dora focus on achieving practical, customer centred solutions commensurate with the project type, purpose and level of user experience established in collaboration with clients, delivery partners and project teams.

Dora's expertise in land use development planning and design has specific focus on car park design, traffic management system design, and loading facilities design and design of traffic systems based on the operational requirements as well as future adaptability of spaces. Dora has been involved in a broad range of traffic and transport projects providing high quality service and end to end project advice to a range of public and private sector clients.

Dora has worked on a broad range of inter-disciplinary design teams where she collaborated with clients and consultants of various disciplines in achieving forward thinking outcomes that considers both current and future needs of end users.

QUALIFICATIONS & EDUCATION

- Post Graduate Diploma in Transport and Traffic (Monash)
- Post Graduate Diploma Planning & Design (Melbourne)
- Bachelor of Science (Auckland)

KEY SKILLS

- Transport Management and Operations Planning
- Transport Design
- Event Traffic and Transport Management Operations Planning and Delivery
- Stakeholder management

KEY PROJECTS

Warrick Lane Precinct, Blacktown NSW Blacktown City Council

The Warrick Lane Precinct (The Precinct) is located within the Blacktown City Centre, 500 metres east of Blacktown Railway Station. The 2.8-hectare site has been identified for redevelopment as part of the of the Blacktown City Centre Transformation. The objective of the transformation is to provide employment, housing, social, cultural, recreation and transport infrastructure within a framework of sustainability and design excellence.

Dora was engaged by Blacktown City Council to provide traffic and transport advice on the transformation project, and managed the delivery of a range of transport engineering output including schematic and detailed design input to the Project, Transport Impact Assessment in multiple phases, DA stage and Detailed Stage Construction Traffic and Pedestrian Management Plan preparation and worked closely with the broader project team.

Blacktown Health Precinct, Blacktown NSW Blacktown City Council

Blacktown Health Precinct is located to the east of the Blacktown City Centre. The Health Precinct has been identified as a transformation project of the Blacktown City Council to support the forecasted growth in population planned for Blacktown. The objective of the transformation is to provide employment and social infrastructure within a framework of sustainability and design excellence.

Dora was engaged by Blacktown City Council to provide traffic and transport advice on the transformation project, and managed the delivery of a range of transport engineering output including masterplan, strategic transport analytics and design input to the Project.

Woolworths National Loading Facilities Transport Management Safety Review | Woolworths

Dora was the National Technical Leader for the development and delivery of a loading facilities transport management safety review program for the Supermarkets branch of Woolworths which involved the development and delivery of

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a transport management inspection, review and reporting program involving over 1000 stores. Dora worked closely with the Health and Safety section of Woolworths and was a key member of the delivery team of the study.

Woolworths Drive Program Design Standards Development and Test Fit | Woolworths

Dora was the National Technical Design Lead for the review and provision of technical design advice to inform the development of standard layout and the design guideline of drive through facilities for Woolworth Supermarket assets. Dora has completed a series of test fits across a number of stores located in NSW, SA, WA and NT reviewing and providing design options to retrofit drive through facilities.

Woolworths Minchinbury Distribution Centre (NSW) | Woolworths

Dora was the Project Director and Transport Engineering Lead for the redesign of loading, circulation and parking facilities within the existing Woolworths Minchinbury Distribution Centre and associated Development Application Transport Assessment and Modification application.

Woolworths Fresh Refrigerated Distribution Centre (VIC) | Fabcot

Dora was the Transport Engineering Lead from feasibility phase of the project, to completion of Planning Permit application and associated Concept to Schematic Design phases of the Woolworths Fresh Project in Truganina, Victoria. The project involved the development of a fourth leg to a roundabout, B-Double queuing areas, vehicle circulation, as well as parking facilities and design of a channelised right turn facility along Foundation Road.

Woolworths Melbourne South Regional Distribution Centre (VIC) | Fabcot

Dora was the Transport Engineering Lead for the project and has provided transport engineering input from the development of the Principal's Project Requirement, assisting the Project Architect in the development of a reference design, assistance in provision of transport engineering advice to inform site selection, subsequent Concept and Schematic Design work, and Transport Impact Assessment for the Planning Application.

Victoria Police Centre (2016 – 2020) and City West Police Complex (2011 – 2015), Melbourne | Cbus Property

The recently completed Victoria Police Centre and the City West Police Complex located at the corner of Spencer Street and La Trobe Street, Melbourne forms a custom-designed, integrated precinct.

Dora was the Transport Engineering Lead for the project since 2011 and has worked collaboratively with both the Project Principal, representatives of Victoria Police and the Project Design Team to develop custom designed solutions to traffic and transport facilities associated with the development. Dora prepared Transport Assessment reports, technical memorandums, and heavily involved in consultation with authorities and stakeholder consultation.

Secure Facilities, Melbourne | Reserve Bank of Australia

Dora was the Traffic Management Lead for the Secure Facilities developed by the Reserve Bank of Australia in Craigieburn, Melbourne.

Dora was engaged to develop traffic management arrangements, functional requirements and specifications embedded into the architectural, civil and security arrangements of the project.

Other Select Projects:

Education

Alex Avenue Public School | NSW Department of Education

Dora was the Transport Engineering Lead for the project, and assisted in the preparation of contingency parking and site access design, responses to Response to Submissions, development of School Transport Plan, and liaison with Council.

New Estella, Wagga Wagga Public School | NSW Department of Education

Dora was the Transport Engineering Lead for the project, and assisted in the preparation of responses to Response to Submissions, development of site access design, School Transport Plan, and liaison with key stakeholders.

Dora Choi

Principal – Traffic Engineering

Email: dora.choi@asongroup.com.au

Phone: 0450 923 889

Catherine Field Public School | NSW Department of Education

Mixed Use

Langston Place, Epping (NSW) | Cbus Property

88 Walker Street, North Sydney | Billbergia

1 Dension Street, North Sydney | Multiplex and The Winten Property Group

435 Collins Street, Melbourne (VIC) | Cbus Property

140 – 150 Queen Street, Melbourne (VIC) | Cbus Property

Community

Tom Wills Community Oval | Sydney Olympic Park Authority

Wendy Zheng

Senior Traffic Design Engineer – Ason Group

Email: wendy.zheng@asongroup.com.au
Phone: +61 2 9083 6601

Wendy is a qualified civil engineer with eight years of work experience across project management, traffic engineering, construction management, and civil and drainage design

During this time, Wendy has been involved in numerous projects for both private organisations and government agencies in Australia and United Kingdom.

Wendy has demonstrated her ability across numerous areas of traffic engineering, transport construction, and civil design and has been involved in many significant projects.

Past projects have ranged in size from detailed design of intersection upgrades to the preparation of Construction Traffic Management Plans, Traffic Control Plans, and Construction and Occupation Certification for both private and public clients. Wendy also has experience dealing with the Transport Management Centre to obtain Road Occupancy Licenses as well as negotiating with Sydney Coordination Office for CTMP approvals.

While working in the UK Wendy was involved in the management, design and delivery of several large scale projects for local councils such as the School Streets project for Haringey and Liveable Streets programme in Tower Hamlets.

Wendy has worked on a broad range of inter-disciplinary design teams where she collaborated with clients and consultants of various disciplines in achieving forward thinking outcomes that considers both current and future needs of end users.

QUALIFICATIONS & EDUCATION

- Master of Engineering Management (University of Technology Sydney)
- BE Civil Engineering w Architecture (University of New South Wales)
- RMS Prepare a Work Zone Traffic Management Plan Card (Combined orange and red card)
- WorkCover Occupational Health and Safety Construction Induction Card.
- Member of Engineers Australia

PROFESSIONAL BACKGROUND

- 2020 – Current: Ason Group
Senior Traffic Design Engineer
- 2019 – 2020: Project Centre Limited (UK)
Senior Traffic Engineer
- 2019 – 2019: WSP (UK)
Senior Engineer
- 2016 – 2019: GTA Sydney
Consultant and Senior Consultant
- 2012 – 2016: The Hills Shire Council
Graduate, and Civil Design Engineer

KEY SKILLS

- Transport Management and Operations Planning
- Transport Design
- Civil and Drainage Design
- Stakeholder management
- Autocad suite / Microstation
- Vehicle tracking / Autoturn

KEY PROJECTS & EXPERIENCE

388 George Street, Sydney | Multiplex

Wendy was the Project Manager and Traffic Management Lead for the Construction Traffic Management Planning for the development, as well as the internal traffic management works with the adjoining building that include coordination with Sydney Light Rail Works and construction activities of other nearby developments.

David Jones Elizabeth Street, Sydney | Mainbrace

Wendy was the Project Manager and Traffic Management Lead for the Construction Traffic Management Planning for the development in obtaining the first approval for nighttime concrete works in the CBD from SCO and overtime ROLs while liaising with adjoining developments and Sydney Metro.

Langston Place, Epping | Hutchison Builders

Wendy was the Project Manager and Traffic Management Lead for the Construction Traffic Management Planning for the development in obtaining the first approval for construction works during Epping to Chatswood rail replacement period from the expanded SCO.

Thomas Lehmann

Traffic Engineer – Ason Group

Email: thomas.lehmann@asongroup.com.au
Phone: +61 2 9083 6601

Tom has a Bachelor of Civil Engineering and has been working in the traffic engineering and transport planning industry since 2015.

During this time, Tom has undertaken numerous projects for both private developers and Government Agencies, including Councils and NSW Health Infrastructure across a range of industry sectors.

Tom has demonstrated ability in all areas of traffic engineering and transport planning and has been involved in many significant studies.

Past projects have ranged in size from detailed design advice in relation to small residential developments with highly constrained accesses opportunities to the preparation of Traffic Impact Assessment (TIA) for large development submissions.

Tom has been trained in and worked with numerous transport planning models and this experience allows him to provide strategic and specialist advice on transport planning issues. These models and programs include AutoCAD, Autotrack, and SIDRA.

QUALIFICATIONS & EDUCATION

- BE Civil Engineering (University of NSW)
- Member AITPM
- Member of Engineers Australia

PROFESSIONAL BACKGROUND

- 2015 – Current: Ason Group
Traffic Engineer
- 2015: Birzulis Associates
Structural Engineer

KEY SKILLS

- Traffic Impact Assessments
- Master Planning & Feasibility Studies
- Sustainable Transport Planning
(Green Travel Plans & Transport Access Guides)
- Transportation Modelling Analysis (SIDRA)
- Australian Standards (AS2890 & AS1158) Compliance
- Car Park & Loading Dock Design & Assessment, including for Construction & Occupancy Certification
- Construction Traffic Management Plans

KEY PROJECTS & EXPERIENCE

Education

- *Loreto Normanhurst*
Modal analysis of staff and students and assessment of existing travel behaviours.
- *Moriah College*
TIA to support a new 80-space early learning centre in an existing educational facility.
- *Santa Sophia Catholic College*
TIA to support a new 1,600 primary and secondary school and a 60-space Early Learning Centre.
- *Mt Sinai College*
TIA to support the provision of an 80-space early learning centre in an existing school.

NSW Health Infrastructure

- Numerous Sydney Ambulance Metropolitan Infrastructure Strategy (SAMIS) sites in Caringbah, Artarmon, Haberfield, Liverpool, Blacktown, Bankstown, Northmead, Narrabeen, and Penrith.
- Child care centre in the Royal North Shore Hospital – traffic study to support a 70-space child care centre.

Residential, Commercial & Mixed Use Developments

- *Waterloo Road, Macquarie Park Masterplan*
TIA to support the concept masterplan for the commercial development at 45-61 Waterloo Road.
- *Rosehill Street Planning Proposal*
Traffic study to support a concept plan of 320 residential units and 2,550m^2 of commercial GFA.
- *Warrawong Shopping Centre*
Multiple traffic studies to support additional tenancies and removal of car parking.

Industrial Developments

- *Minto Intermodal*
TIA to support the SSDA for a new intermodal.
- *Old Wallgrove Road*
TIA to support a 44,000m^2 warehouse for submission DP&E.
- *South Street, Rydalmere*
TIA to support a warehouse development for submission to Parramatta Council

Appendix B

Ason Group Technical Note

Reference: 0760tn02v1

TECHNICAL NOTE

info@asongroup.com.au
+61 2 9083 6601
Suite 5.02, Level 5, 1 Castlereagh Street
Sydney NSW 2000
www.asongroup.com.au

19 December 2019

TSA
Level 15
207 Kent Street
Sydney NSW 2000

Attention: Kenny Lim

Santa Sophia College

Response to SSDA Submissions

Dear Kenny,

This Technical Note has been prepared by Ason Group on behalf of the Catholic Education Diocese of Paramatta (CEDP) (the Applicant)., and accompanies a Response to Submissions Report in support of State Significant Development Application (SSD-9772) for the proposed Santa Sophia Catholic College (the College) located on the corner of Fontana Drive and the future road 'B', between Red Gables Road and Fontana Drive, in Box Hill North (the Site).

Ason Group have previously provided a Technical Note (ref: AG0760tn02) accompanying a Response to Submissions Report which addressed concerns raised during the public exhibition between 30th May 2019 and 26th June 2019.

This Technical Note addresses the latest issues raised by the Department of Planning and Environment (DPIE); these include:

- The operation of the kiss and drop;
- Carparking;
- Carparking; Kiss and drop; Traffic and transport;
- The location of the College; and
- Boundary impacts.

Sections below provide a response to the individual issues raised by DPIE, noting that in formulating these responses we have also relied on consultation with TSA; CEDP; and others in the broader Project Team.

1 Department of Planning, Industry & Environment Submission

1.1 Drop-Off & Pick-Up Impact

The DPIE submission provides the following in regard to the impact of the pick-up and drop-off facilities:

Provision of a further response to the following key issues raised by the public:

Cumulative impact of drop-off / pick-up facilities on the local road network (including consideration of potential incidents of queuing back into intersections during AM / PM peak demand periods).

Ason Group provides the following response:

Ason Group prepared the Transport Accessibility & Impact Assessment (TAIA) which provides detailed calculations in regard to the peak drop-off / pick-up (DOPU) demand of the College at full capacity, and acknowledges that some of that demand will need to be met elsewhere in the vicinity of the Site.

In the early years of operation, the College provides DOPU facilities along the Road B frontage with 12 spaces which is forecast to provide for all DOPU demand, but the TAIA acknowledges that demand would exceed capacity after 2 or 3 years of operation. At that time, it is expected that significant on-street capacity would still be available within the immediate vicinity of the Site (i.e. elsewhere on-street in the Town Centre) but regardless, as with general parking, additional on-street capacity for DOPU is readily available within 200m of the Site.

To supplement the Road B DOPU area provided adjacent to the College, an additional DOPU area with 20 spaces will be provided south of the intersection of Red Gables Road and Fontana Drive along Fontana Drive adjacent to the hockey fields. As agreed with Council, further to the provision of a pedestrian crossing on Red Gables Road east of Fontana Road, this area is easily and safely accessible for (senior) students, and is located where a potential overflow of DOPU demand would have little if any significant impact on traffic operations.

Ason Group have previously prepared a Memo dated 20 August 2019 discussing the demand (the Ason Memo) and is appended in **Attachment 1**. The Ason Memo details that the maximum DOPU demand for the primary and secondary school during the critical peak periods is as follows:

- Primary School:
  - AM Peak: 94 vehicles
  - School PM Peak: 122 vehicles

- Secondary School:
  - AM Peak: 132 vehicles
  - School PM Peak: 74 vehicles

The AM peak demand for both the Primary and Secondary College would occur during the 10-minute period prior to commencement of school, while the College PM peak demand would occur during the 10-minute after the final school bell. Based on information provided by the Applicant, it is understood that the AM Peak and College PM peak would occur between 7.30AM–8.30AM and 2.10PM–3.10PM respectively. It is important to note that the AM peak coincides with the network peak period, while the College PM peak occurs prior to the network peak which is anticipated to occur between 5.00PM–6.00PM.

It is envisaged that a Traffic Management Plan (TMP) could facilitate a turnover rate of 1 vehicle per space every minute, therefore the capacity of the Road B frontage could accommodate a total of 120 vehicles in a 10-minute period while the DOPU facility along Fontana Drive could accommodate 200 vehicles. As the Primary College would utilise the Road B frontage DOPU facilities, with reference to the demands detailed above, the capacity of the Road B frontage is exceeded during the College PM peak. However, this is by 2 vehicles and would be accommodated after the 10-minute peak after the school bell as this timeframe only has a demand of 73 vehicles in that 10-minute period.

While the demand generated within the initial 10-minute peak after the final bell exceeds the capacity of the Road B DOPU facility, it is not anticipated to adversely impact the operation of the intersection of Red Gables Road / Road A. After the 30-minute peak period following the final school bell, it is anticipated that the traffic associated with the Road B DOPU facility would disperse into the local road network which is common for schools.

Furthermore, as this peak occurs outside of the network PM peak period it is anticipated that the majority of vehicles within the Town Centre would be associated with the College. Indeed, it is also acknowledged that parents / carers will park off-street within the Town Centre, for example in the future supermarket car park (expected to be provided at grade directly to the north of the Site) or in other local streets (without parking restrictions such as proposed within the Town Centre itself). This is typical behaviour, as observed in local centres every morning and afternoon where parents/carers combine a DOPU trip with (most often) a shopping trip. The expected use of the (for example) future supermarket parking spaces should not therefore be seen as providing for the DOPU demand, but as providing for a genuine shared trip demand.

As such, the cumulative impacts of the Road B DOPU facilities during the school PM peak period are not anticipated to extend past 30-minutes after the final school bell.

Similarly, the TMP would provide the Secondary College Fontana Drive DOPU area with a capacity of 200 vehicles during the 10-minute period prior to school commencement. This would adequately accommodate the maximum demand of 132 vehicles. However, noting the proximity to the intersection of Red Gables Road

/ Fontana Drive, if the Fontana Drive DOPU area is approaching capacity, vehicles would be required to recirculate to prevent queuing within the intersection of Red Gables Road / Fontana Drive. This would ensure that the Fontana Drive DOPU area would not adversely impact the operation of the intersection of Red Gables Road / Fontana Drive.

Finally, it is anticipated that the operation of the DOPU areas would be reviewed at a minimum annually during the first few years of College operations in consultation with Council, RMS and local bus operators.

1.2 Drop-Off & Pick-Up Operation

The DPIE submission provides the following in regard to the operation of the drop-off and pick-up facilities:

Provision of a further response to the following key issues raised by the public:

Sensitivity analysis of adopted '1 minute' turnover rate for the drop-off/pick-up operations in the context of managing young children.

Ason Group provides the following response:

As discussed above and in the previous Response to Submissions, the future TMP strategies have been developed in further to consultation the CEDP and Council, and will need to provide a range of operation management strategies to ensure the safe and efficient operation of the DOPU areas. While final management plans will need to be finalised prior to the opening of the College, Ason Group provides the following broad recommendations:

- All the key roads providing DOPU facilities – including Fontana Drive south of Red Gables Road – must be constructed prior to the opening of the College; this includes kerb, guttering and all footpaths/shared paths so as to ensure that students can access the DOPU facilities from the outset.
- Further to the above, as a minimum a pedestrian crossing will need to be installed across Red Gables Road east of Fontana Drive to ensure safe passage with the College (and the Town Centre more generally) and the Fontana Drive DOPU (and local playing fields and residential areas south of Red Gables Road more generally). The responsibility for the provision of the crossing will require determination further to consultation between Council, CEDP and Celestino.
- The DOPU areas will need to operate under supervision to maximise safety and efficiency. The key components of a future operational management plan for the DOPU areas will include:
    - Staff monitoring student and driver activities;
    - The provision of an 'active' zone within which the DOPU actually occurs so as to prevent vehicles weaving in and out of the DOPU area;
    - Student names on car visors to assist in the efficient operation of the DOPU; and

- Student marshalling areas away from the roadway to maximise the safety of the DOPU operations.

In terms of the management of young children, by providing staff members to assist with the DOPU facility they would be able to assist the younger children with bags and additional items to enter and exit vehicles during both peak periods. The use of placards allows for staff members to get the students ready prior to the arrival of their parent during the PM peak, while the provision of marshalling areas allows for staff members to escort young children to and from the College and assist with bags. Finally, parents / carers will not be allowed leave vehicles unattended in the DOPU area thereby ensuring that the 1-minute turnover is maintained.

1.3 Parking Provision

The DPIE submission provides the following in regard to the parking impact:

Provision of a further response to the following key issues raised by the public:

Consideration of parking impacts associated with 'events' and 'community use' of the school's facilities and how these will be met.

Ason Group provides the following response:

Following discussions with CEDP, it is understood that the College would host events and allow community use of College facilities. The College would host events with up to 300-500 guests and are anticipated to occur 10-11 times per year with a mixture of during the day (10.00AM–1.00PM) and after school hours (5.00PM–8.00PM). Smaller events would also be held on weekends with a capacity of 100 guests. A review of the following scenarios has been undertaken with regard to the parking and traffic impacts:

- **Weekday daytime:** A 500-guest event held during the day for 2-3 hours. Estimated to occur twice annually.
- **Weekday evening:** A 300-guest event held after school hours for 2-3 hours. Estimated to occur 9 times per year.
- **Weekend:** A 100-guest event held during the day. Estimated to occur fortnightly.

It should be noted that these scenarios are to be considered as indicative only as this information has been developed based on schools with a comparable nature and the existing temporary school. The exact nature, capacity and program of events and community is not yet known so this information is indicative only and assumes a worst-case scenario for assessment purposes.

Weekday Daytime

It is understood that the large-scale events would be for Mother's Day Mass or similar familial events. In this regard, it is anticipated that the vehicular occupancy would be approximately 2.5 occupants per vehicle as families would be travelling together. This subsequently corresponds to a parking demand of 200 spaces.

Noting that these events occur during the day, the staff carpark cannot be relied upon. To accommodate this parking demand, a review of the parking availability has been undertaken of the surrounding road network within a 400m radius. This is detailed in **Figure 1**.

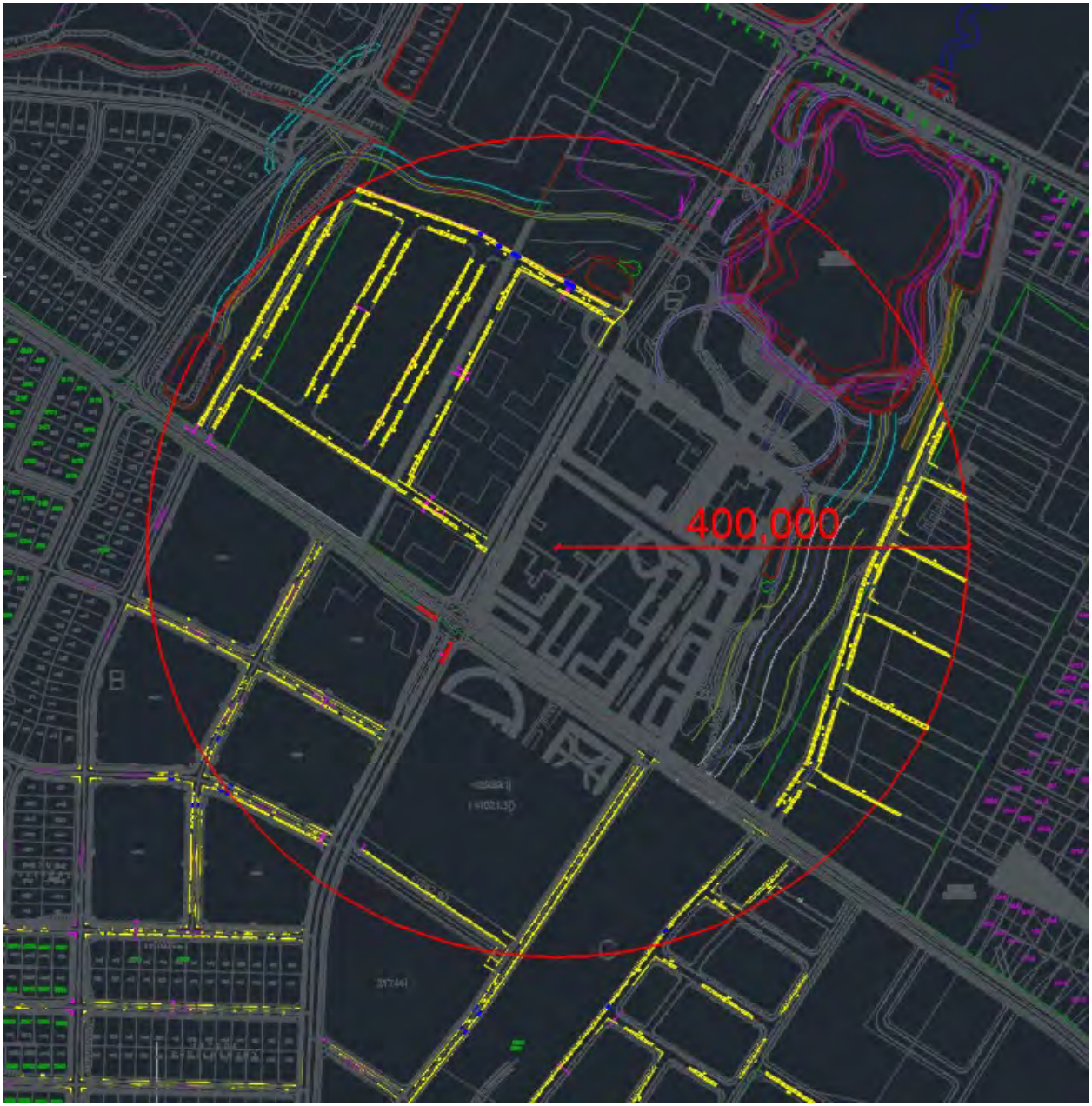

Figure 1: Santa Sophia Study Area - 400m Radius

The findings of the on-street parking study indicate that there are some 625 parking spaces within the 400m catchment area which includes the 20 on-street spaces provided on Fontana Drive for the Fontana Drive DOPU area. In addition, there are 40 spaces proposed within Road A and Road B (the internal Gables town centre road network connecting to Fontana Drive and Red Gables Road) which includes the 12 on-street

spaces dedicated for the Road B DOPU area. It should be noted that this number does not include the parking provided for the Town Centre.

In addition, to the south of the Site a council carpark is to be provided (within the 400m Site radius) adjacent to the hockey fields to the south of the College with a capacity of 150 spaces; this would increase the available parking capacity within 400m of the College to some 815 spaces. Noting that the parking demand of a 500-guest event during the day is approximately 200 vehicles, this corresponds to 24.5% of the total capacity. While it cannot be expected that all 815 spaces would be available during these events, it should be noted that these events are held outside of the Town Centre peak periods and it is anticipated that the majority of parking in the locality would be available. As such, the reliance on on-street parking and the hockey field car park is considered supportable. Information regarding the parking arrangement of events and recommended parking locations would be provided as part of the event Plan of Management.

Regarding the traffic generated by the weekday daytime events, it is anticipated that a total of 200 trips would be generated prior to the start of the event and at the events conclusions. As discussed above, the events would occur outside of peak periods with lower traffic volumes in the surrounding road network. The traffic analysis undertaken as part of the TAIA determined that the intersections surrounding the College and the Town Centre would operate with sufficient capacity during the network peak periods, therefore it is anticipated that the intersections would similarly operate with sufficient capacity during the events. In addition, as guests would be parking on-street, traffic would be dispersed throughout the local road network.

Weekday Evening

It is expected that weekday evening events would have a similar profile to weekday daytime events, with a vehicle occupancy of 2.5 occupants per vehicle. This corresponds to a parking demand of 120 spaces (noting a maximum capacity of 300 guests). As these events occur outside of College hours, the staff carpark can therefore be relied upon, providing a total of 110 parking spaces are provided for guests. An additional 10 parking spaces are provided on-site for the Early Learning Centre which would also not be in use outside of College, hours, and therefore be available. As such, it is anticipated that the parking demand for a weekday evening event could be accommodated within the College's parking provision.

Regarding the traffic generated by the weekday evening events, it is anticipated that a total of 120 trips would be generated prior to the start of the event and at the events conclusions. The beginning of these weekday evening events would occur simultaneously with the PM network peak and therefore the trips would be inbound towards to the staff car park. With reference to the traffic analysis detailed within the TAIA, the intersections surrounding the College and the Town Centre would operate with sufficient capacity during the network PM peak period with all intersections operating with a Level of Service C or better. It is anticipated that the intersections would continue to operate within acceptable parameters, however an updated traffic generation assessment would be undertaken as part of the preparation of any event Plan of Management.

Weekend

It is expected that the weekend events would be again similar in nature to weekday events, however a reduced vehicular occupancy of 2.2 occupants per vehicle is expected due to the community use of these facilities; noting the maximum capacity of 100 persons for a weekend event, this corresponds to a parking demand of 46 spaces. As these events occur on the weekend, the staff carpark can be relied upon. As the staff car park provides 110 spaces, this satisfies the demand for the parking demand of the weekend events. It is noted that the staff car park is available to the public for Town Centre use on weekends as per the agreement with Celestino, however the 110 spaces are in excess of the parking requirements of the Town Centre and therefore supply surplus parking. In this regard, it is not anticipated that the staff car park would be at capacity, therefore the parking demand can be accommodated by the staff car park.

Regarding the traffic generated by these weekend events, it is anticipated that a total of 46 trips would be generated prior to the start of the event and at the events conclusions. This equates to 1 vehicle every 1-2 minutes and is therefore not anticipated to have any material impact on the operation of the surrounding road network.

Notwithstanding the above scenarios assessments, given the size and nature of these events, a Plan of Management would be adopted by the College to minimise any impacts as a result of the events. This would be reviewed on an annual basis to determine the ideal strategies to implement and manage the parking demand.

We trust the above is of assistance to you and the Project Team; please do not hesitate to contact Anton Reisch or the undersigned should you or the key stakeholders referenced above have any further queries.

Kind regards,

Thomas Lehmann
Traffic Engineer I Ason Group
Email: thomas.lehmann@asongroup.com.au

Attachment 1

Pick-Up / Drop-Off Parking Demand Memo

MEMO
0760l05v2

20 August 2019

info@asongroup.com.au
+61 2 9083 6601
Suite 5.02, Level 5, 1 Castlereagh Street
Sydney, NSW 2000
www.asongroup.com.au

Attention: **Kenny Lim; Project Manager**

RE: **Santa Sophia College, The Gables – Pick-up / Drop-off Parking Demand**

Overview

This Memo has been prepared as requested to address the following:

1. Concerns raised by the assessment authority relating to the pick-up and drop-off facilities at full development

2. The growth profile for the school pick-up and drop-off facilities from year of opening 2021 to the projected full capacity at 2030.

Ason Group prepared the Transport Accessibility & Impact Assessment (TAIA) for the proposed Santa Sophia College, The Gables (the School). The School proposed 12 spaces along the northern frontage with Road B and it was identified as part of the TAIA that an annual review of the travel behaviour of students would be undertaken to assess the capacity and demand of the pick-up / drop-off facilities as the school operational characteristics developed. It has been requested that the final solution for pick up and drop off facilities now be submitted to the DPIE.

Further, TfNSW raised comments regarding the adoption of a higher trip generation during the critical AM and PM peak period for the first two years of operation. This increased trip rate has been requested to consider the developing nature of the Gables Precinct with respect to the number of cycling and walking trips.

As such, this Memo provides a discussion of the demand of the pick-up / drop-off area with consideration for the proposed provision. The objective of this memo seeks to;

- To detail the pick-up / drop-off area demand in accordance with TfNSW comments, and
- Assess the capacity of the separate pick-up / drop-off areas for the primary and secondary school.

Findings

- At Year of Opening, the Road B pick-up /drop-off area provides sufficient for the pick-up / drop-off demand.
- As per TfNSW comments, higher trip rates were adopted and these indicate that in 2022, the demand would be 150 and 139 vehicles during the AM and PM peak period respectively. This requires an additional 3 parking spaces. Supplementary parking would need to be provided for pick-up / drop-off and it is anticipated that these could be provided within the Town Centre internal road network.
- The assessment at year 2023 the lower trip rates detailed in the TAIA would apply, however with the growth of the school, a demand of 130 and 118 vehicles would need to be accommodated during the AM and PM peaks respectively. This exceeds the capacity of the Road B pick-up / drop-off area and single supplementary parking space would be required.
- Given the projected growth, the analysis demonstrates that ultimate solution works from a numerical perspective. The strategy to deal with the growth needs to be considered and we would consider this be addressed as part of an annual TMP in response to a condition of consent where the developing operational characteristics are reviewed and submitted to Council to inform the growing demands for pick-up / drop-off.

Technical Assessment

Assessment Characteristics

As per the TAIA, the key characteristics of the proposed School are as follows:

- 1,860 students including:
  - 840 primary school students, and
  - 1,020 secondary school students.
- Trip Generation Rates:
  - Primary School:
    - AM Peak: 0.46 trips per student
    - School PM Peak: 0.48 trips per student
  - Secondary School:
    - AM Peak: 0.35 trips per student
    - School PM Peak: 0.35 trips per student
- 12 pick-up /drop-off spaces on the Road B frontage.

Pick-up / Drop-off Demand – Road B Capacity Assessment

Ason Group has undertaken an assessment of the pick-up / drop-off demand looking at the yearly student population increase for the School until the pick-up / drop-off demand exceeds the capacity of Road B. The population of the School as it grows is detailed in the table below.

Table 1: School Population Growth

Years	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Primary	325	485	560	695	780	840	840	840	840	840
Secondary	195	356	515	661	782	877	949	985	1,002	1,018
Total Students	520	841	1,075	1,356	1,562	1,717	1,789	1,825	1,842	1,858

Of relevance to the assessment of the pick-up / drop-off area, the School also provides a Before & After School Care for between 300-400 primary school students only. This requires students to be signed in/out and operates between 6AM–9AM and 4PM-10PM. While the School population grows, the number of students in the Before & After School Care has been proportionally reduced based on the total number of primary school students. Similarly, information provided by the School indicates that approximately 10% of secondary school students would have before and after school activities. This has been reflected in our analysis by reducing the number primary and secondary school students utilising the pick-up / drop-off area during the critical AM and PM peaks.

As previously mentioned, TfNSW raised comments regarding the adoption of a higher trip generation during the critical AM and PM peak period for the first two years of operation. This increased trip rate was to consider

the developing nature of the Gables Precinct with respect to the number of cycling and walking trips. The TAIA adopted a future mode share of 23% for cycling and walking combined, as such this has been added to the trip generation rate of the School, however it is anticipated that there would be some cycling and walking trips during the first two years of operations.

The following trip generation rates have been adopted for the first two years of operation:

- Primary School:
  - AM Peak: 0.66 trips per student
  - School PM Peak: 0.768 trips per student
- Secondary School:
  - AM Peak: 0.55 trips per student
  - School PM Peak: 0.55 trips per student

Application of these trip generation rates and the pick-up / drop-off demand to the proposed School capacity at Year of Opening is detailed in **Figure 1** and **Figure 2**.

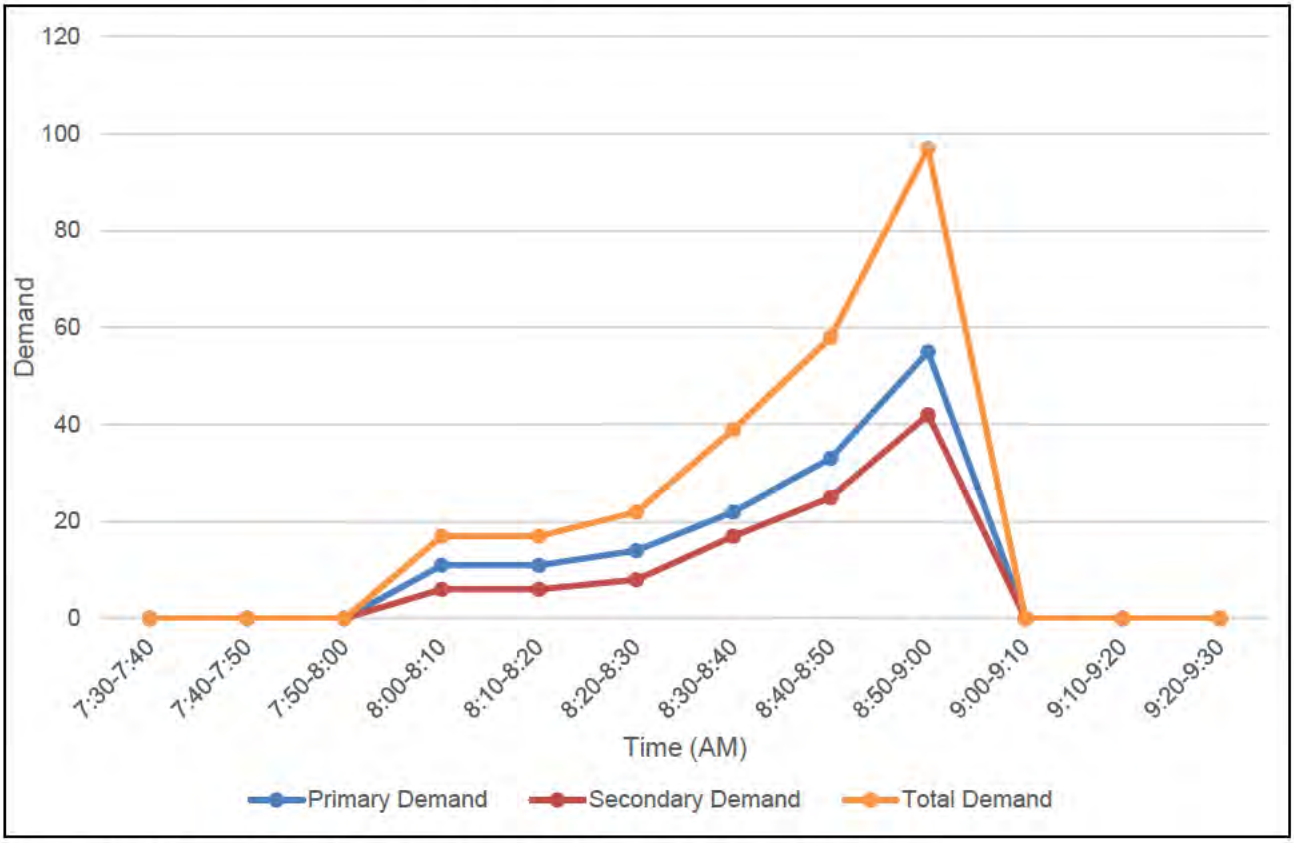

Figure 1: AM Peak Period Pick-Up / Drop-Off Demand – Year of Opening

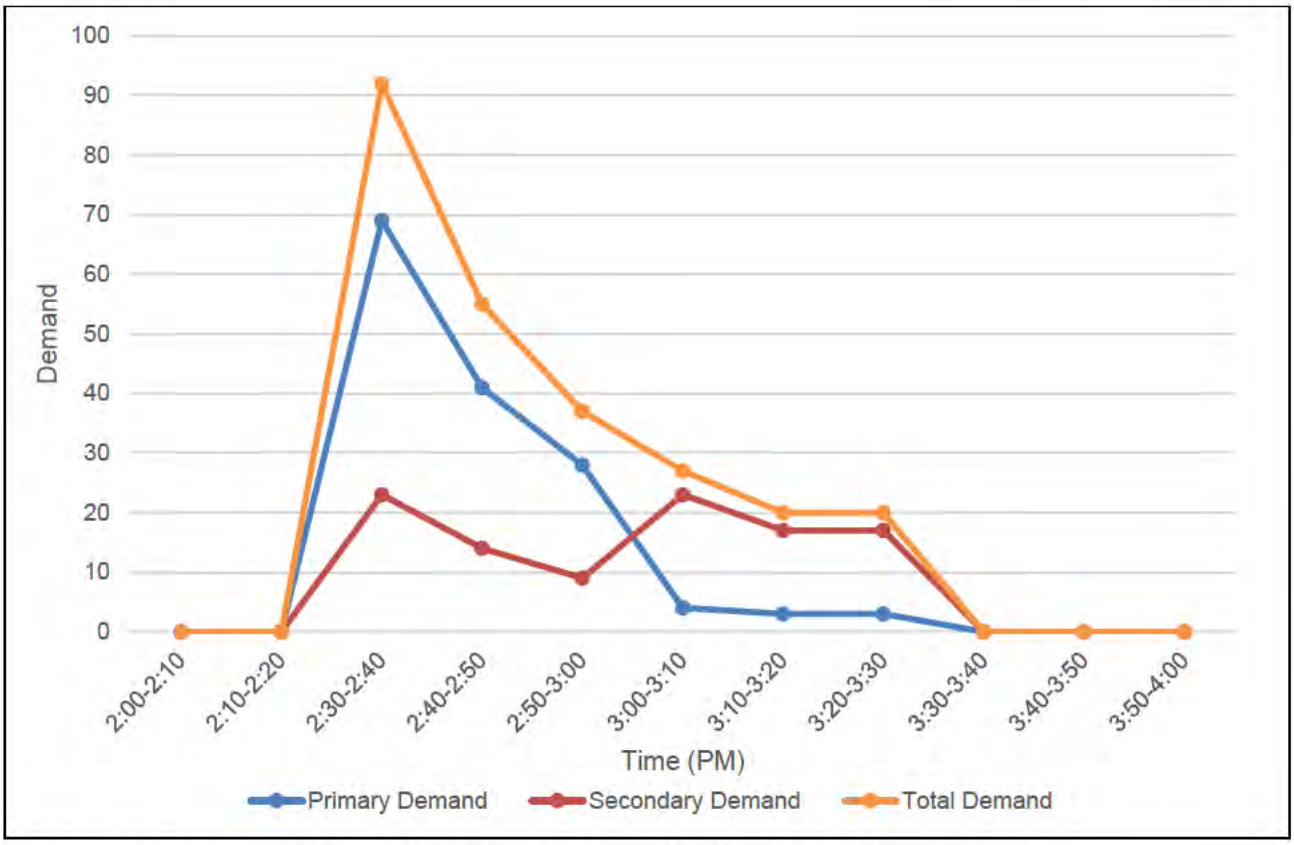

Figure 2: PM Peak Period Pick-Up / Drop-Off Demand – Year of Opening

The above figures indicate that the maximum total demand is 97 and 92 vehicles during the AM and PM peak periods respectively. As discussed in the TAIA, the provision of 12 pick-up / drop-off spaces on-street along Road B, a traffic management plan would also be implemented to facilitate reduced times to pick-up / drop-off students. It is envisaged that a traffic management plan could facilitate a turnover rate of 1 vehicle per space every minute. This corresponds to a capacity of 120 vehicles along the Road B frontage which would accommodate the AM and School PM peak. As such, Road B is able to accommodate the pick-up / drop-off demand at Year of Opening.

With reference to Table 1, **Figure 3** and **Figure 4** detail the pick-up / drop-off demand of the School in 2022.

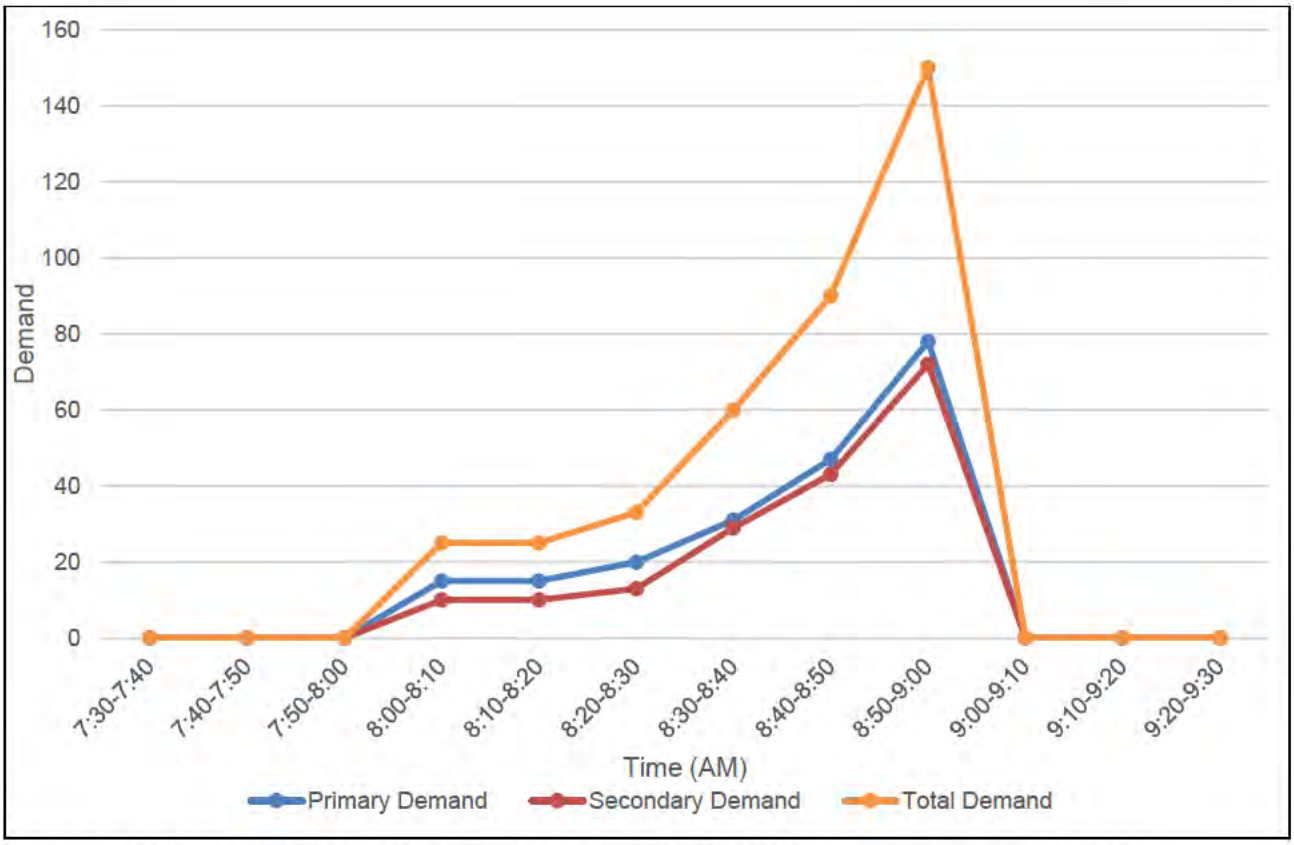

Figure 3: AM Peak Period Pick-Up / Drop-Off Demand, TfNSW Trip Generation Rate – 2022

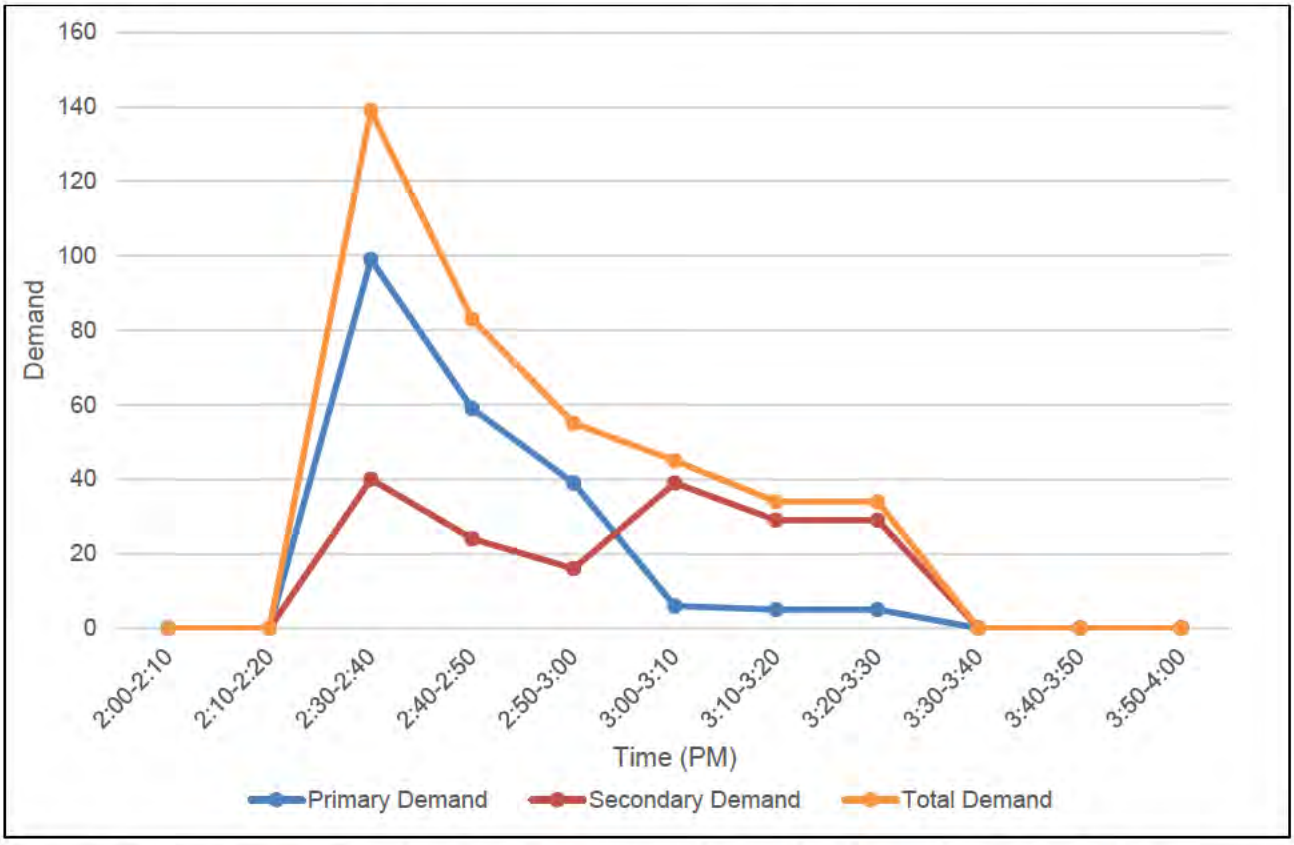

Figure 4: PM Peak Period Pick-Up / Drop-Off Demand, TfNSW Trip Generation Rate – 2022

The above figures indicate that the maximum combined demand is 150 and 139 vehicles during the AM and PM peak periods respectively. This exceeds the capacity of 120 vehicles along the Road B frontage. However, in 2022, the larger Gables precinct would still be under development with the Town Centre unlikely to have been constructed. In this regard, there would be no traffic within the Town Centre internal road network that isn't associated with the School and as such, the School would be able to make use of the available parking. As such, the demand would not impact the operation of the local road network.

Furthermore, it should be noted that as the Gable Precinct continues to be developed, the pick-up / drop-off demand would decrease. Indeed, application of the trip generation rates detailed in the TAIA to the student population in 2022 determines a combined maximum demand of 100 and 96 vehicles during the AM and PM peak periods respectively which can be accommodated with within the Road B pick-up / drop-off area.

However, it should be noted that in 2023, the capacity of the Road B pick-up / drop-off area would be exceeded using the trip generation rates detailed in the TAIA. **Figure 6** and **Figure 7** detail the pick-up / drop-off demand of the School in 2023.

As per the figures overleaf, the maximum combined demand is 130 and 118 vehicles during the AM and PM peak periods respectively. In this regard, the pick-up / drop-off demand would exceed the capacity of the Road B pick-up / drop-off area in 2022 using increased trip generation rates, and in 2023 as per the rates detailed in the TAIA.

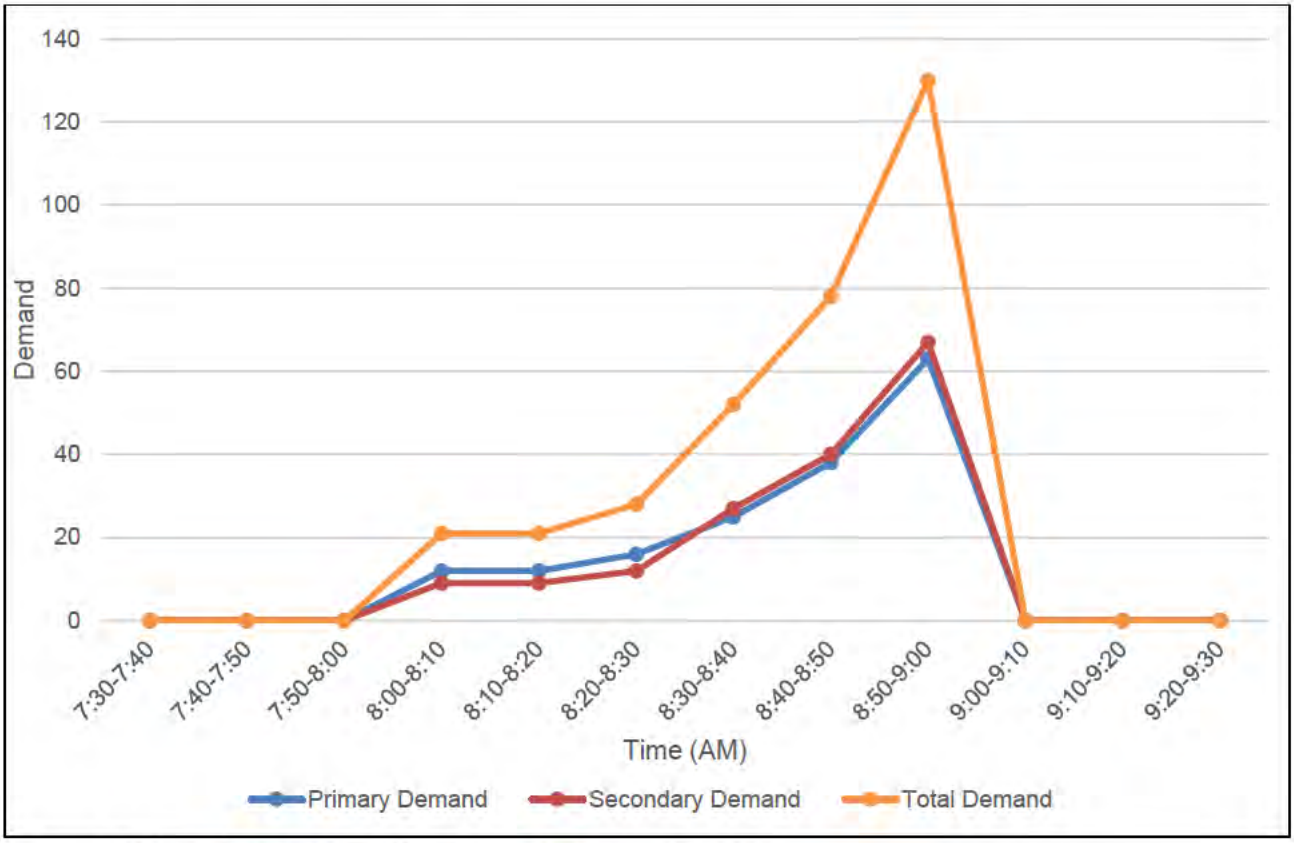

Figure 5: AM Peak Period Pick-Up / Drop-Off Demand – 2023

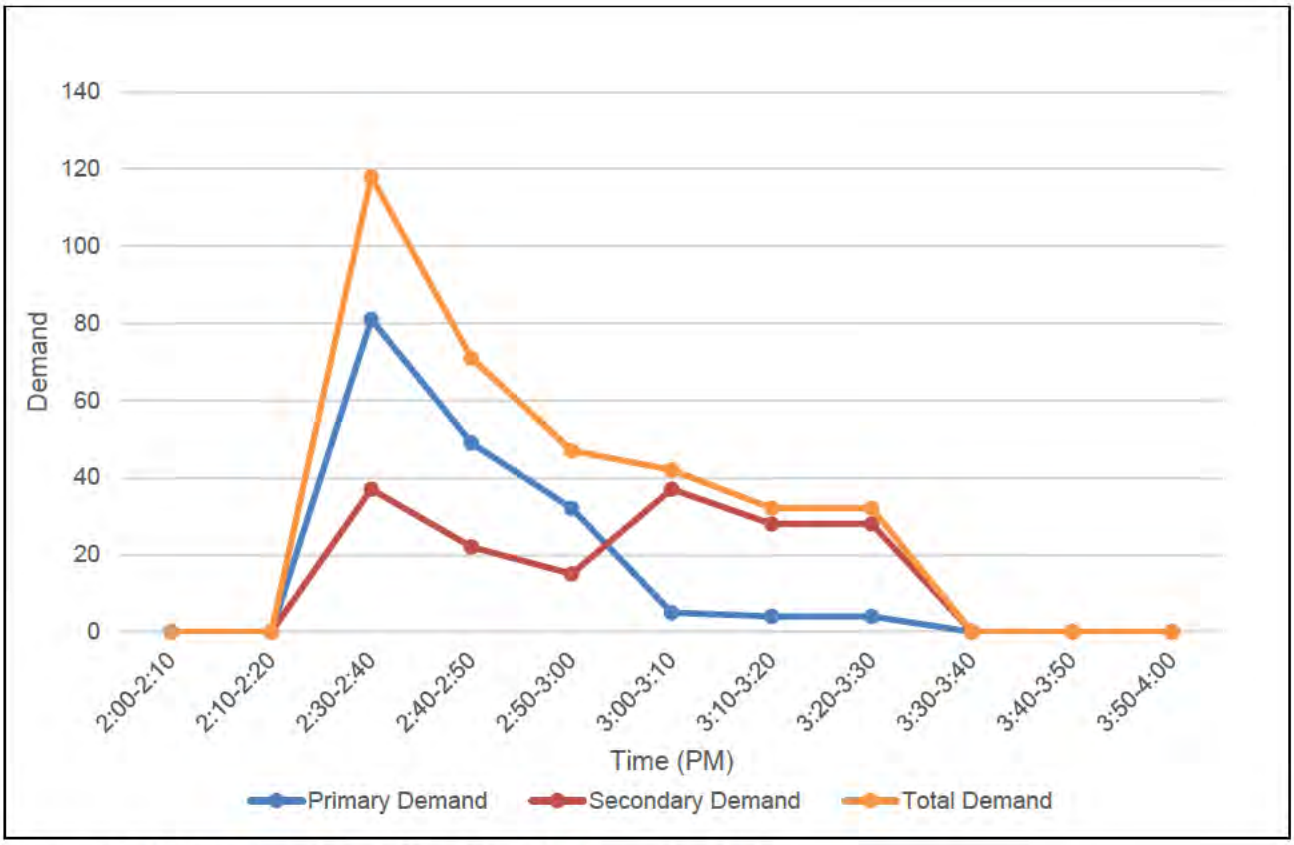

Figure 6: PM Peak Period Pick-Up / Drop-Off Demand – 2023

Pick-up / Drop-off Demand – Full Development

In addition to the above, it is understood that TSA Management, Celestino, and the Catholic Education Diocese of Parramatta (CEDP) have undertaken a discussion to provide a solution that ensures the adequacy of the pick-up / drop-off facilities. In addition to the 12 spaces provided on the northern frontage along Road B, an additional 20 spaces are to be provided along Fontana Drive, south of the intersection of Fontana Drive and Red Gables Road, adjacent to the hockey fields. **Figure 5** details the proposed pick-up / drop-off facilities.

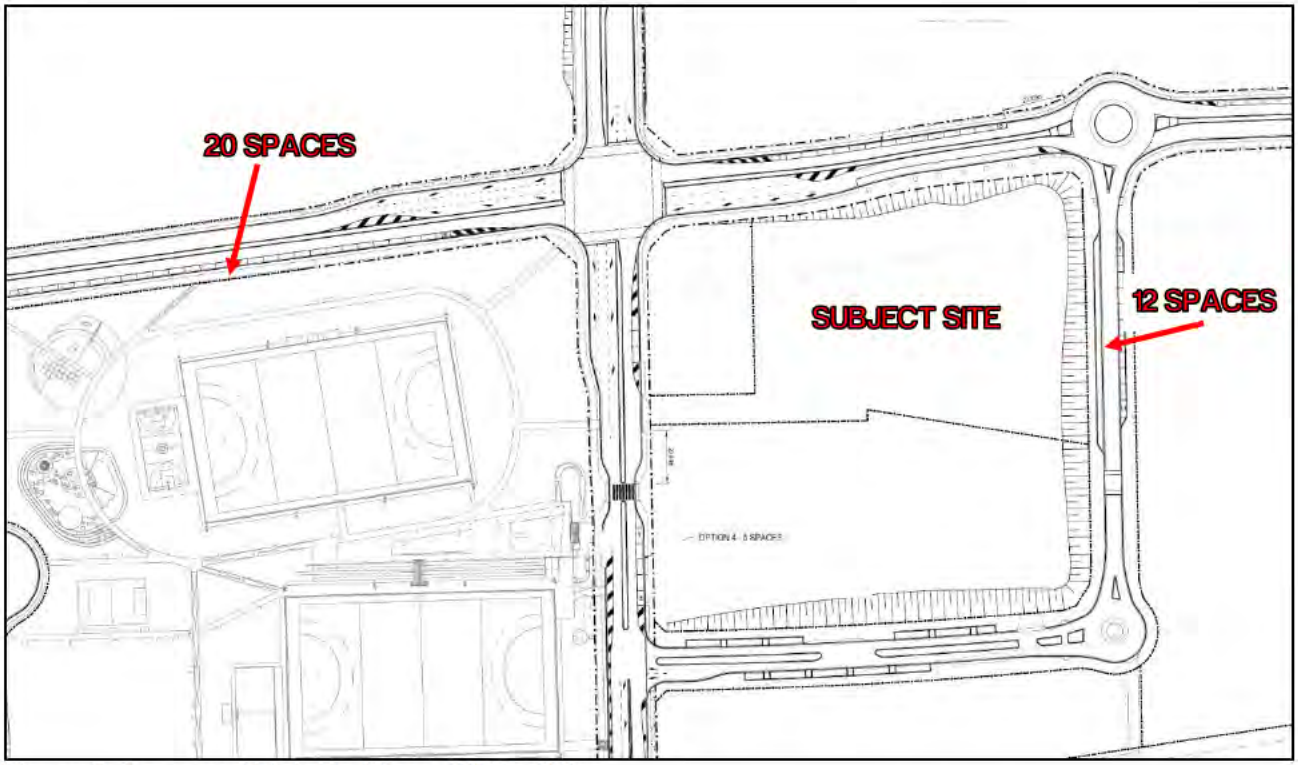

Figure 7: Proposed Pick-Up / Drop-Off Facilities

Due to the location of the second pick-up / drop-off area on Fontana Drive, this area would be for secondary school students, while the Road B pick-up / drop-off area is dedicated for the primary school only.

Application of the pick-up / drop-off demand to the proposed School capacity is detailed in **Figure 6** and **Figure 7**.

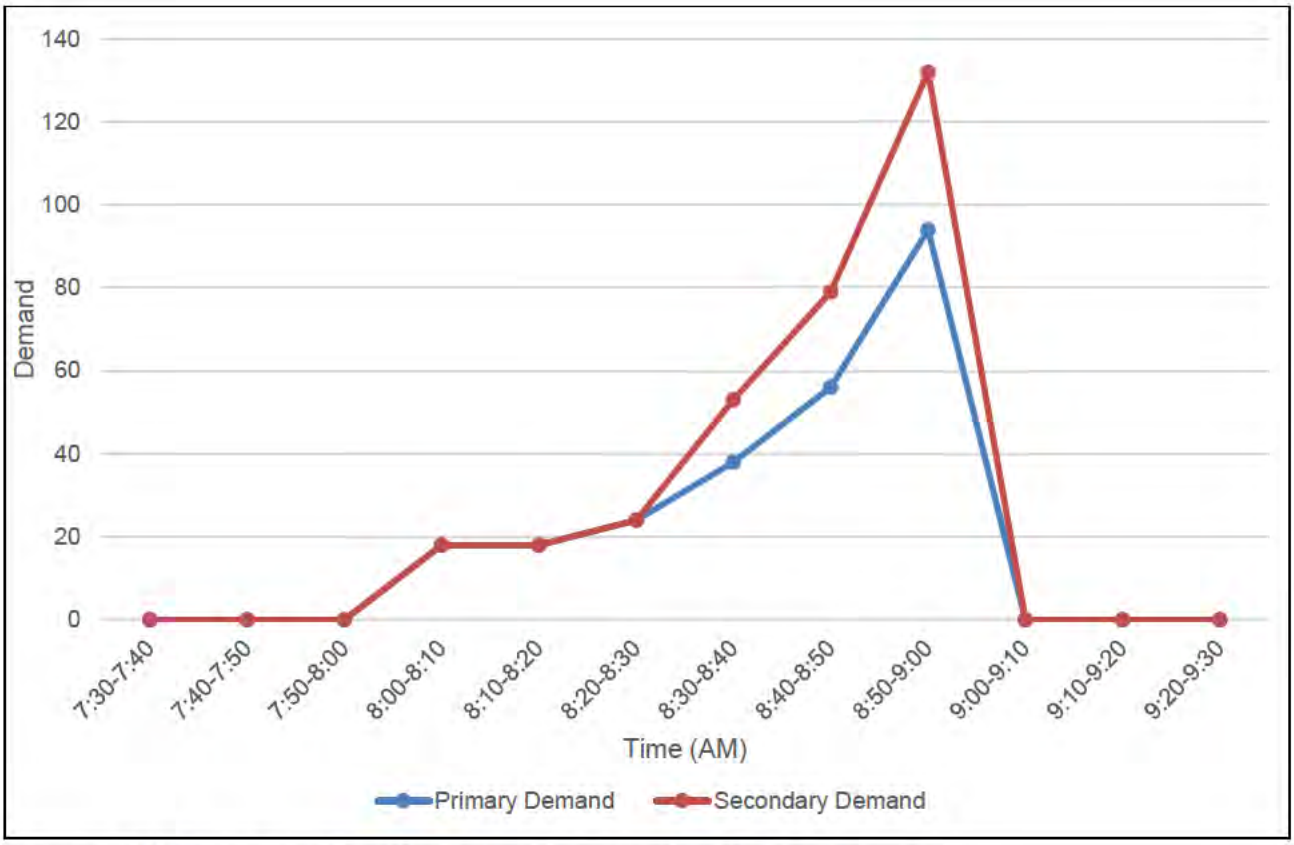

Figure 8: AM Peak Period Pick-Up / Drop-Off Demand – Full Development

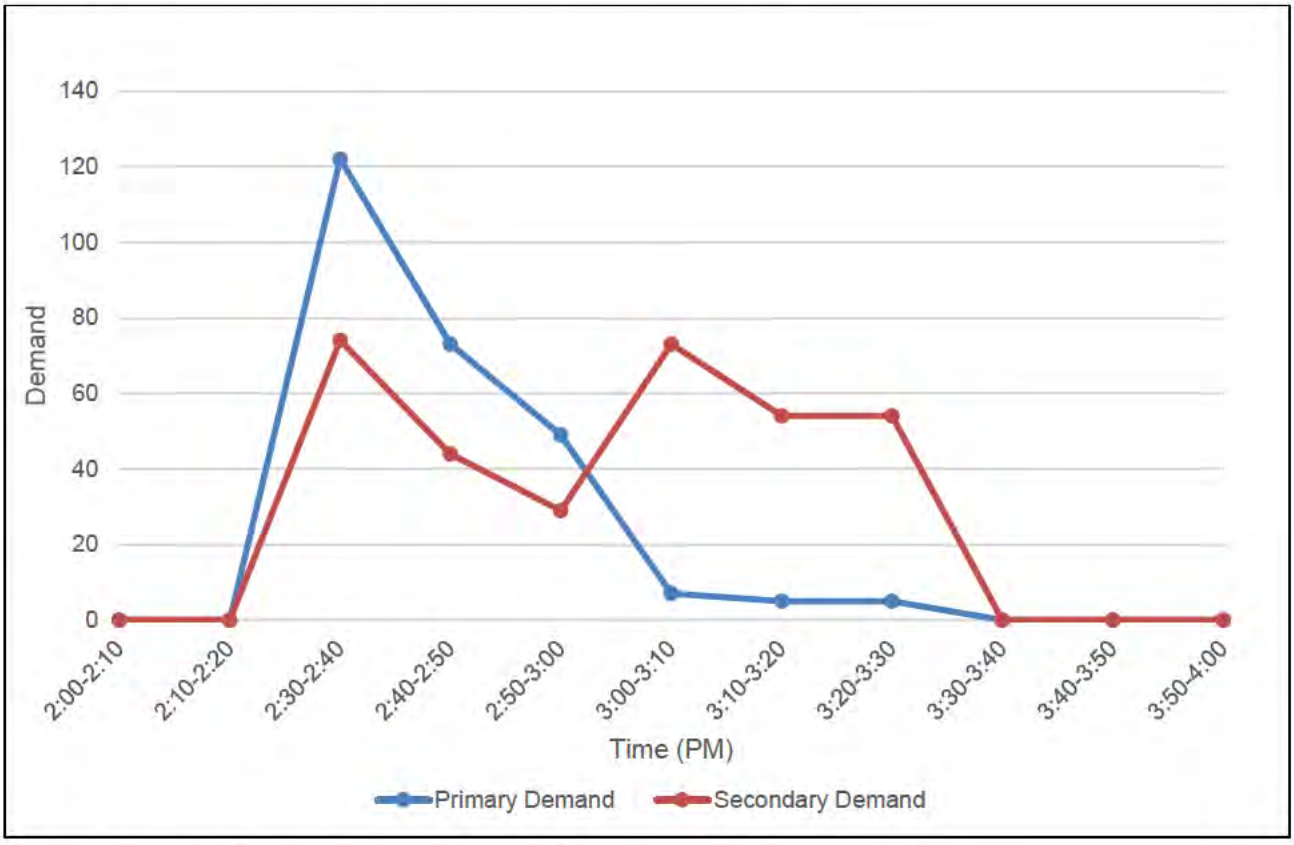

Figure 9: PM Peak Period Pick-Up / Drop-Off Demand – Full Development

The above figures detail the following peak demands:

- Primary School:
  - AM Peak: 94 vehicles
  - School PM Peak: 122 vehicles
- Secondary School:
  - AM Peak: 132 vehicles
  - School PM Peak: 74 vehicles

The AM peak demand for both the primary and secondary school would occur during the 10-minute period prior to commencement of school, while the PM peak demand would occur during the 10-minute after the final school bell.

As mentioned above, the provision of 12 pick-up / drop-off spaces on-street along the northern frontage, a traffic management plan would also be implemented to facilitate reduced times to pick-up / drop-off students. It is envisaged that a traffic management plan could facilitate a turnover rate of 1 vehicle per space every minute. This corresponds to a capacity of 120 vehicles along the Road B frontage which would accommodate the AM and School PM peak. It is noted that school PM peak exceeds 120, however this is by 2 vehicles and would be accommodated after the 10-minute peak after the school bell (i.e. 10 minutes after the final school bell) as this timeframe only has a demand of 73 vehicles in that 10-minute period.

Similarly, the adoption of a traffic management plan mentioned above, would provide the secondary school pick-up / drop-off area with a capacity of 200 vehicles during the 10-minute period prior to school commencement. This would adequately accommodate the maximum demand of 132 vehicles.

Traffic Management and Operation

Traffic management measures have been discussed and agreed with Council, the CEDP will need to provide a range of operation management strategies to ensure the safe and efficient operation of the pick-up / drop-off areas. While final management plans will need to be finalised prior to the opening of the School, Ason Group provides the following broad recommendations:

- All the key roads providing pick-up / drop-off facilities – including Fontana Drive south of Red Gables Road – must be constructed prior to the opening of the College; this includes kerb, guttering and all footpaths/shared paths so as to ensure that students can access the pick-up / drop-off facilities from the outset.
- Further to the above, as a minimum a pedestrian crossing will need to be installed across Red Gables Road east of Fontana Drive to ensure safe passage with the College (and the Town Centre more generally) and the Fontana Drive pick-up / drop-off (and local playing fields and residential areas south of Red Gables Road more generally). The responsibility for the provision of the crossing will require determination further to consultation between Council, CEDP and Celestino.
- The pick-up / drop-off areas will need to operate under supervision to maximise safety and efficiency; key component of a future operational management plan for the pick-up / drop-off areas is expected to include:
  - Staff monitoring student and driver activities;
  - The provision of an ‘active’ zone within which the pick-up / drop-off actually occurs so as to prevent vehicles weaving in and out of the pick-up / drop-off area;
  - Student names on car visors to assist in the efficient operation of the pick-up / drop-off; and
  - Student marshalling areas away from the roadway to maximise the safety of the pick-up / drop-off operations.

It is anticipated that the operation of the pick-up / drop-off areas would be reviewed at a minimum annually during the first few years of College operations in consultation with Council, RMS and local bus operators. Investigations into the public transport provision and modal splits of students will also provide insight into potential methods at accommodating the demand of the pick-up / drop-off area. This traffic management plan will be an evolving document which will undergo renewal and revision.

Notwithstanding the above, it is also acknowledged that parents / carers will park off-street within the Town Centre, for example in the future supermarket car park (expected to be provided at grade directly to the north of the Site) or in other local streets (without parking restrictions such as proposed within the Town Centre itself). This is perfectly acceptable behaviour, as observed in local centres every morning and afternoon where parents/carers combine a DOPU trip with (most often) a shopping trip. The expected use of the (for example) future supermarket parking spaces should not therefore be seen as providing for the pick-up / drop-off demand, but as providing for a genuine shared trip demand.

It must again be acknowledged also that while there is expected to be a high proportion of student pick-up / drop-off demand in the early years of operation, the College will in the medium (and then long) term be centrally located within a residential suburb, with the majority of students being drawn from the local area. Complementing school bus services will be public bus and active transport services and infrastructure within The Gables, all of which will reduce pick-up / drop-off over time.

Appendix C

Signage and Line Marking Plan

LEGEND:

LOCAL CENTRE ZONING (B2)

NOTE:

1. THE 40Km/h SCHOOL SPEED ZONE EXTENT AND ASSOCIATED SIGNAGE AND LINEMARKING IS TO BE DETERMINED AND IMPLEMENTED BY TFNSW. SCHOOL SPEED ZONE SIGNAGE AND LINEMARKING SHOWN ARE INDICATIVE.

90m OF BUS BAYS HAVE BEEN ALLOWED FOR ON THE FONTANA DRIVE NORTH FRONTAGE OF THE COLLEGE WHICH CAN ACCOMMODATE 5 12.5m LONG BUSES PER TFNSW / BUSWAYS MEETING ON 14/12/2018.

12 KISS AND RIDE SPACES (76m) TO BE PROVIDED IN THE INTENDED PARKING BAYS ON THE ROAD B SCHOOL FRONTAGE.

28 KISS AND RIDE SPACES (168m) HAVE BEEN PROVIDED FOR SECONDARY SCHOOL STUDENTS ALONG THE SPORTING FIELD FRONTAGE ON FONTANA DRIVE SOUTH.

ACCESS DRIVEWAY FOR FLOW SYSTEM MAINTENANCE ONLY.

ACCESS DRIVEWAY FOR STAFF CARPARK (TEMPORARY).

SANTA SOPHIA CATHOLIC COLLEGE

FONTANA DRIVE

RED GABLES ROAD

ROAD B

ROAD A

CATARACT ROAD

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF	APPD
11	3/06/2021	ISSUED FOR INFORMATION	CWH	-	-	RH
10	2/06/2021	ISSUED FOR INFORMATION	CWH	-	-	RH
9	1/06/2021	ISSUED FOR INFORMATION	CWH	-	-	RH
8	25/05/2021	ISSUED FOR INFORMATION	CWH	-	-	RH
7	24/05/2021	ISSUED FOR INFORMATION	CWH	-	-	RH
6	20/05/2021	ISSUED FOR INFORMATION	CWH	-	-	RH
5	18/05/2021	ISSUED FOR INFORMATION	CWH	-	-	RH
4	13/05/2021	ISSUED FOR INFORMATION	CWH	-	-	RH

Client: Stockland "it's your place" — THE GABLES BOX HILL

Scale: 0 15 30 45 60 75m — SCALE 1:750 @A1

North

enspire
Enspire Solutions Pty Ltd
205/275 Alfred Street N, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135

Project: THE GABLES TOWN CENTRE

Title: TOWN CENTRE PARKING SIGNAGE

Scale: 1:750

Date: 9/06/2020

Size: A1

Datum: AHD

Status: FOR APPROVAL — NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number: 180004-SK-0141

Revision: 11

DATE PLOTTED: 3 June 2021 1:29 PM BY : CIARAN WALKER-HEALION

CAD File: P:\180004 Gables\D-Civil\00-SiteWide\Drawings\4-Sketches\180004-SK-0141-TOWN CENTRE AND SCHOOL PARKING SIGNAGE.dwg

Appendix D

Bus Route Maps

741 Oakville to Riverstone via Maraylya & Box Hill

B

How to use this timetable

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Always separate your cards when you tap on and tap off so your preferred card is charged.

You will receive the same travel benefits of an Adult Opal card when you tap on and tap off consistently with the same credit card, debit card or linked device. This includes daily, weekly and weekend travel caps, and a $2 transfer discount when you change between metro/train, ferry, bus and light rail services within 60 minutes. Adult Opal fare pricing applies.

Find out more at **transportnsw.info/contactless**

Explanation of definitions and symbols

♿	Wheelchair Accessible
S	Bus operates public school days only

NSW GOVERNMENT | Transport

741 Riverstone to Oakville via Box Hill & Maraylya

B

Valid from: 12 July 2021

Creation date: 05 Oct 2021
NOTE: nformat on s correct on date of down oad.

Monday to Friday		♿	♿	♿		♿	♿	♿	♿
Riverstone Station	06:43	07:13	07:40	08:10	08:40	09:40	10:40	11:40	12:40
Junction Rd at Hobart St, Grantham Farm	06:48	07:18	07:47	08:17	08:47	09:47	10:47	11:47	12:47
Old Pitt Town Rd at Boundary Rd, Gables	06:54	07:24	07:54	08:24	08:54	09:54	10:54	11:54	12:54
Valletta Dr at Sundowner Pwy, Gables	06:59	07:29	07:59	08:29	08:59	09:59	10:59	11:59	12:59

Monday to Friday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Riverstone Station	13:40	14:40	15:40	16:40	17:10	17:40	18:10	18:40	19:10
Junction Rd at Hobart St, Grantham Farm	13:47	14:47	15:47	16:47	17:17	17:47	18:17	18:47	19:16
Vineyard Caravan Park, Commercial Rd, Vineyard	–	–	–	–	17:22	–	–	–	–
Old Pitt Town Rd at Boundary Rd, Gables	13:54	14:54	15:56	16:56	17:31	17:56	18:26	18:56	19:23
Valletta Dr at Sundowner Pwy, Gables	13:59	14:59	16:02	17:02	17:37	18:02	18:32	19:02	19:27
Maraylya Public School, Boundary Rd, Maraylya	-	-	-	-	17:42	-	-	-	-
Reedy Rd at Fisher Rd, Maraylya	-	-	-	-	17:46	-	-	-	-
Scheyville Rd near Cattai Ridge Rd, Maraylya	-	-	-	-	17:49	-	-	-	-
Old Stock Route Rd before Saunders Rd, Oakville	-	-	-	-	17:54	-	-	-	-
Oakville Rd after Broos Rd, Oakville	-	-	-	-	17:57	-	-	-	-

Monday to Friday	♿	♿
Riverstone Station	19:40	20:15
Junction Rd at Hobart St, Grantham Farm	19:46	20:21
Old Pitt Town Rd at Boundary Rd, Gables	19:53	20:28
Valletta Dr at Sundowner Pwy, Gables	19:57	20:32

Saturday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Riverstone Station	07:43	08:43	09:43	10:43	11:43	12:43	13:43	14:43	15:43
Junction Rd at Hobart St, Grantham Farm	07:49	08:49	09:49	10:49	11:49	12:49	13:49	14:49	15:49
Old Pitt Town Rd at Boundary Rd, Gables	07:56	08:56	09:56	10:56	11:56	12:56	13:56	14:56	15:56
Valletta Dr at Sundowner Pwy, Gables	08:01	09:01	10:01	11:01	12:01	13:01	14:01	15:01	16:01

Saturday	♿	♿	♿	♿
Riverstone Station	16:43	17:43	18:43	19:43
Junction Rd at Hobart St, Grantham Farm	16:49	17:49	18:49	19:49
Old Pitt Town Rd at Boundary Rd, Gables	16:56	17:56	18:56	19:56
Valletta Dr at Sundowner Pwy, Gables	17:01	18:01	19:01	20:01

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Riverstone Station	08:43	09:43	10:43	11:43	12:43	13:43	14:43	15:43	16:43
Junction Rd at Hobart St, Grantham Farm	08:49	09:49	10:49	11:49	12:49	13:49	14:49	15:49	16:49
Old Pitt Town Rd at Boundary Rd, Gables	08:56	09:56	10:56	11:56	12:56	13:56	14:56	15:56	16:56
Valletta Dr at Sundowner Pwy, Gables	09:01	10:01	11:01	12:01	13:01	14:01	15:01	16:01	17:01

Sunday & Public Holidays	♿	♿
Riverstone Station	17:43	18:43
Junction Rd at Hobart St, Grantham Farm	17:49	18:49
Old Pitt Town Rd at Boundary Rd, Gables	17:56	18:56
Valletta Dr at Sundowner Pwy, Gables	18:01	19:01

741 Oakville to Riverstone via Maraylya & Box Hill

B

Monday to Friday	♿	♿	♿	♿	♿	♿		♿	♿
Service Information			S						
Oakville Rd at Smith Rd, Oakville	-	-	06:37	-	-	-	-	-	-
Old Stock Route Rd at Saunders Rd, Oakville	-	-	06:39	-	-	-	-	-	-
Scheyville Rd near Cattai Ridge Rd, Maraylya	-	-	06:44	-	-	-	-	-	-
Fisher Rd at Reedy Rd, Maraylya	-	-	06:47	-	-	-	-	-	-
Maraylya Public School, Boundary Rd, Maraylya	-	-	06:52	-	-	-	-	-	-
Valletta Dr after Cavalo Wy, Gables	06:08	06:38	06:58	07:33	08:03	08:33	09:06	10:06	11:06
Old Pitt Town Rd before Boundary Rd, Box Hill	06:11	06:41	07:02	07:37	08:07	08:37	09:10	10:10	11:10
Windsor Rd opp Sydney St, Grantham Farm	06:17	06:47	07:15	07:45	08:15	08:45	09:17	10:17	11:17
Riverstone Station	06:25	06:55	07:25	07:55	08:25	08:55	09:25	10:25	11:25

Monday to Friday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Valletta Dr after Cavalo Wy, Gables	12:06	13:06	14:06	15:06	16:06	17:06	17:36	18:06	18:36
Old Pitt Town Rd before Boundary Rd, Box Hill	12:10	13:10	14:10	15:10	16:10	17:10	17:40	18:09	18:39
Windsor Rd opp Sydney St, Grantham Farm	12:17	13:17	14:17	15:17	16:17	17:17	17:47	18:15	18:45
Riverstone Station	12:25	13:25	14:25	15:25	16:25	17:25	17:55	18:22	18:52

Monday to Friday	♿
Valletta Dr after Cavalo Wy, Gables	19:06
Old Pitt Town Rd before Boundary Rd, Box Hill	19:09
Windsor Rd opp Sydney St, Grantham Farm	19:15
Riverstone Station	19:22

Saturday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Valletta Dr after Cavalo Wy, Gables	07:02	08:02	09:02	10:02	11:02	12:02	13:02	14:02	15:02
Old Pitt Town Rd before Boundary Rd, Box Hill	07:05	08:05	09:05	10:05	11:05	12:05	13:05	14:05	15:05
Windsor Rd opp Sydney St, Grantham Farm	07:12	08:12	09:12	10:12	11:12	12:12	13:12	14:12	15:12
Riverstone Station	07:20	08:20	09:20	10:20	11:20	12:20	13:20	14:20	15:20

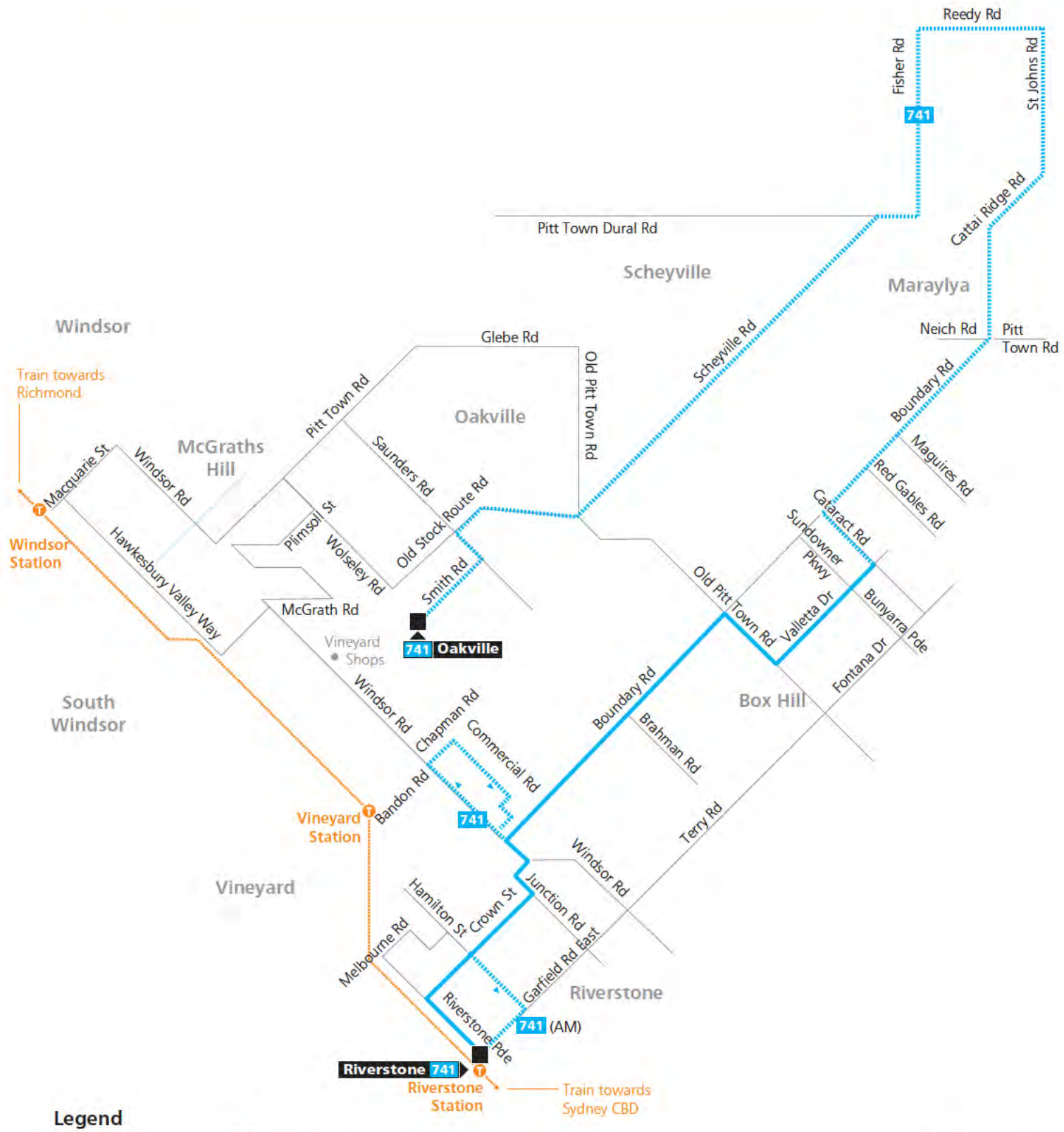
Saturday	♿	♿	♿	♿
Valletta Dr after Cavalo Wy, Gables	16:02	17:02	18:02	19:02
Old Pitt Town Rd before Boundary Rd, Box Hill	16:05	17:05	18:05	19:05
Windsor Rd opp Sydney St, Grantham Farm	16:12	17:12	18:12	19:12
Riverstone Station	16:20	17:20	18:20	19:20

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Valletta Dr after Cavalo Wy, Gables	08:02	09:02	10:02	11:02	12:02	13:02	14:02	15:02	16:02
Old Pitt Town Rd before Boundary Rd, Box Hill	08:05	09:05	10:05	11:05	12:05	13:05	14:05	15:05	16:05
Windsor Rd opp Sydney St, Grantham Farm	08:12	09:12	10:12	11:12	12:12	13:12	14:12	15:12	16:12
Riverstone Station	08:20	09:20	10:20	11:20	12:20	13:20	14:20	15:20	16:20

Sunday & Public Holidays	♿	♿
Valletta Dr after Cavalo Wy, Gables	17:02	18:02
Old Pitt Town Rd before Boundary Rd, Box Hill	17:05	18:05
Windsor Rd opp Sydney St, Grantham Farm	17:12	18:12
Riverstone Station	17:20	18:20

Route 741

B



Legend

- Bus route
- 741 Bus route number
- Bus route start/finish
- Train line/station

North

Diagrammatic Map
Not to Scale

NSW GOVERNMENT | Transport

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746 Riverstone to Rouse Hill

B

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You will receive the same travel benefits of an Adult Opal card when you tap on and tap off consistently with the same credit card, debit card or linked device. This includes daily, weekly and weekend travel caps, and a $2 transfer discount when you change between metro/train, ferry, bus and light rail services within 60 minutes. Adult Opal fare pricing applies.

Find out more at **transportnsw.info/contactless**

Explanation of definitions and symbols

♿	Wheelchair Accessible
S	Bus operates public school days only
A	Bus Operates via McCulloch, Elizabeth & Piccadilly Streets, omitting Garfield Rd East between McCulloch and Piccadilly Streets
B	Bus diverts from Old Pitt Town Rd via Mason Rd, Terry Rd and Hynds Rd, omitting Nelson Rd between Mason Rd & Edwards Rd

NSW GOVERNMENT | Transport

746 Rouse Hill to Riverstone

B

Valid from: 12 July 2021

Creation date: 05 Oct 2021
NOTE: nformat on s correct on date of down oad.

Monday to Friday	♿	♿	♿	♿	♿	♿	♿		♿
Service Information				S					
Rouse Hill Station	06:39	07:05	07:39	A07:59	08:29	09:29	10:29	11:29	12:29
Rouse Hill Rural Fire Brigade, Withers Rd, Rouse Hill	06:46	07:12	07:46	A08:06	08:36	09:36	10:36	11:36	12:36
Old Pitt Town Rd after Mason Rd, Box Hill	06:53	07:19	07:53	A08:13	08:43	09:43	10:43	11:43	12:43
Terry Rd before Windsor Rd, Box Hill	07:04	07:30	08:04	A08:24	08:54	09:54	10:54	11:54	12:54
Edmund St before Garfield Rd East, Grantham Farm	07:11	07:37	08:11	08:31	09:01	10:01	11:01	12:01	13:01
McCulloch St opp Woods St, Riverstone	–	–	–	08:34	–	–	–	–	–
Norwest Christian College, Riverstone	–	–	–	08:35	–	–	–	–	–
Riverstone High School, McCulloch St, Riverstone	–	–	–	08:37	–	–	–	–	–
Riverstone PS, Elizabeth St, Riverstone	–	–	–	08:40	–	–	–	–	–
Riverstone Station	07:24	07:50	08:24	08:49	09:11	10:11	11:11	12:11	13:11

Monday to Friday	♿		♿	♿	♿	♿	♿	♿	♿
Rouse Hill Station	13:29	14:29	15:29	16:29	16:59	17:26	17:56	18:26	18:56
Rouse Hill Rural Fire Brigade, Withers Rd, Rouse Hill	13:36	14:36	15:38	16:38	17:08	17:35	18:05	18:35	19:05
Old Pitt Town Rd after Mason Rd, Box Hill	13:43	14:43	15:45	16:45	17:15	17:42	18:12	18:42	19:12
Terry Rd before Windsor Rd, Box Hill	13:54	14:54	15:57	16:57	17:27	17:54	18:24	18:54	19:24
Edmund St before Garfield Rd East, Grantham Farm	14:01	15:01	16:05	17:05	17:35	18:02	18:32	19:01	19:31
Riverstone Station	14:11	15:11	16:14	17:14	17:44	18:11	18:41	19:08	19:38

Monday to Friday	♿	♿	♿	♿	♿
Rouse Hill Station	19:26	19:56	20:26	20:56	21:26
Rouse Hill Rural Fire Brigade, Withers Rd, Rouse Hill	19:35	20:05	20:35	21:05	21:35
Old Pitt Town Rd after Mason Rd, Box Hill	19:42	20:12	20:42	21:12	21:42
Terry Rd before Windsor Rd, Box Hill	19:54	20:24	20:54	21:24	21:54
Edmund St before Garfield Rd East, Grantham Farm	20:01	20:31	21:01	21:31	-
Riverstone Station	20:08	20:38	21:08	21:38	-

Saturday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Rouse Hill Station	08:22	09:22	10:22	11:22	12:22	13:22	14:22	15:22	16:22
Rouse Hill Rural Fire Brigade, Withers Rd, Rouse Hill	08:31	09:31	10:31	11:31	12:31	13:31	14:31	15:31	16:31
Old Pitt Town Rd after Mason Rd, Box Hill	08:38	09:38	10:38	11:38	12:38	13:38	14:38	15:38	16:38
Terry Rd before Windsor Rd, Box Hill	08:50	09:50	10:50	11:50	12:50	13:50	14:50	15:50	16:50
Edmund St before Garfield Rd East, Grantham Farm	08:57	09:57	10:57	11:57	12:57	13:57	14:57	15:57	16:57
Riverstone Station	09:04	10:04	11:04	12:04	13:04	14:04	15:04	16:04	17:04

Saturday	♿	♿	♿
Rouse Hill Station	17:22	18:22	19:22
Rouse Hill Rural Fire Brigade, Withers Rd, Rouse Hill	17:31	18:31	19:31
Old Pitt Town Rd after Mason Rd, Box Hill	17:38	18:38	19:38
Terry Rd before Windsor Rd, Box Hill	17:50	18:50	19:50
Edmund St before Garfield Rd East, Grantham Farm	17:57	18:57	19:57
Riverstone Station	18:04	19:04	20:04

746 Rouse Hill to Riverstone

B

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Rouse Hill Station	08:22	09:22	10:22	11:22	12:22	13:22	14:22	15:22	16:22
Rouse Hill Rural Fire Brigade, Withers Rd, Rouse Hill	08:31	09:31	10:31	11:31	12:31	13:31	14:31	15:31	16:31
Old Pitt Town Rd after Mason Rd, Box Hill	08:38	09:38	10:38	11:38	12:38	13:38	14:38	15:38	16:38
Terry Rd before Windsor Rd, Box Hill	08:50	09:50	10:50	11:50	12:50	13:50	14:50	15:50	16:50
Edmund St before Garfield Rd East, Grantham Farm	08:57	09:57	10:57	11:57	12:57	13:57	14:57	15:57	16:57
Riverstone Station	09:04	10:04	11:04	12:04	13:04	14:04	15:04	16:04	17:04

Sunday & Public Holidays	♿	♿	♿
Rouse Hill Station	17:22	18:22	19:22
Rouse Hill Rural Fire Brigade, Withers Rd, Rouse Hill	17:31	18:31	19:31
Old Pitt Town Rd after Mason Rd, Box Hill	17:38	18:38	19:38
Terry Rd before Windsor Rd, Box Hill	17:50	18:50	19:50
Edmund St before Garfield Rd East, Grantham Farm	17:57	18:57	19:57
Riverstone Station	18:04	19:04	20:04

746 Riverstone to Rouse Hill

B

Monday to Friday	♿		♿	♿	♿		♿	♿	♿
Service Information							**S**		
Riverstone Station	-	-	06:19	06:49	07:19	07:49	B08:06	08:52	09:52
Edmund St after Garfield Rd East, Grantham Farm	-	-	06:25	06:55	07:25	07:55	B08:12	08:58	09:58
Terry Rd after Windsor Rd, Box Hill	05:33	06:03	06:33	07:03	07:33	08:03	B08:20	09:06	10:06
Old Pitt Town Rd before Nelson Rd (Hail & Ride), Nelson (2765)	05:44	06:14	06:44	07:14	07:44	08:14	08:31	09:17	10:17
Rouse Hill Rural Fire Brigade, Withers Rd, Rouse Hill	05:51	06:21	06:51	07:21	07:51	08:21	08:44	09:24	10:24
Rouse Hill Public School, Clower Ave, Rouse Hill	–	–	–	–	–	–	08:57	–	–
Rouse Hill Station	06:02	06:32	07:02	07:32	08:02	08:32	09:02	09:32	10:32

Monday to Friday	♿	♿	♿	♿	♿	♿	♿		♿
Service Information					**S**				
Riverstone Station	10:52	11:52	12:52	13:52	15:09	15:39	16:09	16:39	17:09
McCulloch St opp Woods St, Riverstone	–	–	–	–	15:15	–	–	–	–
Norwest Christian College, Riverstone	–	–	–	–	15:16	–	–	–	–
Riverstone High School, McCulloch St, Riverstone	–	–	–	–	15:17	–	–	–	–
Riverstone PS, Elizabeth St, Riverstone	–	–	–	–	15:20	–	–	–	–
Edmund St after Garfield Rd East, Grantham Farm	10:58	11:58	12:58	13:58	15:25	15:45	16:15	16:45	17:15
Terry Rd after Windsor Rd, Box Hill	11:06	12:06	13:06	14:06	15:33	15:53	16:23	16:53	17:23
Old Pitt Town Rd before Nelson Rd (Hail & Ride), Nelson (2765)	11:17	12:17	13:17	14:17	15:44	16:04	16:34	17:04	17:34
Rouse Hill Rural Fire Brigade, Withers Rd, Rouse Hill	11:24	12:24	13:24	14:24	15:52	16:12	16:42	17:12	17:42
Rouse Hill Station	11:32	12:32	13:32	14:32	16:02	16:22	16:52	17:22	17:52

Monday to Friday	♿	♿	♿	♿	♿	♿	♿
Riverstone Station	17:39	18:09	18:39	19:09	19:39	20:39	21:39
Edmund St after Garfield Rd East, Grantham Farm	17:45	18:15	18:45	19:15	19:45	20:45	21:45
Terry Rd after Windsor Rd, Box Hill	17:53	18:23	18:53	19:23	19:53	20:53	21:53
Old Pitt Town Rd before Nelson Rd (Hail & Ride), Nelson (2765)	18:04	18:34	19:04	19:34	20:04	21:04	22:04
Rouse Hill Rural Fire Brigade, Withers Rd, Rouse Hill	18:12	18:42	19:12	19:42	20:12	21:12	22:12
Rouse Hill Station	18:22	18:52	19:22	19:52	20:22	21:22	22:22

Saturday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Riverstone Station	07:22	08:22	09:22	10:22	11:22	12:22	13:22	14:22	15:22
Edmund St after Garfield Rd East, Grantham Farm	07:28	08:28	09:28	10:28	11:28	12:28	13:28	14:28	15:28
Terry Rd after Windsor Rd, Box Hill	07:36	08:36	09:36	10:36	11:36	12:36	13:36	14:36	15:36
Old Pitt Town Rd before Nelson Rd (Hail & Ride), Nelson (2765)	07:47	08:47	09:47	10:47	11:47	12:47	13:47	14:47	15:47
Rouse Hill Rural Fire Brigade, Withers Rd, Rouse Hill	07:55	08:55	09:55	10:55	11:55	12:55	13:55	14:55	15:55
Rouse Hill Station	08:05	09:05	10:05	11:05	12:05	13:05	14:05	15:05	16:05

Saturday	♿	♿	♿
Riverstone Station	16:22	17:22	18:22
Edmund St after Garfield Rd East, Grantham Farm	16:28	17:28	18:28
Terry Rd after Windsor Rd, Box Hill	16:36	17:36	18:36
Old Pitt Town Rd before Nelson Rd (Hail & Ride), Nelson (2765)	16:47	17:47	18:47
Rouse Hill Rural Fire Brigade, Withers Rd, Rouse Hill	16:55	17:55	18:55
Rouse Hill Station	17:05	18:05	19:05

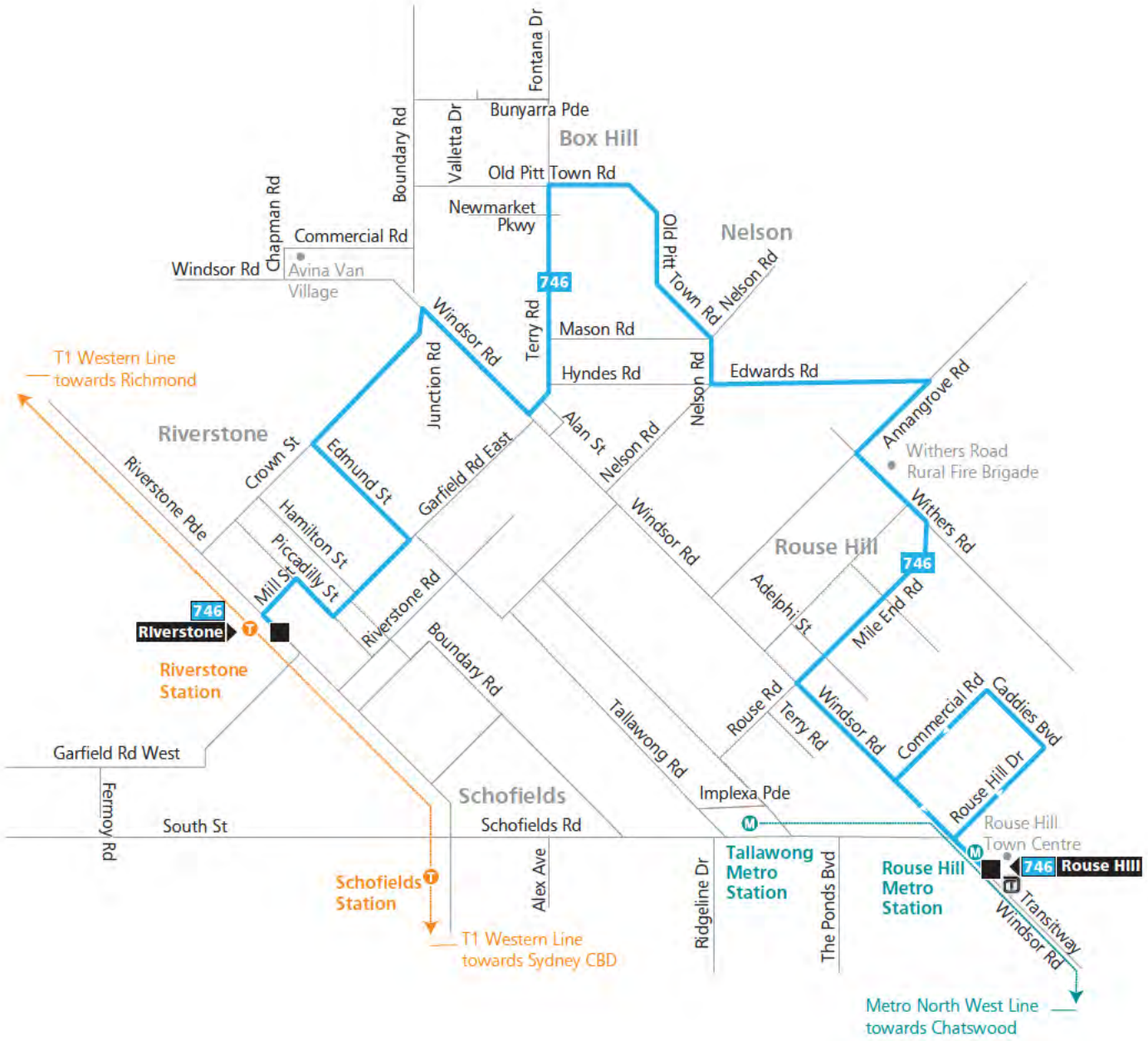
746 Riverstone to Rouse Hill

B

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Riverstone Station	07:22	08:22	09:22	10:22	11:22	12:22	13:22	14:22	15:22
Edmund St after Garfield Rd East, Grantham Farm	07:28	08:28	09:28	10:28	11:28	12:28	13:28	14:28	15:28
Terry Rd after Windsor Rd, Box Hill	07:36	08:36	09:36	10:36	11:36	12:36	13:36	14:36	15:36
Old Pitt Town Rd before Nelson Rd (Hail & Ride), Nelson (2765)	07:47	08:47	09:47	10:47	11:47	12:47	13:47	14:47	15:47
Rouse Hill Rural Fire Brigade, Withers Rd, Rouse Hill	07:55	08:55	09:55	10:55	11:55	12:55	13:55	14:55	15:55
Rouse Hill Station	08:05	09:05	10:05	11:05	12:05	13:05	14:05	15:05	16:05

Sunday & Public Holidays	♿	♿	♿
Riverstone Station	16:22	17:22	18:22
Edmund St after Garfield Rd East, Grantham Farm	16:28	17:28	18:28
Terry Rd after Windsor Rd, Box Hill	16:36	17:36	18:36
Old Pitt Town Rd before Nelson Rd (Hail & Ride), Nelson (2765)	16:47	17:47	18:47
Rouse Hill Rural Fire Brigade, Withers Rd, Rouse Hill	16:55	17:55	18:55
Rouse Hill Station	17:05	18:05	19:05

Route 746



Legend

- Bus route
- 746 Bus route number
- Bus route start/finish
- Train line/station

North — Diagrammatic Map Not to Scale

NSW GOVERNMENT Transport

transportnsw.info

740 Box Hill to Rouse Hill

B

How to use this timetable

This timetable provides a snapshot of service information in 24-hour time (e.g. 5am = 05:00, 5pm = 17:00). Information contained in this timetable is subject to change without notice. Please note that timetables do not include minor stops, additional trips for special events, short term changes, holiday timetable changes, real-time information or any disruption alerts.

For the most up-to-date times, use the Trip Planner or Departures at **transportnsw.info**

Real-time planning

You can plan your trip with real-time information using the Trip Planner or Departures at **transportnsw.info** or by downloading travel apps on your smartphone or tablet.

The Trip Planner, Departures and travel apps offer various features:

- favourite your regular trips
- see where your service is on the route
- get estimated pick-up and arrival times
- receive service updates
- find nearby stations, stops, wharves and routes
- check accessibility information.

Find the latest apps at **transportnsw.info/apps**

Accessible services

All new buses are wheelchair-accessible with low-level floors and space for wheelchairs, prams or strollers. Look for the ♿ symbol in this timetable. Some older buses may not have all the features you need. There will be more accessible services as older buses are replaced.

Who is providing my bus services?

The bus services shown in this timetable are run by Busways Western Sydney.

Fares

In Sydney and surrounding regions, fares are based on:

- the distance you travel from tap on to tap off
- the mode of transport you choose
- whether you're eligible for a concession fare or free travel
- any Opal benefits such as discounts and capped fares that apply.

You can use an Opal card or a contactless payment to pay for your travel.

Opal cards

An Opal card is a smartcard you keep and reuse. Add value before you travel, and tap on and tap off to pay your fares throughout Sydney, the Blue Mountains, the Central Coast, the Hunter and the Illawarra.

Which Opal card is right for you?

Adult – Customers 16 years or older who are not entitled to any concessions and normally pay full fare.

Child/Youth – For customers aged 4-15 (inclusive), or customers 16 years or older who hold a NSW/ACT Senior Secondary Student Concession Card.

Gold Senior/Pensioner – For eligible NSW and interstate seniors, pensioners, war widows/ers and asylum seekers.

Concession – For eligible tertiary students, job seekers, apprentices and trainees.

How to get an Opal card

You can get an Adult or Child/Youth Opal card over the counter at Opal retailers that display the Opal sign. To find your nearest retailer visit **transportnsw.info/opal**.

If you are eligible to travel with concession fares, you can apply for a Gold Senior/Pensioner or Concession Opal card online. Visit **transportnsw.info/opal** for more information.

Contactless payments

If you have an American Express, Mastercard, Visa card or linked device, you can use it to pay for all public transport on the Opal network. Just make sure to tap on and tap off at Opal readers at the beginning and end of your trip.

Always separate your cards when you tap on and tap off so your preferred card is charged.

You will receive the same travel benefits of an Adult Opal card when you tap on and tap off consistently with the same credit card, debit card or linked device. This includes daily, weekly and weekend travel caps, and a $2 transfer discount when you change between metro/train, ferry, bus and light rail services within 60 minutes. Adult Opal fare pricing applies.

Find out more at **transportnsw.info/contactless**

Explanation of definitions and symbols

♿	Wheelchair Accessible
S	Bus operates public school days only

NSW GOVERNMENT | Transport

740 Rouse Hill to Box Hill

B

Valid from: 12 July 2021

Creation date: 05 Oct 2021
NOTE: nformat on s correct on date of down oad.

Monday to Friday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Rouse Hill Station	05:35	06:00	06:28	06:58	07:28	07:58	08:28	09:08	09:38
Windsor Rd before Annangrove Rd, Rouse Hill	05:40	06:05	06:34	07:04	07:34	08:05	08:35	09:15	09:45
Terry Rd after Windsor Rd, Box Hill	05:44	06:09	06:38	07:08	07:38	08:10	08:40	09:20	09:50
76 Terry Rd, Box Hill	05:48	06:13	06:42	07:12	07:42	08:15	08:45	09:25	09:55
Bunyarra Pde at Valletta Dr, Gables	05:53	06:18	06:48	07:18	07:48	08:21	08:51	09:31	10:01

Monday to Friday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Service Information						S			
Rouse Hill Station	10:38	11:38	12:38	13:38	14:38	15:38	16:18	16:48	17:18
Rouse Hill Public School, Clower Ave, Rouse Hill	–	–	–	–	–	15:45	–	–	–
Windsor Rd before Annangrove Rd, Rouse Hill	10:45	11:45	12:45	13:45	14:45	15:56	16:26	16:56	17:26
Terry Rd after Windsor Rd, Box Hill	10:50	11:50	12:50	13:50	14:50	16:03	16:33	17:03	17:33
76 Terry Rd, Box Hill	10:55	11:55	12:55	13:55	14:55	16:08	16:38	17:08	17:38
Bunyarra Pde at Valletta Dr, Gables	11:01	12:01	13:01	14:01	15:01	16:14	16:44	17:14	17:44

Monday to Friday		♿	♿	♿	♿	♿	♿	♿	
Rouse Hill Station	17:48	18:18	18:48	19:18	19:48	20:48	21:48	22:48	
Windsor Rd before Annangrove Rd, Rouse Hill	17:56	18:26	18:56	19:26	19:54	20:54	21:54	22:54	
Terry Rd after Windsor Rd, Box Hill	18:03	18:33	19:03	19:33	19:59	20:59	21:59	22:59	
76 Terry Rd, Box Hill	18:08	18:38	19:08	19:38	20:03	21:03	22:03	23:03	
Bunyarra Pde at Valletta Dr, Gables	18:14	18:44	19:14	19:44	20:09	21:09	22:09	23:09	

Saturday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Rouse Hill Station	06:38	07:38	08:38	09:35	10:35	11:35	12:35	13:35	14:35
Windsor Rd before Annangrove Rd, Rouse Hill	06:44	07:44	08:44	09:42	10:42	11:42	12:42	13:42	14:42
Terry Rd after Windsor Rd, Box Hill	06:48	07:48	08:48	09:47	10:47	11:47	12:47	13:47	14:47
76 Terry Rd, Box Hill	06:52	07:52	08:52	09:52	10:52	11:52	12:52	13:52	14:52
Bunyarra Pde at Valletta Dr, Gables	06:58	07:58	08:58	09:58	10:58	11:58	12:58	13:58	14:58

Saturday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Rouse Hill Station	15:35	16:35	17:35	18:35	19:35	20:35	21:35	22:35	23:35
Windsor Rd before Annangrove Rd, Rouse Hill	15:42	16:42	17:42	18:42	19:41	20:41	21:41	22:41	23:41
Terry Rd after Windsor Rd, Box Hill	15:47	16:47	17:47	18:47	19:46	20:46	21:46	22:46	23:46
76 Terry Rd, Box Hill	15:52	16:52	17:52	18:52	19:50	20:50	21:50	22:50	23:50
Bunyarra Pde at Valletta Dr, Gables	15:58	16:58	17:58	18:58	19:56	20:56	21:56	22:56	23:56

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Rouse Hill Station	07:43	08:35	09:35	10:35	11:35	12:35	13:35	14:35	15:35
Windsor Rd before Annangrove Rd, Rouse Hill	07:49	08:42	09:42	10:42	11:42	12:42	13:42	14:42	15:42
Terry Rd after Windsor Rd, Box Hill	07:53	08:47	09:47	10:47	11:47	12:47	13:47	14:47	15:47
76 Terry Rd, Box Hill	07:57	08:52	09:52	10:52	11:52	12:52	13:52	14:52	15:52
Bunyarra Pde at Valletta Dr, Gables	08:03	08:58	09:58	10:58	11:58	12:58	13:58	14:58	15:58

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿		
Rouse Hill Station	16:35	17:35	18:35	19:35	20:35	21:35	22:35		
Windsor Rd before Annangrove Rd, Rouse Hill	16:42	17:42	18:42	19:41	20:41	21:41	22:41		
Terry Rd after Windsor Rd, Box Hill	16:47	17:47	18:47	19:46	20:46	21:46	22:46		
76 Terry Rd, Box Hill	16:52	17:52	18:52	19:50	20:50	21:50	22:50		
Bunyarra Pde at Valletta Dr, Gables	16:58	17:58	18:58	19:56	20:56	21:56	22:56		

740 Box Hill to Rouse Hill

B

Monday to Friday	♿		♿	♿	♿	♿	♿	♿	♿
Service Information									S
Bunyarra Pd after Valletta Dr, Gables	04:58	05:28	05:58	06:23	06:53	07:23	07:53	08:28	08:56
63 Terry Rd, Box Hill	05:02	05:32	06:02	06:28	06:58	07:28	07:58	08:33	09:01
Terry Rd before Windsor Rd, Box Hill	05:07	05:37	06:07	06:33	07:03	07:33	08:03	08:38	09:06
Windsor Rd before Annangrove Rd, Rouse Hill	05:11	05:41	06:11	06:38	07:08	07:38	08:08	08:43	09:10
Rouse Hill Public School, Clower Ave, Rouse Hill	–	–	–	–	–	–	–	–	09:15
Rouse Hill Station	05:19	05:49	06:19	06:49	07:19	07:49	08:19	08:54	09:24

Monday to Friday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Bunyarra Pd after Valletta Dr, Gables	10:06	11:06	12:06	13:06	14:06	15:06	16:19	16:49	17:19
63 Terry Rd, Box Hill	10:11	11:11	12:11	13:11	14:11	15:11	16:24	16:54	17:24
Terry Rd before Windsor Rd, Box Hill	10:16	11:16	12:16	13:16	14:16	15:16	16:29	16:59	17:29
Windsor Rd before Annangrove Rd, Rouse Hill	10:20	11:20	12:20	13:20	14:20	15:20	16:33	17:03	17:33
Rouse Hill Station	10:29	11:29	12:29	13:29	14:29	15:29	16:42	17:12	17:42

Monday to Friday	♿		♿	♿	♿	♿	♿
Bunyarra Pd after Valletta Dr, Gables	17:49	18:19	18:49	19:19	20:14	21:14	22:14
63 Terry Rd, Box Hill	17:54	18:24	18:54	19:23	20:18	21:18	22:18
Terry Rd before Windsor Rd, Box Hill	17:59	18:29	18:59	19:27	20:22	21:22	22:22
Windsor Rd before Annangrove Rd, Rouse Hill	18:03	18:33	19:03	19:31	20:26	21:26	22:26
Rouse Hill Station	18:12	18:42	19:12	19:39	20:34	21:34	22:34

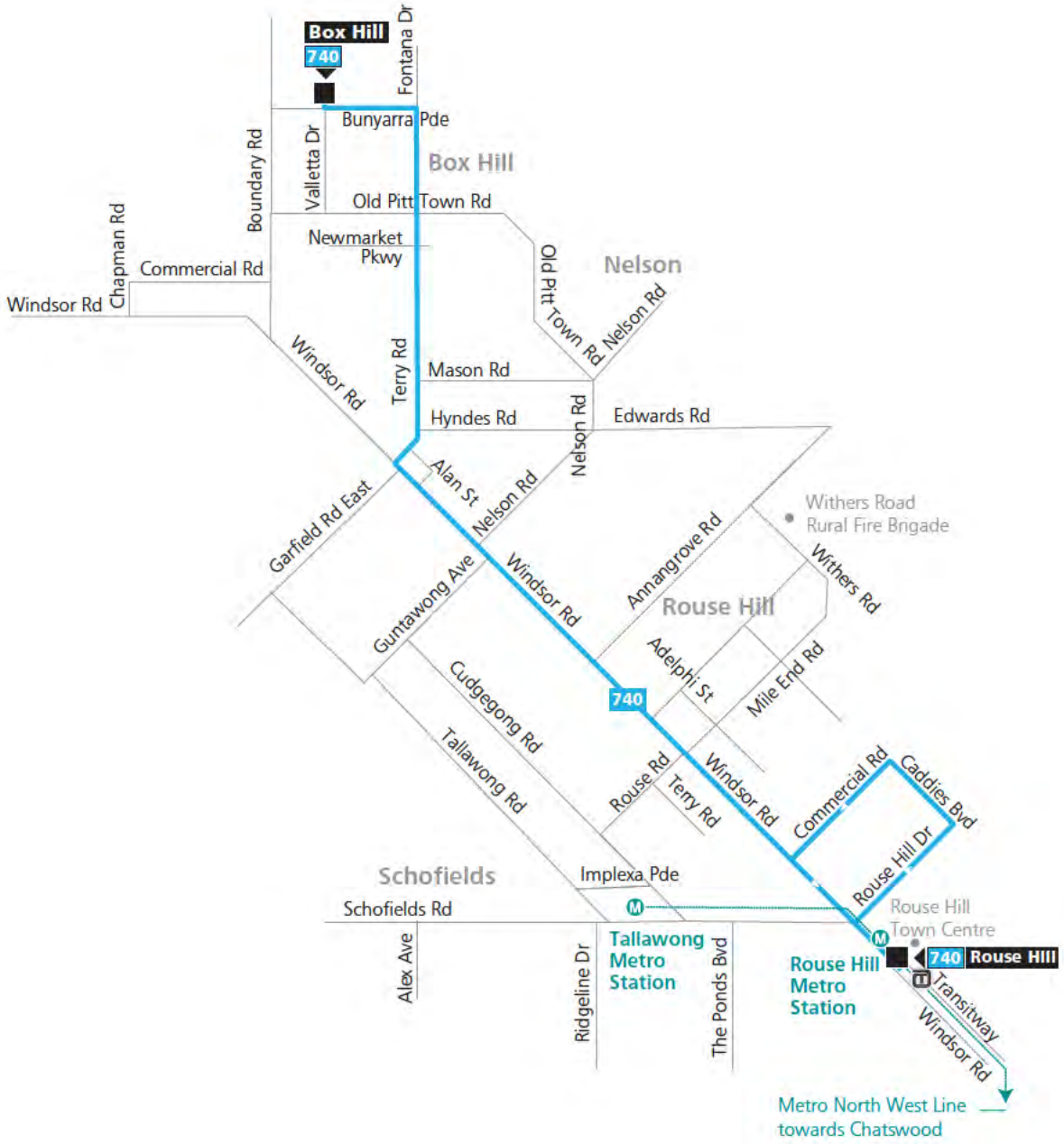
Saturday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Bunyarra Pd after Valletta Dr, Gables	06:07	07:07	08:05	09:05	10:05	11:05	12:05	13:05	14:05
63 Terry Rd, Box Hill	06:11	07:11	08:10	09:10	10:10	11:10	12:10	13:10	14:10
Terry Rd before Windsor Rd, Box Hill	06:16	07:16	08:15	09:15	10:15	11:15	12:15	13:15	14:15
Windsor Rd before Annangrove Rd, Rouse Hill	06:20	07:20	08:19	09:19	10:19	11:19	12:19	13:19	14:19
Rouse Hill Station	06:26	07:26	08:26	09:26	10:26	11:26	12:26	13:26	14:26

Saturday	♿	♿	♿	♿	♿	♿	♿	♿	♿
Bunyarra Pd after Valletta Dr, Gables	15:05	16:05	17:05	18:05	19:05	20:05	21:00	22:00	23:00
63 Terry Rd, Box Hill	15:10	16:10	17:10	18:10	19:09	20:09	21:04	22:04	23:04
Terry Rd before Windsor Rd, Box Hill	15:15	16:15	17:15	18:15	19:13	20:13	21:08	22:08	23:08
Windsor Rd before Annangrove Rd, Rouse Hill	15:19	16:19	17:19	18:19	19:17	20:17	21:12	22:12	23:12
Rouse Hill Station	15:26	16:26	17:26	18:26	19:23	20:23	21:18	22:18	23:18

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿	♿	♿
Bunyarra Pd after Valletta Dr, Gables	07:07	08:07	09:05	10:05	11:05	12:05	13:05	14:05	15:05
63 Terry Rd, Box Hill	07:11	08:11	09:10	10:10	11:10	12:10	13:10	14:10	15:10
Terry Rd before Windsor Rd, Box Hill	07:16	08:16	09:15	10:15	11:15	12:15	13:15	14:15	15:15
Windsor Rd before Annangrove Rd, Rouse Hill	07:20	08:20	09:19	10:19	11:19	12:19	13:19	14:19	15:19
Rouse Hill Station	07:26	08:26	09:26	10:26	11:26	12:26	13:26	14:26	15:26

Sunday & Public Holidays	♿	♿	♿	♿	♿	♿	♿
Bunyarra Pd after Valletta Dr, Gables	16:05	17:05	18:05	19:05	20:00	21:00	22:00
63 Terry Rd, Box Hill	16:10	17:10	18:10	19:09	20:04	21:04	22:04
Terry Rd before Windsor Rd, Box Hill	16:15	17:15	18:15	19:13	20:08	21:08	22:08
Windsor Rd before Annangrove Rd, Rouse Hill	16:19	17:19	18:19	19:17	20:12	21:12	22:12
Rouse Hill Station	16:26	17:26	18:26	19:23	20:18	21:18	22:18

Route 740



Legend

- Bus route
- 740 Bus route number
- Bus route start/finish
- Train line/station

North — Diagrammatic Map Not to Scale

NSW GOVERNMENT Transport

transportnsw.info

Proposed School Services for Santa Sophia Catholic College, Gables, NSW

Bell 08:10 and 14:30. Campus opens Term 4, 2021.

The orange circle is for 1.6 km straight line distance from school. The yellow circle is for 2.0 km straight line distance from school which indicates the walking catchment for various ages.

Rouse Hill Station EXPRESS to school:

AM:

Rouse Hill Station	07:29
Santa Sophia Catholic College	07:54

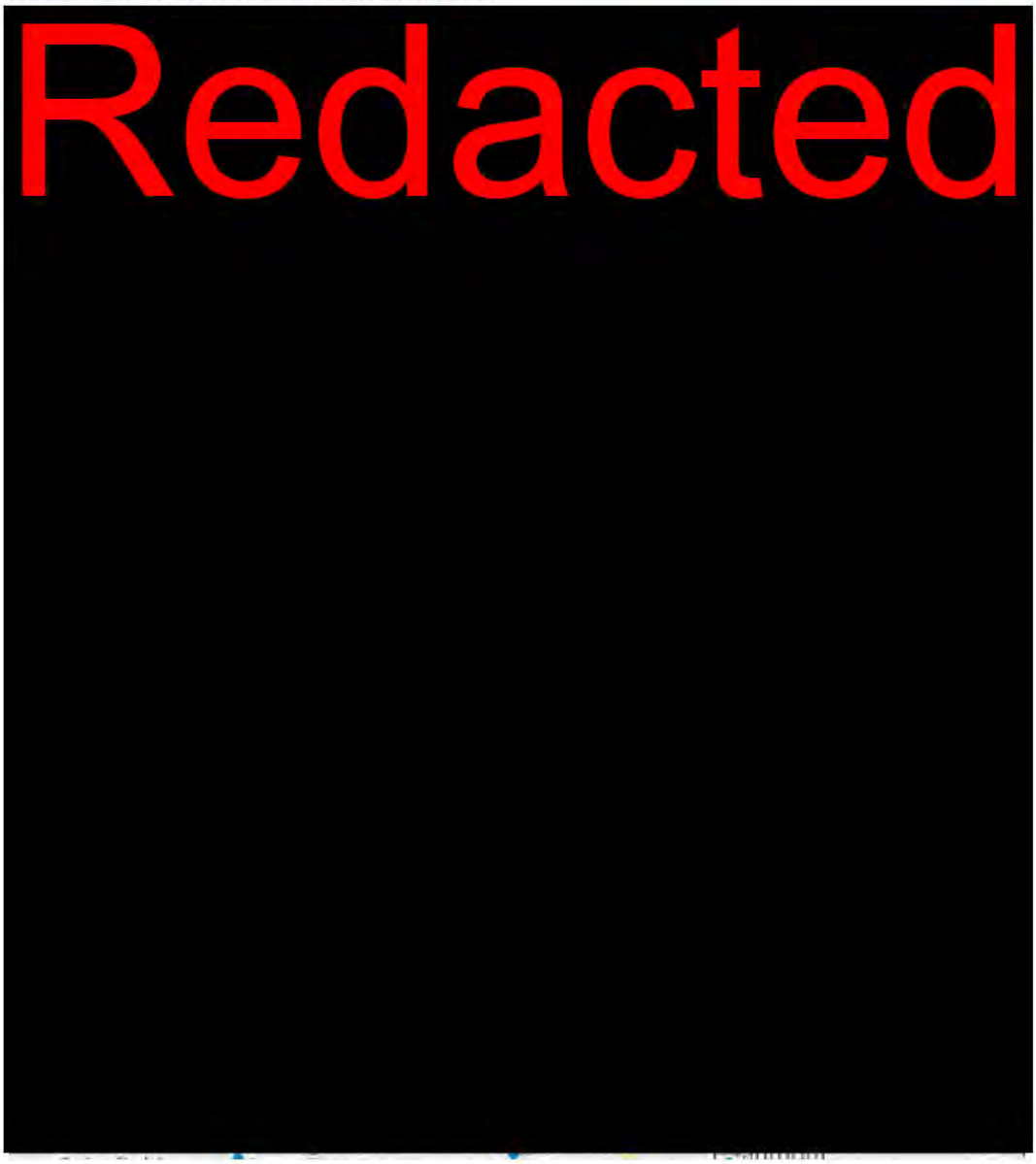
PM:

Santa Sophia Catholic College	14:35 arrival
Santa Sophia Catholic College	14:37 departure
Rouse Hill Station	15:02

Rouse to school via Mount Carmel Dr:

AM:		
Opp Rouse Hill Station	07:07	
Cataract Rd before Fontana Dr	07:40	
Santa Sophia Catholic College	07:45	Bell 0810
PM:		
Santa Sophia Catholic College	14:47	Bell 1430
Santa Sophia Catholic College	14:49	
Cataract Rd after Fontana Dr	14:54	
Rouse Hill Station	15:33	

Rouse Hill Station to school via Milford:



AM:

Rouse Hill Station	07:25
Santa Sophia Catholic College	08:00

PM:

Santa Sophia Catholic College	14:38
Santa Sophia Catholic College	14:40
Rouse Hill Station	15:18

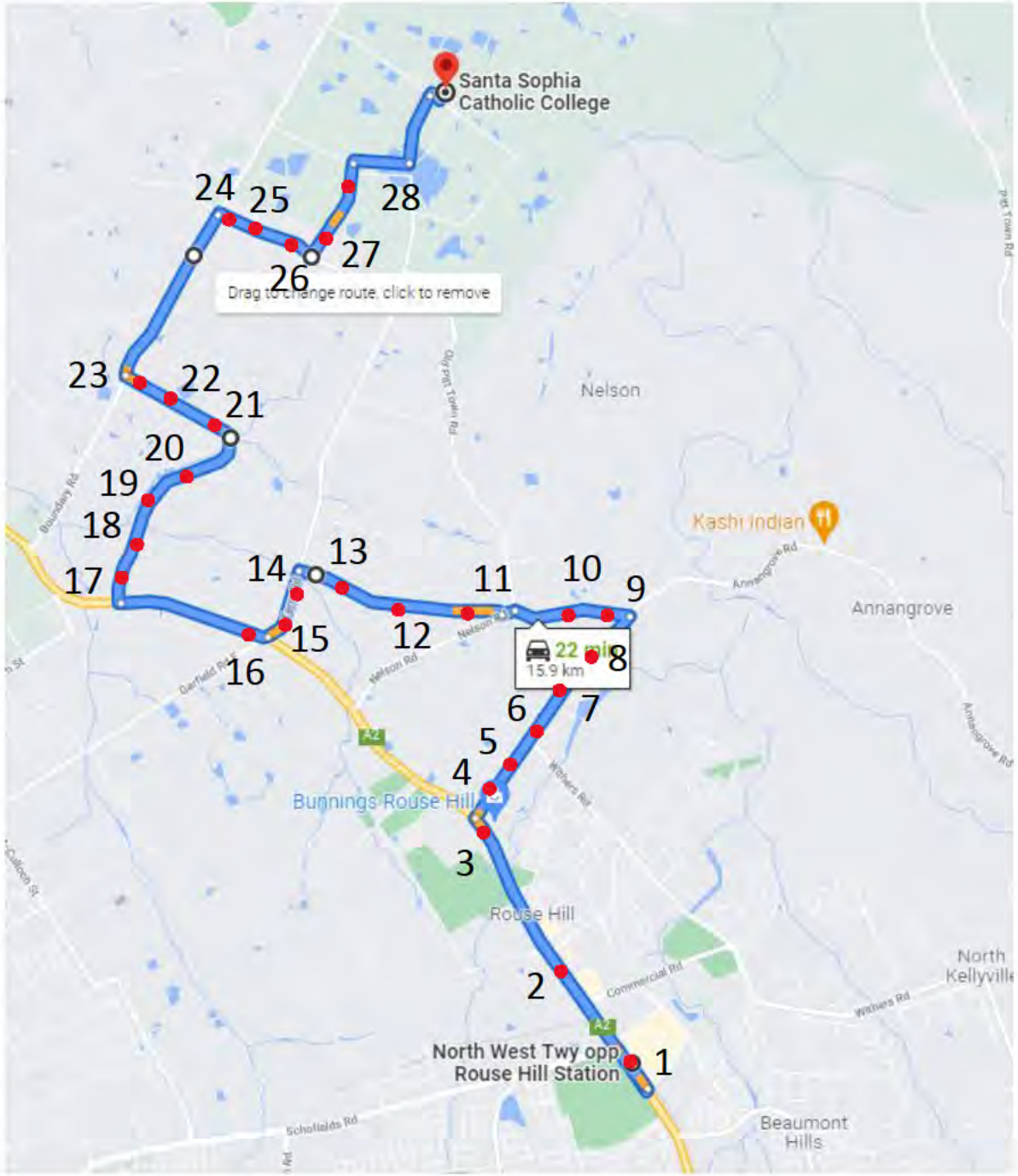
Clower Ave, Rouse Hill to school via Adelphi, Mason and George:

AM:

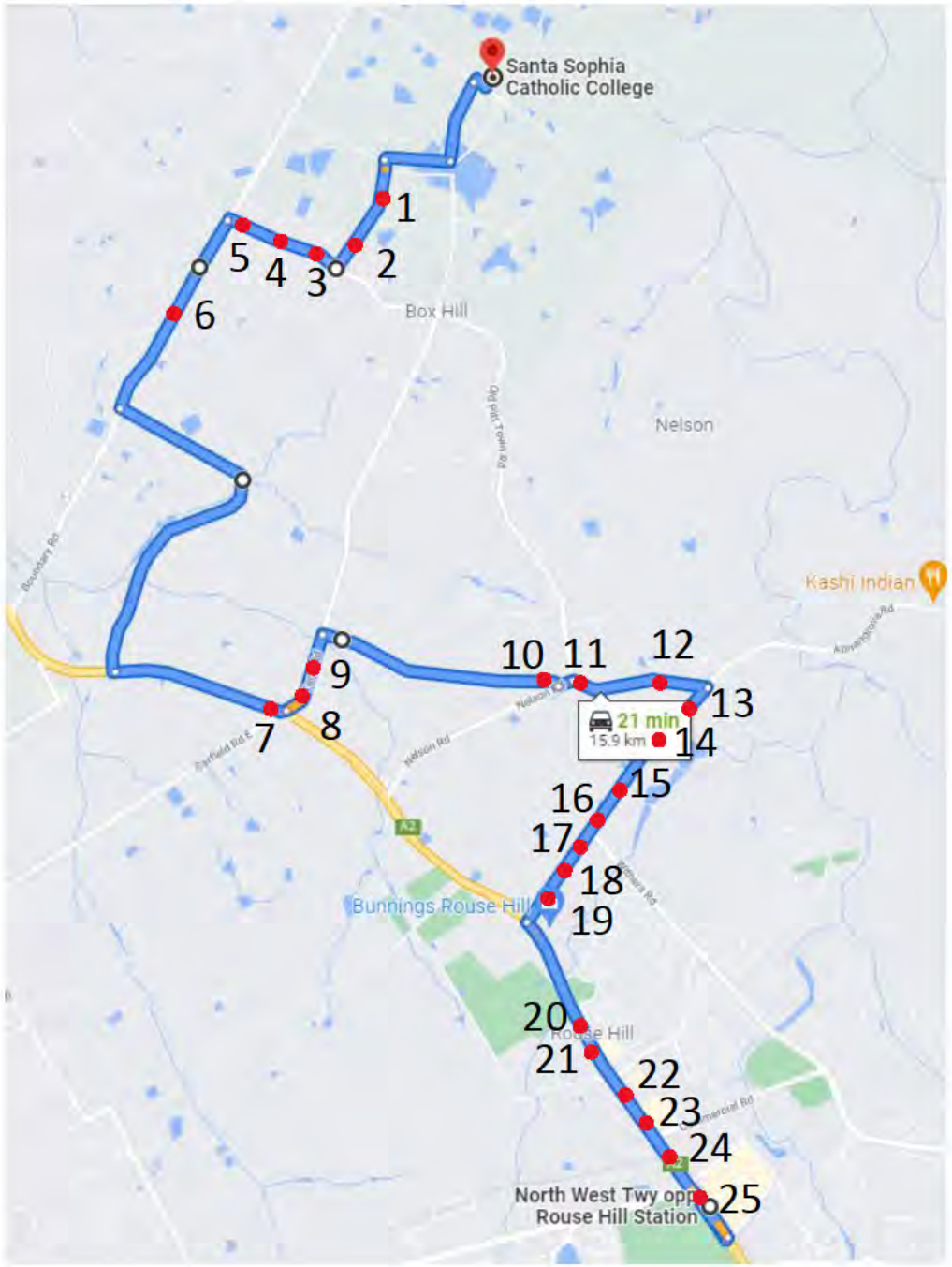
Clover Ave after Panmure St	07:25
Santa Sophia Catholic College	08:03

PM:

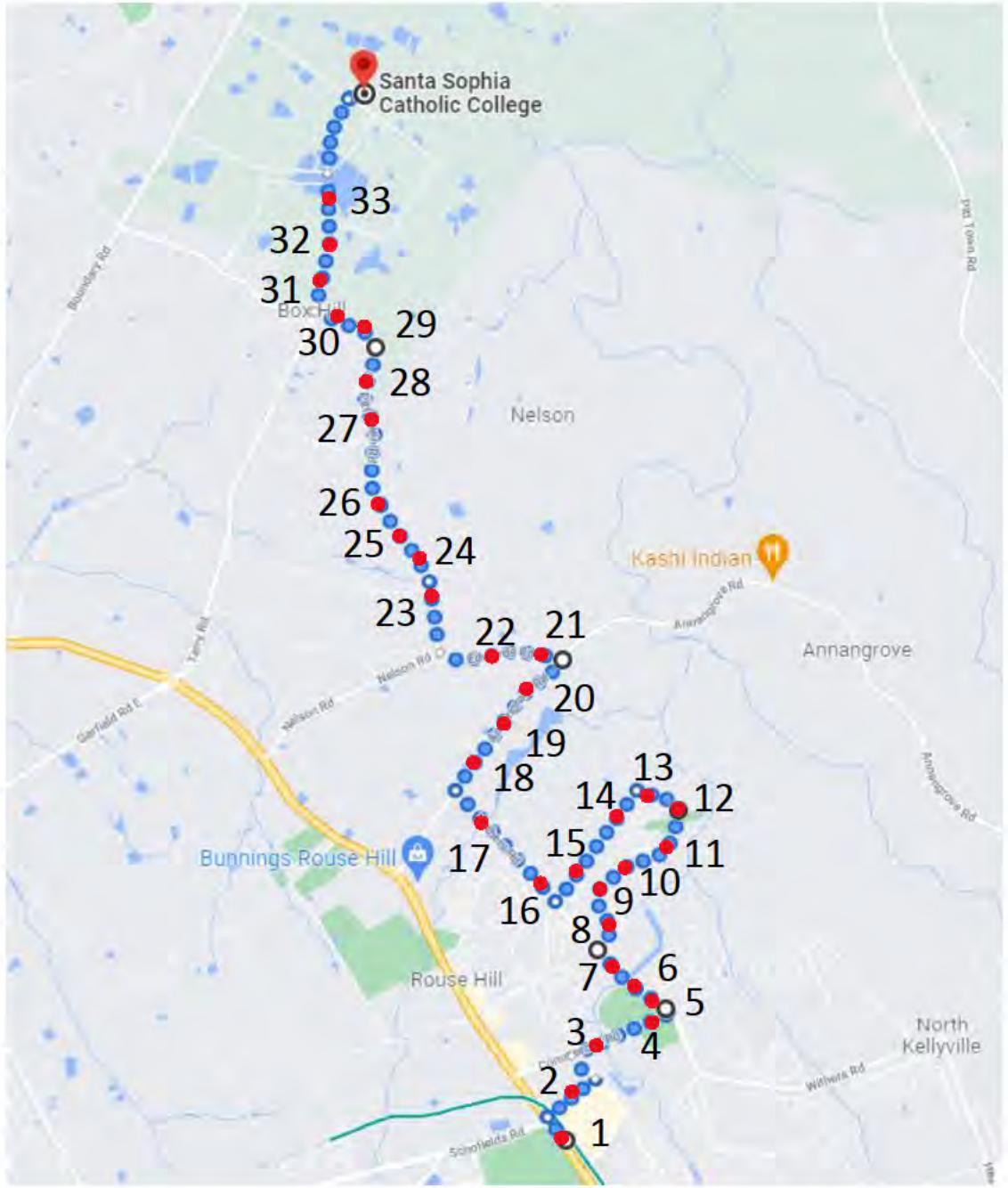
Santa Sophia Catholic College	14:40
Santa Sophia Catholic College	14:42
Clover Ave after Panmure St	15:20



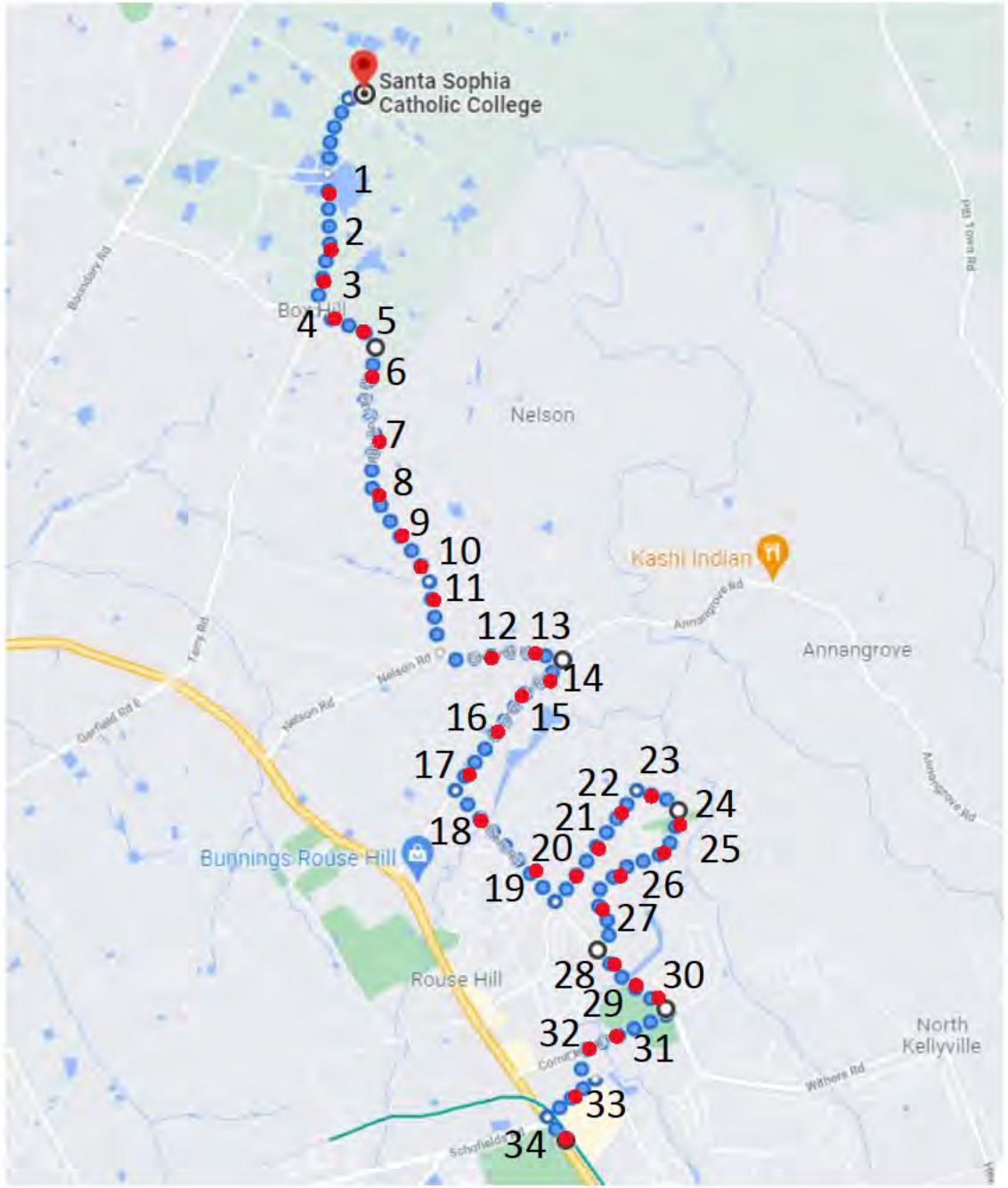
Bus Route Mt Carmel Drive AM		
Bus Stop Number	**Bus Stop Name**	**Bus Stop ID**
1	North West Twy opp Rouse Hill Station	2155458
2	Windsor Rd before Rouse Rd	215533
3	Windsor Rd before Annangrove Rd	215597
4	Annangrove Rd after Windsor Rd	2155427
5	Annangrove Rd opp 342	2155428
6	Annangrove Rd after The Water Lane	2155434
7	Annangrove Rd opp 324	2155420
8	269 Annangrove Rd	2155435
9	Edwards Rd after Annangrove Rd	2155424
10	Edwards Rd before Longmeadow Pkwy	276589
11	Hynds Rd opp 15	2765203
12	22 Hynds Rd	2765177
13	32 Hynds Rd	2765175
14	Terry Rd after Hynds Rd	2765160
15	Terry Rd before Windsor Rd	2765153
16	Windsor Rd after Garfield Rd	276567
17	Mount Carmel Dr after Windsor Rd	2765372
18	Lot 11 Mt Carmel Dr	2765390
19	Mt Carmel Dr opp Copenhagen St	2765392
20	Mt Carmel Dr opp Aaron St	2765385
21	Brahman Rd after Mt Carmel Dr	2765397
22	Brahman Rd after Letoken Way	2765382
23	Brahman Rd before Boundary Rd	2765396
24	Old Pitt Town Rd at Boundary Rd	2765189
25	99 Old Pitt Town Rd	2765235
26	105 Old Pitt Town Rd	2765234
27	Valletta Dr after Old Pitt Town Rd	2765348
28	Valletta Dr at Sundowner Pwy	2765350



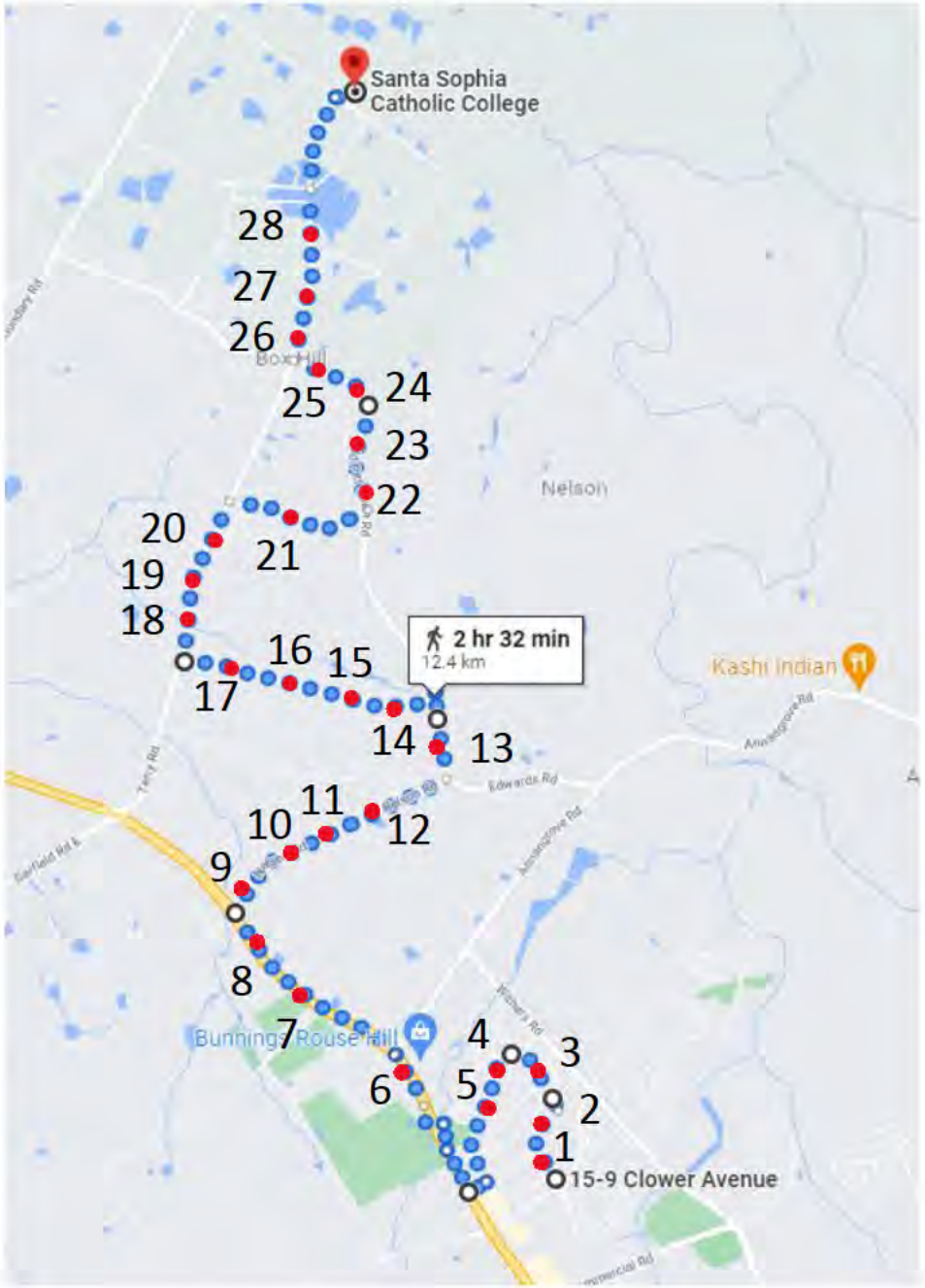
Bus Route Mt Carmel PM		
Bus Stop Number	**Bus Stop Name**	**Bus Stop ID**
1	Valletta Dr after Cavalo Wy	2765409
2	Valletta Dr after Triumph Rd	2765349
3	122 Old Pitt Town Rd	2765233
4	112 Old Pitt Town Rd	2765286
5	Old Pitt Town Rd before Boundary Rd	2765270
6	Boundary Rd opp Menin Rd (Hail & Ride)	276596
7	Windsor Rd before Terry Rd	276562
8	Terry Rd after Windsor Rd	2765152
9	Terry Rd after Alan Street	2765154
10	Hynds Rd at Nelson Rd	276590
11	Edwards Rd after Nelson Rd	276565
12	Edwards Rd after Hession Rd	276591
13	Annangrove Rd after Edwards Rd	2155422
14	316 Annangrove Rd	2155436
15	324 Annangrove Rd	2155421
16	Annangrove Rd at Withers Rd	215561
17	Annangrove Rd after Withers Rd	2155419
18	342 Annangrove Rd	2155433
19	Annangrove Rd before Windsor Rd	2155426
20	Windsor Rd before Aberdour Ave	2155354
21	Rouse Hill Shopping Centre, Windsor Rd	215512
22	Windsor Rd after Mile End Rd	215552
23	Windsor Rd before Commercial Rd	2155143
24	Windsor Rd after Commercial Rd	2155346
25	Rouse Hill Station, North West Twy	2155457



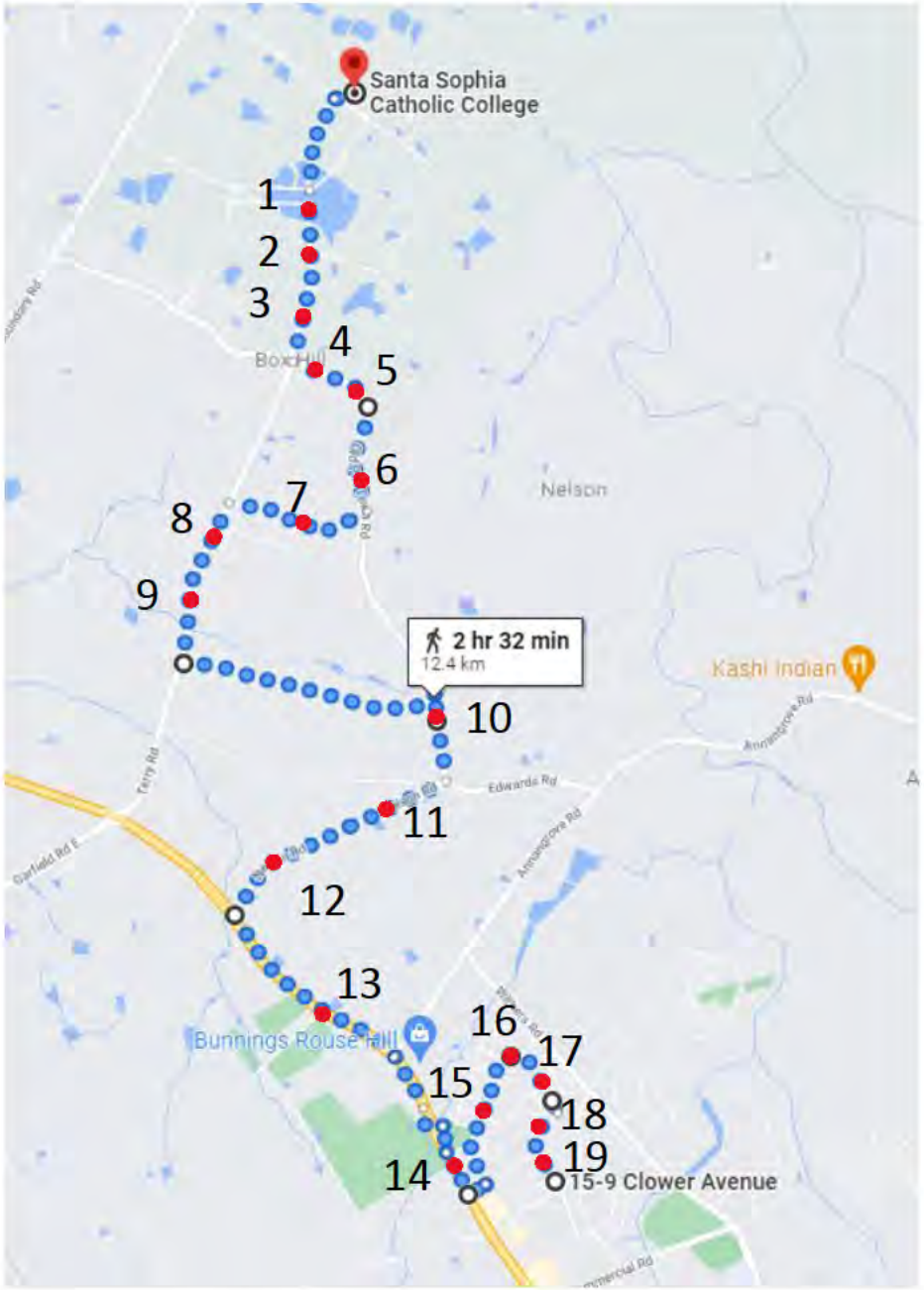
Bus Route via Milford AM		
Bus Stop Number	**Bus Stop Name**	**Bus Stop ID**
1	North West Twy opp Rouse Hill Station	2155458
2	Rouse Hill Dr after Civic Way	2155326
3	Commercial Rd at McCombe Ave	2155200
4	Commercial Rd before Withers Rd	2155201
5	Withers Rd after Commercial Rd	2155288
6	Hills Centenary Park, Withers Rd	2155203
7	Withers Rd at Brushwood Dr	2155204
8	Milford Dr after Withers Dr	215540
9	Milford Dr after Carmelita Cct	215541
10	Milford Dr after Weeroona Pl	215542
11	Milford Dr after Stanford Cct	215543
12	Milford Dr opp Chevron Pl	215544
13	Milford Dr before Mile End Rd	215545
14	85 Mile End Rd	215546
15	Mile End Rd opp Mile End Community Church	215547
16	Withers Rd after Mile End Rd	2155356
17	Withers Rd opp Rouse Hill Rural Fire Brigade	2155455
18	Annangrove Rd after The Water Lane	2155434
19	Annangrove Rd opp 324	2155420
20	269 Annangrove Rd	2155435
21	Edwards Rd after Annangrove Rd	2155424
22	Edwards Rd before Longmeadow Pkwy	276589
23	Nelson Rd opp McHale Way	2765369
24	Old Pitt Town Rd after Mason Rd	2765221
25	196 Old Pitt Town Rd	2765222
26	182 Old Pitt Town Rd	2765225
27	Old Pitt Town Rd after George St	2765227
28	162 Old Pitt Town Rd	2765228
29	152 Old Pitt Town Rd	2765230
30	Old Pitt Town Rd before Terry Rd (Hail & Ride)	2765127
31	Fontana Dr after Old Pitt Town Rd	2765358
32	Fontana Dr at Triumph Rd	2765357
33	Fontana Dr before Bunyarra Pde	2765355



Bus Route via Milford PM		
Bus Stop Number	**Bus Stop Name**	**Bus Stop ID**
1	Fontana Dr at Travertine Gr	2765354
2	Fontana Dr opp Triumph Rd	2765356
3	Fontana Dr before Old Pitt Town Rd	2765407
4	Old Pitt Town Rd after Fontana Dr	2765247
5	123 Old Pitt Town Rd	2765231
6	127 Old Pitt Town Rd	2765229
7	Old Pitt Town Rd opp George St	2765226
8	137 Old Pitt Town Rd	2765224
9	147 Old Pitt Town Rd	2765223
10	Old Pitt Town Rd before Nelson Rd (Hail & Ride)	2765347
11	Nelson Rd at McHale Way	276564
12	Edwards Rd after Nelson Rd	276565
13	Edwards Rd after Hession Rd	276591
14	Annangrove Rd after Edwards Rd	2155422
15	316 Annangrove Rd	2155436
16	324 Annangrove Rd	2155421
17	Annangrove Rd at Withers Rd	215561
18	Rouse Hill Rural Fire Brigade, Withers Rd	2155454
19	Withers Rd before Mile End Rd	2155451
20	Mile End Rd after Withers Rd	2155344
21	Mile End Community Church, Mile End Rd	2155186
22	Mile End Rd after Money Cl	2155187
23	Milford Dr after Mile End Rd	2155188
24	Milford Dr after Chevron Pl	2155189
25	Milford Dr opp Weeroona Pl	2155191
26	Milford Dr before Knox Pl	2155349
27	Milford Dr before Withers Rd	2155257
28	Withers Rd after Milford Dr	2155193
29	Withers Rd opp Hills Centenary Park	2155194
30	Withers Rd at Bentley Ave	2155258
31	Commercial Rd after Withers Rd	2155196
32	Commercial Rd at Caddies Bvd	2155197
33	Rouse Hill Dr at Civic Way	2155327
34	Rouse Hill Station, North West Twy	2155457



Clower Ave, Rouse Hill to school via Adelphi, Mason and George AM		
Bus Stop Number	**Bus Stop Name**	**Bus Stop ID**
1	Clower Ave after Panmure St	2155361
2	Clower Ave opp Rouse Hill Public School	215536
3	Adelphi St at Greygum Ave	2155135
4	Adelphi St opp Mailey Cct	2155136
5	Adelphi St after Grimmett Ave	2155207
6	Windsor Rd before Annangrove Rd	215597
7	Windsor Rd at Guntawong Rd	276566
8	Windsor Rd before Burns Rd	2765278
9	Nelson Rd after Windsor Rd	2765413
10	Nelson Rd opp Flower St	2765147
11	Nelson Rd opp Box Rd	2765148
12	Nelson Rd opp The Water Lane	2765150
13	Nelson Rd opp McHale Way	2765369
14	Mason Rd after Nelson Rd	2765215
15	37 Mason Rd	2765212
16	27 Mason Rd	2765211
17	Mason Rd before Terry Rd	2765208
18	40 Terry Rd	2765162
19	48 Terry Rd	2765163
20	Terry Rd opp George St	2765165
21	58 George St	2765288
22	Old Pitt Town Rd after George St	2765227
23	162 Old Pitt Town Rd	2765228
24	152 Old Pitt Town Rd	2765230
25	Old Pitt Town Rd before Terry Rd (Hail & Ride)	2765127
26	Fontana Dr after Old Pitt Town Rd	2765358
27	Fontana Dr at Triumph Rd	2765357
28	Fontana Dr before Bunyarra Pde	2765355



Clower Ave, Rouse Hill to school via Adelphi, Mason and George PM		
Bus Stop Number	**Bus Stop Name**	**Bus Stop ID**
1	Fontana Dr at Travertine Gr	2765354
2	Fontana Dr opp Triumph Rd	2765356
3	Fontana Dr before Old Pitt Town Rd	2765407
4	Old Pitt Town Rd after Fontana Dr	2765247
5	123 Old Pitt Town Rd	2765231
6	127 Old Pitt Town Rd	2765229
7	George St at Corvus Way	2765287
8	43 Terry Rd	2765164
9	Terry Rd before Mason Rd	2765161
10	Nelson Rd at McHale Way	276564
11	Nelson Rd after The Water Lane	2765151
12	Nelson Rd after Windsor Rd	2765159
13	Windsor Rd before Annangrove Rd	2155357
14	Windsor Rd before Aberdour Ave	2155354
15	Adelphi St after Noble Way	215598
16	Adelphi St at Mackay Way	215599
17	Adelphi St after Yellowgum Ave	2155100
18	Rouse Hill Public School, Clower Ave	215549
19	Clower Ave opp Panmure St	2155293

Appendix E

Operational Waste Management Plan

Santa Sophia Catholic College – Operational Waste Management Plan

A Submission to Catholic Education Diocese of Parramatta c/o TSA

19th May 2021

MRA Consulting Group

Santa Sophia Catholic College: Operational Waste Management Plan

A Submission to Catholic Education Diocese of Parramatta c/o TSA Management

Prepared by

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Version History

Ver	Date	Status	Author	Approver	Signature
0.1	01/04/2021	Draft	Shema Thadathil	James Cosgrove	-
0.2	08/04/2021	Review	James Cosgrove	Maya Deacock	-
1	19/05/2021	Final	Shema Thadathil	Maya Deacock	

Disclaimer

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Glossary

Terminology	Definition
AS	Australian Standard
C&D	Construction and Demolition
C&I	Commercial and Industrial
CELC	Catholic Early Learning Centre
HDCP	The Hills Development Control Plan
HLEP	The Hills Local Environmental Plan
HSC	The Hills Shire Council
DA	Development Application
DCP	Development Control Plan
EFSG	Educational Facilities Standards and Guidelines
EPA	Environment Protection Authority
LGA	Local Government Area
MGB	Mobile Garbage Bin
OWMP	Operational Waste Management Plan
SEPP	State Environmental Planning Policy
SSCC	Santa Sophia Catholic College
WARR	Waste Avoidance and Resource Recovery
WSP	Waste Service Provider
WSRA	Waste Storage and Recycling Area

1 Introduction

MRA Consulting Group (MRA) was engaged by TSA to prepare an Operational Waste Management Plan (OWMP) for the proposed construction and operation of the new Santa Sophia Catholic College (SSCC), located at 10 Red Gables Road, Box Hill, NSW 2765.

This OWMP has been prepared in accordance with the Education Facilities Standards and Guidelines (EFSG). The EFSG are standards and guidelines established by the NSW Department of Education in 2014, intended to assist those responsible for the management, planning, design, construction and maintenance of new and refurbished school facilities.

Prior to the development of this Operational Waste Management Plan, as a part of the EIS for the site development, a Waste Management Plan was developed by SUEZ in April 2019, including the management of different waste streams as a part of the school' operational activities.

This OWMP has been guided by the requirements of the Consent Authority (*Independent Planning Commission*), under Clause E40: Operational Waste Management Plan for the site development via Modified Consent Application No. SSD 9772.

The OWMP conforms with the requirements of the requirements of Schedule 2 in the State Environmental Planning Policy (SEPP) (*Educational Establishments and Childcare Facilities*) 2017 and NSW state guidelines (EPA), conforming to the following reference documents and policies:

- *The Hills Local Environmental Plan (HLEP) 2019;*
- *The Hills Development Control Plan (HDCP) 2012, amended in 2018;*
- *Protection of the Environment Operations Act 1997;*
- *Protection of the Environment Operations (Waste) Regulation 2014;*
- *Waste Classification Guidelines 2009;*
- *Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities; and*
- *Better Practice Guide for Resource Recovery in Residential Developments (NSW EPA, 2019).*

The following key objectives for waste management are outlined in the HDCP for new developments:

- To minimise the overall environmental impacts of waste.
- To maximise, through design, the opportunities to deal with commercial waste according to the waste hierarchy as given in Council's ESD Objective 6 – reduce, reuse and recycle.
- To reduce the demand for waste disposal by providing detailed criteria for the consideration of design and management of recycling, composting and waste storage and collection facilities within developments.
- To provide commercial waste management systems that allow for ease of use by occupants; and ease of service by collection contractors.
- To encourage building designs and construction techniques that will minimise waste generation.
- To assist in achieving Federal and State Government waste minimisation targets.
- To promote development design that is appropriate and provides convenient waste storage, recycling and collection facilities on site.

This OWMP has been prepared to inform the development design and assist in the delivery of better practice waste management, promoting sustainable outcomes during the operational phases for the development. The OWMP addresses waste generation and storage associated to the ongoing occupation of the proposed development.

2 Background

2.1 Description of Proposed Development

In total, the site covers approximately 1.14 ha of land, and is currently under construction for the development of the Santa Sophia school which comprises of:

- Construction of a new four – six storey school with 15,087m^2 of gross floor area, accommodating:
  - A centre-based childcare facility for the establishment of a Catholic Early Learning Centre (CELC) for 60 students; and
  - General learning spaces, creative hub, performance hubs, open space, sporting facilities and out-of-school hours (OOSH) care for a maximum 1,860 Kindergarten to Year 12 students.
- Associated site landscaping and open space, including fencing and recreation facilities.

Santa Sophia Catholic College is an educational establishment and is situated primarily within B2 – Local Centre and in R1 – General Residential.

The site maintains street frontages on Red Gables Road and is primarily accessed via the main entrance via the Red Gables Road itself.

2.2 Location

The development proposed for Santa Sophia Catholic College (SSCC), located at Red Gables Road is defined as Lot 1 DP 1237552 in the Hills Local Environmental Plan (HLEP) 2019.

Figure 1 below depicts the location of the site in relation to the surrounding land uses and roadways.

Figure 1: Location of the site and surrounds

Source: Nearmap, 2021

2.3 Zoning and Use

The site is zoned as B2 - Local Centre in the Hills Local Environmental Plan (HLEP) 2019, which is defined by the following objectives:

- To provide a range of retail, business, entertainment and community uses that serve the needs of people who live in, work in and visit the local area.
- To encourage employment opportunities in accessible locations.
- To maximise public transport patronage and encourage walking and cycling

Zones surrounding the site include R1 - General Residential and RE1 - Public Recreation.

2.4 Assumptions

This report is an OWMP, forming part of the development documentation and assumes:

- Drawings and information that have been used in waste management planning for this OWMP are the final reference/indicative design set for the development plan from the project architect, TSA (2nd October 2020);
- The Hills Development Control Plan (HDCP) 2012, amended in 2018 outlines waste generation rates and services available for new developments which have been considered in the preparation of this report; and
- This OWMP is a living document and therefore, waste management equipment and systems described in this report are subject to change based on future operations and available technology.

3 Use & Ongoing Waste Management

Waste management strategies related to site operations have been established according to the documents outlined in the HDCP. Ongoing waste management practices onsite will aim to contribute towards the NSW Waste Avoidance and Resource Recovery (WARR) Strategy target recycling rate of 70% for commercial and industrial waste, by 2021-22.

Site waste management responsibilities have been outlined in Section 4.3.

Additional bin infrastructure will be maintained at the site to manage waste associated with the ground floor ancillary services and common use areas.

School cleaning and maintenance staff will maintain waste storage and management areas located on the ground level.

The following spatial calculations are based on mobile garbage bin (MGB) and bulk bin dimensions sourced from NSW EPA's *Better Practice Guide for Resource Recovery in Residential Developments* (2019) (Table 1).

Table 1: MGB capacity and footprint

Bin Capacity (L)	Height (mm)	Depth (mm)	Width (mm)	Footprint (Approx. m^2)
240	1,180	740	570	0.50
660	1,250	850	1,370	1.46
1,100	1,470	1,245	1,370	2.51

Source: Better practice guide for resource recovery in residential developments (2019).

3.1 Waste Management Strategies

The newly constructed school will accommodate 1,920 students and 130 staff. It is understood that initially, enrolments will be limited to approximately 500 students and will scale up over two to three years to full capacity. Accordingly, waste management strategies and servicing requirements for the school will adapt to the number of student enrolments. The calculations and strategies below assume full student occupation of the school.

3.1.1 Waste Streams

The HDCP does not provide specific waste generation rates for schools. MRA has prior experience with typical waste generation rates expected from schools of similar scale, and proposes the following rates for SSCC (based on operation 5 days per week):

Table 2: Waste Generation for the site

Location	Waste Stream	Generation Rate	Weekly Generation Rates (L)
School (1,860 students)	**General Waste**	7.5L per student per week*	13,950
	Paper and Cardboard	0.5L per student per week*	930
CELC	**General Waste**	20L per child per week	1,200

(60 children)	**Paper and Cardboard**	5L per child per week	300

**Randwick DCP, school waste generation rates.*

In total, the site is expected to generate the following volumes per week:

- General Waste: 15,150L
- Paper and Cardboard: 1,230L

General waste and recycling streams will be stored in bulk mobile garbage bins (MGBs) for collection by a waste service provider (WSP). Waste storage and servicing arrangements for general waste and recycling streams are outlined further in Sections 3.1.2 to 3.1.4.

3.1.2 Temporary Waste Storage and Transfer

To facilitate waste disposal and separation, bins are stationed across the site, and their contents collected daily by cleaners. Cleaners will deposit the collected waste into respective bins in the waste storage area adjacent to the CELC carpark. Maintenance and grounds staff will use the primary waste bins directly.

3.1.3 Bin Size and Location

The following bin requirements are based on the size available for bin storage and assumes a collection rate of five times a week for general waste and once per week for paper and cardboard.

Table 3: Site Bin Requirements

Waste Stream	Weekly Waste Generated (L)	Bin Size (L)	Number of Bins
General Waste	15,150	1,100L	3
Paper and Cardboard	1,230	660L	2

1,100L bins have been elected for management of general waste at the site. Smaller 660L mobile bins will be used for the management of paper and cardboard at the site.

As the waste storage room is adjacent to the waste collection vehicle loading area, the labour requirements for bin transfer are low. Bins are to be designed to AS 4123.7 Mobile Waste Containers and will be affixed with the correct lid colour and bin signage in accordance with its contents.

3.1.4 Bin Storage Area

The site has allocated an area of approximately 40m^2 for the storage of waste bins in accordance with the Council's recommendations as per Clause B7 of the modified consolidated consent for the site development. Based on the number and type of bins described in Section 3.1.3, there would be sufficient space for required bin infrastructure in the waste storage area of the site.

Table 4: Site Bin Area Footprint

Equipment	Space Required (m^2)	Total recommended area with handling space in m^2
General Waste (3 x 1,100L)	8	16
Paper and Cardboard (2 x 660L)	3	

The proposed waste storage area is depicted in site plans (Appendix A):

3.2 Other Waste Streams

3.2.1.1 Additional Waste Streams

The NSW Department of Education has released an Education Facilities Standards and Guidelines (EFSG) which provide assistance to those planning, managing, designing, constructing, and maintaining new and refurbished school facilities. The EFSG provides a best-practice standard for waste management and guides the preparation and implementation of this Operational Waste Management Plan.

The EFSG provides a minimum for waste streams for onsite source separation.

Waste streams to be serviced include:

- General Waste (red lid);
- Commingled Containers (yellow lid);
- Food and Garden Organics (FOGO) (lime green lid);
- Paper and Cardboard (blue lid);
- Container Deposit Scheme (CDS) materials (white lid); and
- Soft Plastics (any colour lid not listed above).

It is noted that the EFSG is a best-practice guideline and not a requirement for schools in NSW. SSCC can initially opt for a two-bin system (being general waste and commingled recycling) and over time introduce greater separation of waste streams (paper and cardboard, FOGO, soft plastics, and CDS-eligible containers).

3.2.1.2 Problem Wastes

SSCC will engage with problem waste management contractors where possible to recover wastes such as E-waste, printer cartridges, batteries, furniture, etc.

SSCC will incorporate a range of different problem waste management practices including any of the following:

- Document Destruction Waste – Two 240L lockable MGBs will be provided for collection and destruction of confidential paper and media materials, on a monthly basis. This would include business records, personnel records, medical/health records, contracts and tenders, office files, archive files, video tapes, CDs, DVDs and microfiche;
- Batteries and Printer Cartridges – A company called “Close the Loop” (among others) provides bins and collection for batteries and printer cartridges. Bins are collected on an as needed basis, at the request of the user, when the provided bins become full. Bins for this purpose can be retained in the main photocopy room, administrative office or computer labs;
- E-Waste – A waste or specialist E-waste management contractor may be engaged to provide bins for the collection on E-waste generated at SSCC. E-waste bins can be serviced on a regular basis or as needed when bins become full, by the engaged contractor;
- Light Globes and Fluorescent Tubes –Light globes and fluorescent tubes are typically managed by the electrical contractor, with old and damaged units being taken away upon their replacement;
- Bulky Waste (Furniture) – Unwanted furniture can be stored onsite and collected on a regular basis or as required; and
- Clinical/Sanitary Waste – Sanitary (including clinical waste where applicable) waste handled by trained (or qualified) personnel using appropriate personal protective equipment and stored in dedicated bins and containers for collection by an appropriate qualified and licensed service provider for transport to a facility appropriate for the purpose of disposing of that waste. Clinical waste containers may be stored in the school sick bay for collection as required.

3.2.1.3 Food Waste

Food waste will be generated around kitchen and canteen areas, as well as by students and staff. Food waste can be managed with a separate food bin and collection service provided by the contracted waste service provider. Alternatively, should there be space available on school grounds in a veggie patch or garden, a small compost heap may also be suitable for the management of small amounts of vegetable and other food scraps for use around the site. Should onsite composting be unsuitable due to space restrictions, all food waste may be managed with separate bins to be collected by the WSP.

3.2.1.4 CDS Containers and Soft Plastics

It is difficult to predict the generation of soft plastics and CDS-eligible containers, but a bin will be provided for each stream to be managed on an as needs basis. Due to low expected volumes of each stream, site management will be responsible for transfer of CDS materials to a Return and Earn depot, and soft plastics to a RedCycle collection point.

The closest REDcycle collection points to the site are:

- Woolworths Schofields - Railway Terrace and Pelican Roads, Schofields NSW 2762;
- Woolworths Rouse Hill - 10-14 Market Lane, Rouse Hill NSW 2155.

The closest Return and Earn collection points to the site are:

- Woolworths Home Co Rouse Hill: 4 - 6 Commercial Road (Reverse Vending Machine);
- Woolworths North Kellyville: 46 Withers Road (Reverse Vending Machine);
- Khan's General Store: 95 Pitt Town Road (Over the Counter).

SSCC may like to install a Reverse Vending Machine (RVM) to allow students to directly deposit eligible containers. The school can decide whether students directly receive the refund vouchers or can choose to have the refund amount donated to the school for fund raising or an elected charity.

SSCC may also apply for listing on local RVM donation registry to enable people to donate CDS revenue to the school from central collection locations.

3.2.1.5 Waste Avoidance

Employing purchasing strategies to avoid the generation of waste: purchasing products with recyclable, compostable, minimal, or no packaging.

3.2.1.6 Reuse of Materials

Where possible, reusing drums, cartridges, and containers where possible. Donating of materials where feasible.

4 Equipment and Waste Management Systems

4.1 Collection Method and Loading Areas

4.1.1.1 Collection arrangement

Waste collection will occur onsite, adjacent to the bin storage room (refer to Appendix A, Figure 3). Collection will be conducted by a private waste contractor, utilising a standard HRV rear-loading waste collection vehicle. The collection vehicle will enter and exit the site in a forward-facing direction and may either reverse or forward into the waste loading area. There are no overhead obstacles in this area and will have sufficient space for a rear-lift mechanism.

The CELC operates between 6am to 6:30pm, five days per week. To avoid traffic conflicts between passenger vehicles and the private waste contractor vehicles, waste will only be collected outside of these hours.

Swept path diagrams for vehicle access and turning are available in Appendix C. Site management will schedule collection for times that the CELC parking area is devoid of any other vehicles, to allow the waste truck to complete manoeuvring and collection.

Waste collection for the site, including the collection point for the waste contractor and areas for handling and loading are as follows:

- Cleaning staff will be responsible for bin set out and return of bins to the bin storage area as soon as practicable following collection.
- Collection is to only occur after school hours to minimise risk to students and staff while the waste vehicle manoeuvres into the loading area;
- Waste trucks will access the site from the vehicle entry at Red Gables Road;
- The waste collection vehicle will collect waste from a loading area adjacent to the bin storage area;
- Clear, safe, accessible, and convenient space for handling of MGBs and equipment and loading of collection vehicles;
- Facilitation of waste collection will be through the site cleaning staff who will be responsible for transfer of bins between the storage area and the kerb; and
- Identifiable areas where students, visitors and site staff can recognise and avoid any risk associated with moving vehicles, and bin moving and handling.

SSCC will engage with a listed supplier of Contract 9698 for waste management at the School.

4.1.1.2 Collection Schedule

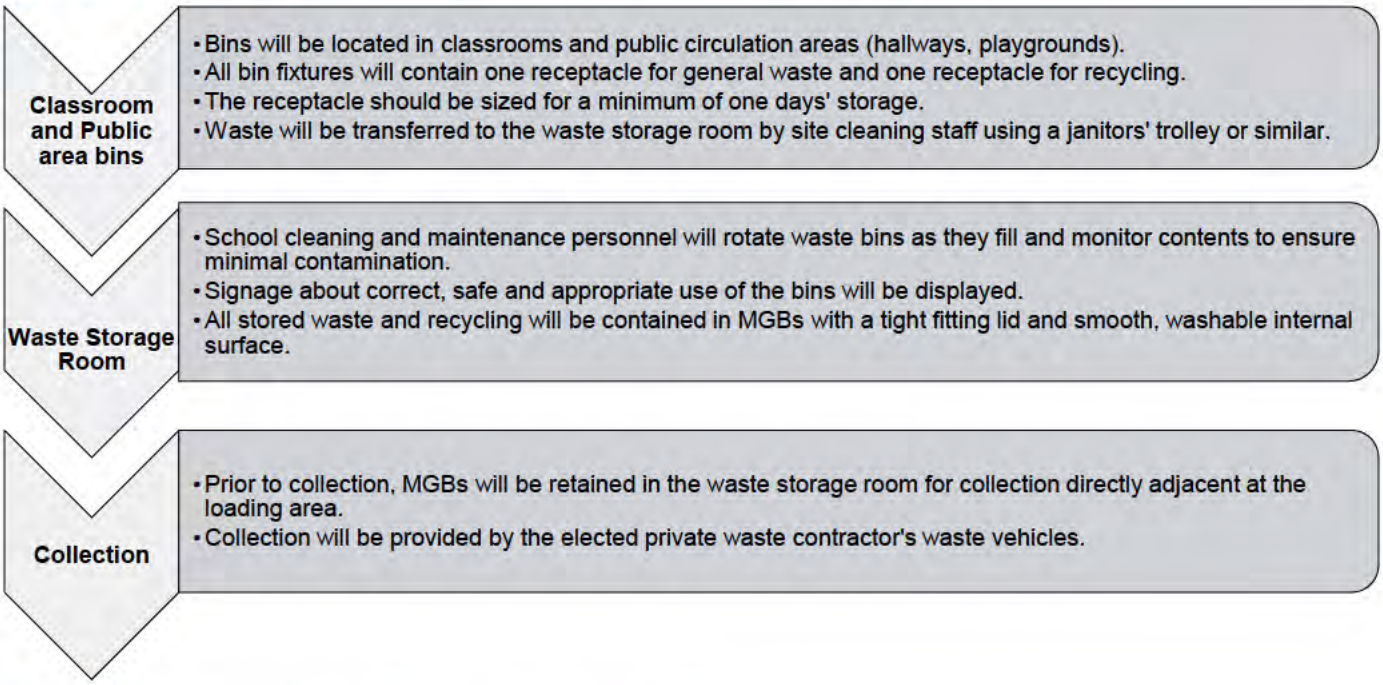
The following collection schedules are proposed for the various waste streams at the site:

- 3 x 1,100L general waste bins will be collected five days per week.
- 2 x 1660L paper and cardboard bins will be collected once per week.
- Other waste streams may be collected irregularly or less frequently than once per week, depending on specific needs (see Section 3.2.1.2).
- 2 x 240L confidential paper waste bins will be collected once a month, screened for contaminants, shredded and baled before it is sent for reprocessing.

4.2 Waste Disposal and Recycling Method

The flow of waste goes from generation to collection through several steps (Figure 2).

Figure 2: Waste Flow



4.3 Management System and Responsibilities

School cleaning staff will be responsible for the management of waste at the site. Should there be any issues that impact on the operational efficiency, safety and suitability of waste management, school cleaning staff will inform the school operations manager and/or principal. Operation of the waste management system is the responsibility of school management and cleaning personnel. Responsibilities include:

- Using this OWMP to inform waste management operations, design and infrastructure;
- Providing educational materials and information on sorting methods for recycled waste, awareness of waste management procedures for waste minimisation and resource recovery;
- Maintaining a valid and current contract with a licensed waste service provider for waste and recycling collection and disposal;
- Making information available to students, visitors and site staff about waste management procedures;
- Collection of waste from ground floor ancillary services in a mobile waste management/janitor trolley, for direct disposal into designated bins retained in the waste storage area;
- Manoeuvring bins to specified onsite collection point prior to and following scheduled collection of waste bins;
- Organising, maintaining and cleaning waste management areas as part of a regular maintenance schedule (every 3-6 months);
- Maintenance of equipment and infrastructure for waste where possible (within the means of staff);
- Organising the relevant waste contractor for additional maintenance or waste management for the site (including bulky waste);
- Ensuring bin allocation and waste/recycling collection frequency is adequate. Requesting additional infrastructure or services where necessary; and
- Monitoring any vermin and pest issues and arranging appropriate controls (traps or fumigating) and maintenance of doors or other points of potential entry.

4.4 Waste Storage and Recycling Area Specifications

The waste storage area will provide centralised storage that has adequate capacity to receive and store the maximum likely generation of waste and recycling between collection times. The waste storage area will be constructed to improve amenity, minimise odour, protect surrounding areas and promote user safety. Specifications include:

- The floor being graded and drained to an approved drainage outlet connected to the sewer and having a smooth, even surface, coved at all intersections with walls;
- The walls being cement rendered to a smooth, even surface and coved at all intersections;
- Cold water being provided in the room with the outlet located in a position so that it cannot be damaged, and a hose fitted with a nozzle being connected to the outlet;
- An overhead type door being provided to the room having a clear opening of not less than 1.8m;
- A galvanised steel bump rail at least 50mm clear of the wall being provided at the height of the most prominent part of the garbage containers;
- Construction to conform to the Building Code of Australian Standards and local laws;
- Waste room floor to be constructed of reinforced concrete at least 75mm thick and sealed with a two-pack epoxy;
- Wastewater discharge from bin washing must be drained to sewer in accordance with Sydney Water.
- Signage for safety and waste bin identification;
- Safety precautions, staff training and signage for plant;
- Noise attenuation for waste management and waste storage area that limits effects to students and staff from bin transfer and collection vehicle noise;
- Grading and draining to an approved drainage fitting located in the room;
- A smooth, even floor surface covered with vertical wall and plinth faces;
- Doorway ramp (if not level);
- Light colour finish for all room surfaces;
- Close-fitting and self-closing door, large enough to facilitate access of 1,100L bins and bulky waste items;
- Suitable construction including limited entry paths to prevent vermin;
- Ventilation through permanent unobstructed ventilation (5% of floor area) or mechanical exhaust ventilation system (5L/s per m^2 of floor area); and
- Security and lighting.

4.5 Bulky Waste Storage

Some bulky wastes will be generated because of typical school activities. Sufficient space will be provided for the temporary storage of these wastes prior to scheduled collection. Management and access of the bulky storage area will be the responsibility of school management and cleaning personnel.

4.6 Signage and Education

Signage that promotes resource recovery, waste minimisation, safety and amenity follows the Australian Standard for safety signs for the occupational environment (Standards Australia 1994, Figure 2 and 3).

Signage is designed to consider language and accessibility (i.e. to be understood as clearly as possible by those with different abilities of vision, knowledge of the English language, intellectual ability and with other conditions). Signage is to be prominently posted in each waste storage area and relevant waste service area indicating:

- Detail on acceptable recyclables;
- Recyclables are to be decanted loose (not bagged);
- No standing and danger warnings apply to the area surrounding the waste storage area;
- Contact details for arranging the disposal of bulky items; and

- The area is to be kept tidy.

Standard signage requirements and guidance for application apply (see Appendix B, Figure 6 and Figure 7).

4.7 Prevention of Pollution, Illegal Dumping and Litter Reduction

To minimise dispersion of litter and prevent pollution (to water and land via contamination of runoff, dust and hazardous materials), site management will also be responsible for:

- Maintenance of communal areas and the waste storage area;
- Securing the waste storage area from vandalism and the escape of litter;
- Identification and appropriate disposal of goods with hazardous material content (paints, e-waste, fluorescent tubes);
- Acting to prevent dumping and unauthorised use of waste areas; and
- Requiring contractors to clean up any spillage that may occur during waste servicing or other work.

5 Compliance Checklist

5.1 Conditions of Consent

Clause E40. of the consolidated consent for the Santa Sophia College stipulated that a Waste Management Plan must be prepared for the development prior to the commencement of site operation and submitted to the Certifier (Council or accredited certifier) to include:

Table 5: Compliance with Clause E.40 of Consent

Clause E.40 Conditions	Reference
a. the type and quantity of waste to be generated during operation of the development;	Section 3
b. the handling, storage and disposal of all waste streams generated on site, consistent with the Protection of the Environment Operations Act 1997, Protection of the Environment Operations (Waste) Regulation 2014 and the Waste Classification Guideline (Department of Environment, Climate Change and Water, 2009);	Section 3
c. the materials to be reused or recycled, either on or off site; and	Section 3
d. the Management and Mitigation Measures included in the Waste Management Plan provided at Appendix G of the EIS, as updated by the Response to Submissions.	Section 3.1.3, Section 4.1
e. timing of waste management vehicle access to the site so that there is no conflict with the AM and PM peak drop-off / pick-up times of the CELC.	Section 4.1

5.2 The Hills Shire Council Development Control Plan

The HDCP outlines the following design requirements for waste management during operational phase of the project:

Table 6: DCP Compliance

Development Phase	Requirement	Reference
The Hills Council DCP		
Ongoing	Provision shall be made for all waste and recycling storage containers to be located behind the primary and secondary building line and out of public view.	Appendix A
	Any room(s) for storing garbage and recycling shall be located in a position that is convenient for occupants and waste collection staff. Collection rooms shall complement the development and not be visibly obtrusive when viewed from any public place.	Section 4.4
	A refuse collection point shall be nominated demonstrating that waste loading operations can occur on a level surface not adjacent to steep gradients, vehicle ramps and pedestrian access points.	Section 4.1
	The path for wheeling bins between waste storage area(s) and the collection vehicle shall be free of steps or kerbs and have a maximum gradient of 1V:8H.	Section 4.1
	The maximum travel distance between any storage area/point and the collection point for all bins shall be 25 metres.	Section 4.1
	Where it is intended that collection vehicles are to drive into a private property to collect waste and recycling, the development shall be designed to provide for: I. The safe and efficient service of the development with minimal need to reverse; II. Vehicles to enter and exit in a forward direction; III. Adequate clearance to accommodate the waste collection vehicle dimensions detailed in Table 2.15.2. IV. Where collection vehicles are required to enter the property, the pavement shall be constructed in such a manner that will not be damaged by a collection vehicle carrying the maximum legal weight	Section 4.1
SEPP (Education Establishments and Child Care Facilities) 2017		
10 Waste	(1) A garbage and waste storage area for recyclable and non-recyclable waste materials and receptacles for those materials must – (a) be provided as part of the development, and (b) be located entirely within the lot on which the development is being carried out and not on a road or road reserve, and	Sections 3.1.2, 3.1.3, 4.4 and 4.6. Appendix A

	(c) comply with the following appendices in the document titled Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities (ISBN 978 1 74293 944 5), published by the NSW Environment Protection Authority in December 2012— (i) Appendices A and B, for the size and location of garbage and storage areas and the size of waste receptacles, (ii) Appendices C and D, for the design of openings of waste storage areas and loading bay turning circles for waste removal vehicles, (iii) Appendix E, for standard signs for waste storage areas, (iv) Appendix F, for the design and operational capacity of waste storage areas.	
	(2) The waste storage area must— (a) be screened, and (b) be located behind the primary road frontage building line, and (c) not be located in any car parking, loading or landscaped area, and (d) not be located on any side of the building that faces an adjoining lot on which there is residential accommodation.	Section 4.4, Appendix A
	(3) Despite subclause (1)(a), the waste storage area may be part of an existing facility on the site that has capacity.	N/A

6 References

Australian Department of Sustainability, Environment Water, Population and Communities (2011) Construction and Demolition Waste Guide - Recycling and Re-use Across the Supply Chain.

Australian Standards 4123.7 Mobile Waste Containers

The Hills Local Environmental Plan (HELP) 2019.

The Hills Development Control Plan (HDCP) 2012, amended in 2018.

NSW Department of Education (2014) Educational Facilities Standards and Guidelines

NSW EPA (2012) Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities.

NSW EPA (2014) NSW Waste Avoidance and Resource Recovery Strategy 2014-21.

NSW EPA (2014) Waste Classification Guidelines.

NSW EPA (2019) Better Practice Guide for Resource Recovery in Residential Developments.

NSW Government (1979) Environmental Planning and Assessment Act.

NSW Government (1997) Protection of the Environment Operations Act.

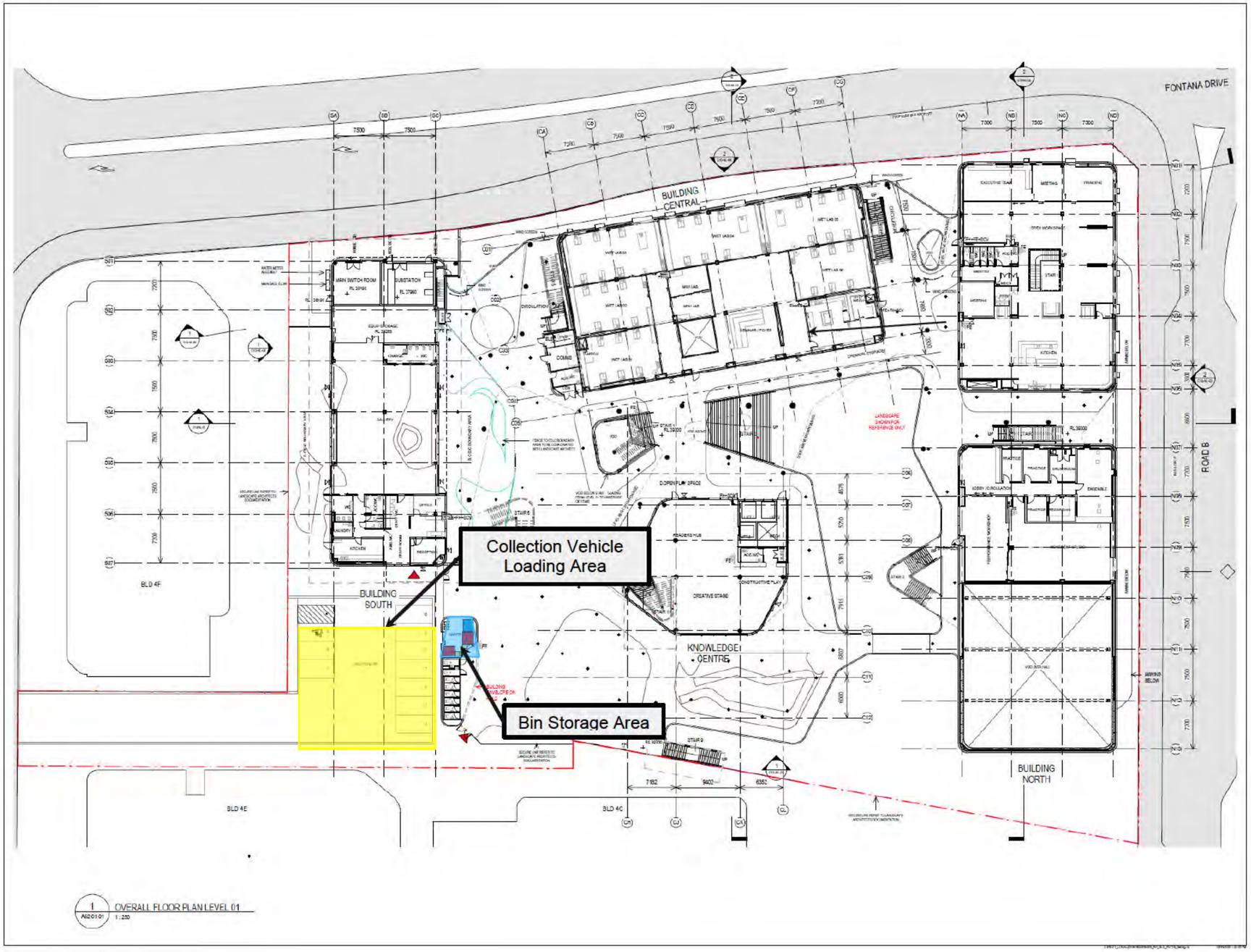
NSW Government (2000) Environmental Planning and Assessment Regulation.

NSW Government (2001) The Waste Avoidance and Resource Recovery Act.

Sustainable Schools NSW (2018) Waste – Accessed at: https://www.sustainableschoolsnsw.org.au/teach/waste

Appendix A Site Plans

Figure 3: Site Plan



Appendix B Construction and Demolition Waste Storage Area

Appendix C Waste Vehicle Access to the Site

Figure 4: SUEZ Front Lift Vehicle Swept Path Diagram

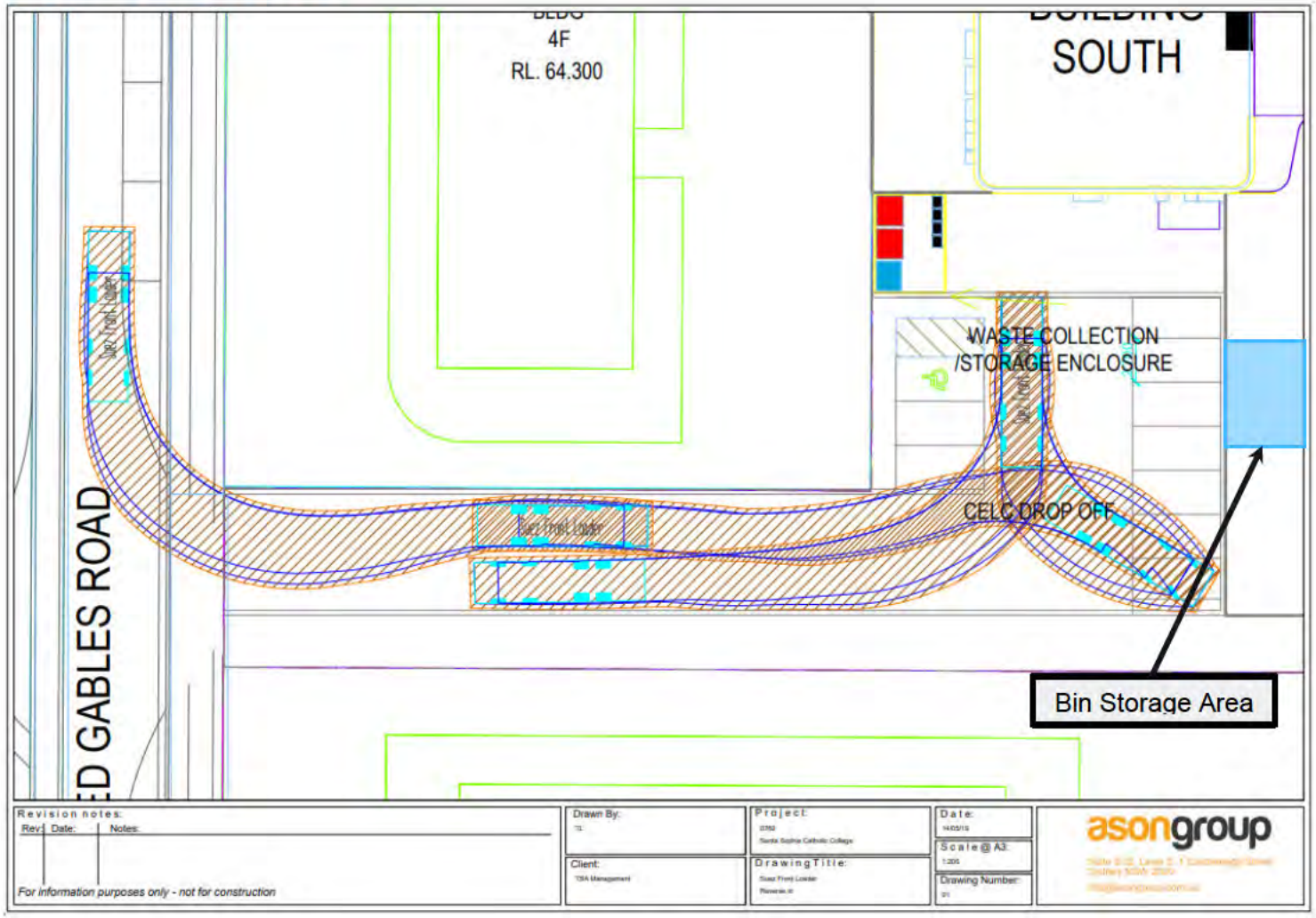
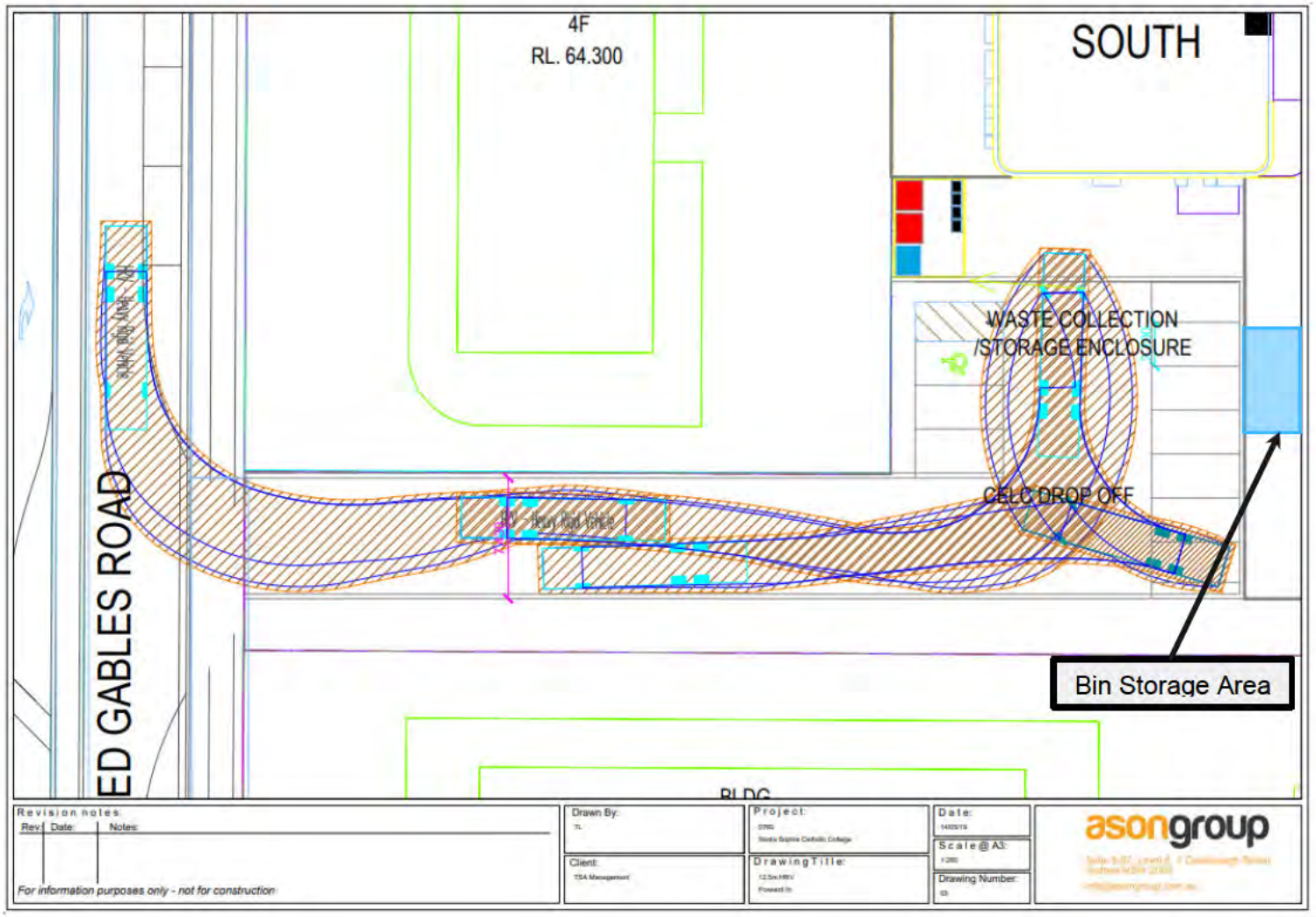


Figure 5: HGV Site Access Swept Path Diagram



Appendix D Standard Signage

Waste Signage

Signs for garbage, recycling and organics bins should comply with the standard signs promoted by the NSW Office of Environment and Heritage (NSW OEH 2008b).

Standard symbols for use in signage, bin facade and educational materials are promoted through the NSW Environment Protection Authority. They are available for download from the NSW EPA website (NSW EPA 2016b), in black and white and colour versions. The Australian Standard series AS 4123 (Part 7) details colours for mobile waste containers (Standards Australia 2008).

Figure 6: Examples of standard signage for bin uses

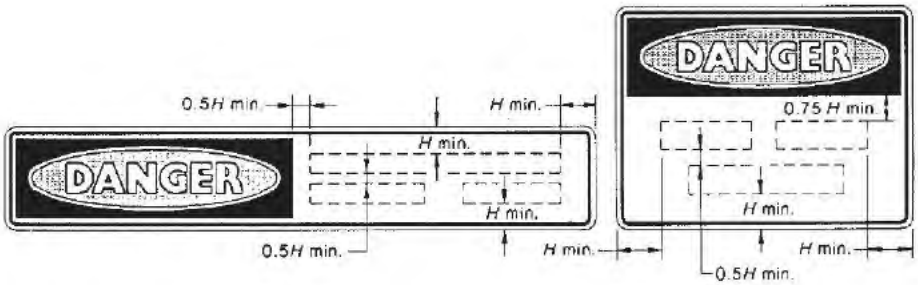
Safety Signs

The design and use of safety signs for waste and recycling rooms and enclosures should comply with AS 1319 (Standards Australia 1994). Safety signs should be used to regulate, and control safety related to behaviour, warn of hazards and provide emergency information, including fire protection information. Below are some examples. Clear and easy to read 'NO STANDING' and 'DANGER' warning signs must be fixed to the external face of each waste and recycling room where appropriate.

Figure 7: Example and layout of safety signage

(d) Horizontal

FIGURE D5 TYPICAL ARRANGEMENTS OF DANGER SIGNS



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Appendix F

Driver Code of Conduct

- Driver Code of Conduct -

Drivers Code of Conduct

Safe Driving Policy for Santa Sophia Catholic College.

Objectives of the Drivers Code of conduct

- Minimise conflict with other road users;
- Minimise road traffic noise; and
- Ensure minibus and bus 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.
- 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 G

Evidence of Consultation (TfNSW)
Removed for Publication

Appendix H

Evidence of Consultation (Council)
Removed for Publication

Appendix C. Santa Sophia College Letter

SANTA SOPHIA
CATHOLIC COLLEGE

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WISDOM THROUGH
FAITH, HOPE & LOVE

17 December 2024

To whom it may concern

Re: Use of the Early Learning Centre's Car Park

Santa Sophia College has been made aware that families from our College have been using the car parking which is designated for the Early Learning Centre.

We confirm that we will work with the Early Learning Service to actively discourage College families from using the Early Learning car park. These measures will include letters, reminders in newsletters and inclusion in orientation packs.

Regards

Kelly Pickett
Business Manager