Traffix Group

Traffic Engineering Assessment

Proposed Secondary School Use and Year 9 Specialist Building Development

Emmaus College St Timothy's Campus, Vermont

Prepared for
Roam Architects

November 2024

G35663R-01B

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AS/NZS ISO 45001-2018 Occupational Health & Safety Management Systems
AS/NZS ISO 14001 Environmental Management Systems
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1. Introduction

Traffix Group has been engaged by Roam Architects to undertake a Traffic Engineering Assessment for the Proposed Secondary School Use and Year 9 Specialist Building Development at Emmaus College St Timothy's Campus, Vermont. This report assesses the change in use from "Primary School" to "Secondary School" and the additional school building proposed on the site.

This report provides a detailed traffic engineering assessment of the parking and traffic issues associated with the proposal.

2. Existing Conditions

2.1. Subject Site

The overall site, addressed as 17-23 Stevens Road, Vermont, accommodates an existing primary school, Catholic Church and child care centre.

St Timothy's Primary School provides for students from Prep to Year 6. St Timothy's Primary School is currently operating well below capacity with approximately 30-40 students and 10 staff, noting we understand that the school is scheduled to be closed in the next few months at the end of 2024. Accordingly, its 2024 enrolment is well below its past operation.

St Timothy's Catholic Parish is located within the western part of the site and provides mass services at 6pm on Saturdays and 10:30am on Saturdays.

Vermont Children's Centre is located within the northern part of the site. This is a child care centre which currently accommodates 37 children, with a maximum capacity of 47 children. The child care centre employs ten staff members, with no more than seven (7) employees on-site at any one time. The centre operates from 7:30am to 6pm, Monday to Friday. We understand that the child care centre has 10 car spaces allocated to it, although there is no specific designation with signage or linemarking within the car park.

Vehicle access to the on-site car park is provided via a dual-width crossover to Stevens Road midway along the site's western boundary. There is also a single width crossover providing access to a small storage shed at the southern end of the site.

A total of 34 formal car parking spaces (including one (1) disabled space) are provided within the on-site car park, with additional informal car parking observed to occur within an asphalt area adjacent to the school classrooms during the school pick-up period.

A locality plan and aerial photograph of the site are provided at Figure 1 and Figure 2, respectively.

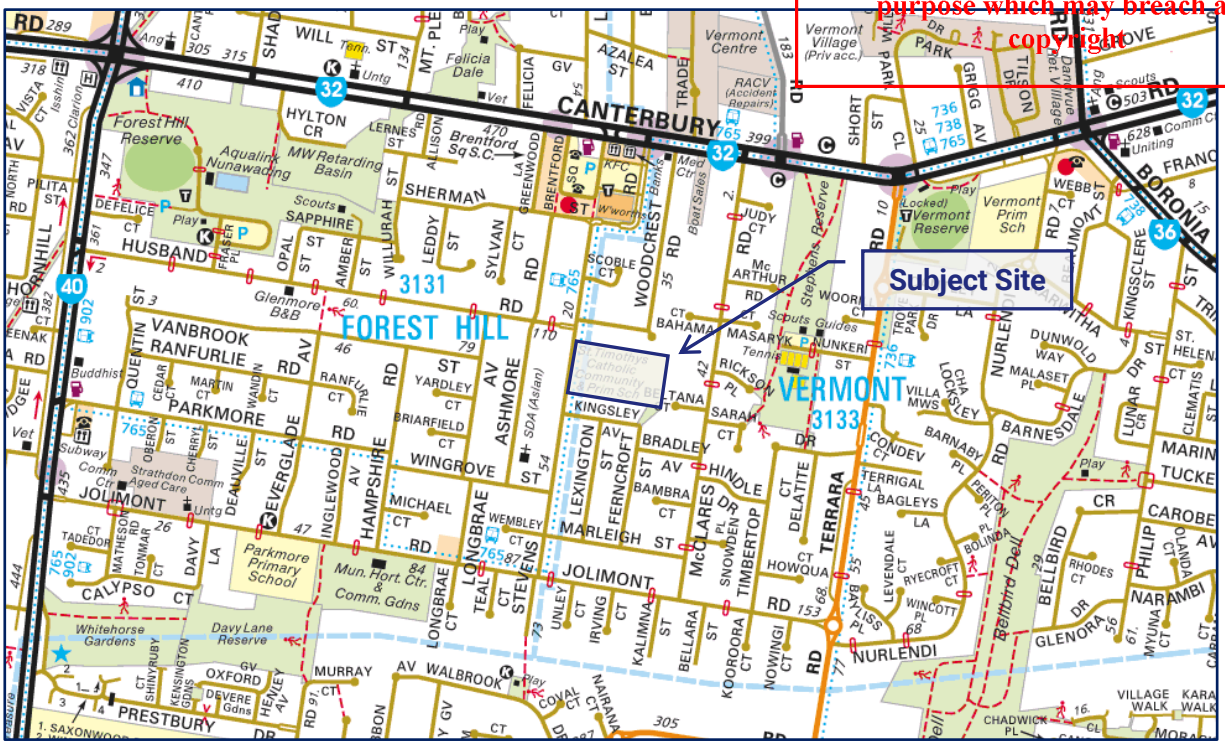

Figure 1: Locality Plan

Source: Electronic Street Directory (e-way)

Figure 2: Aerial Photograph

Source: Nearmap (October 2024)

2.2. Road Network

Stevens Road is a Council local road that is aligned in a north-south direction along the western boundary of the site. Stevens Road has a carriageway width of approximately 7 metres which typically accommodates kerbside parking on both sides and a single lane for shared two-way traffic. Alternatively, simultaneous two-way vehicle movements are accommodated when there are on-street parked vehicles on one side of the road only.

Along the frontage of the site, Stevens Road is generally subject to "No Stopping 8am-4pm Monday-Friday" restrictions, with a "Bus Zone" also located along both sides of the road near the site.

A posted speed limit of 40km/h applies to Stevens Road in the vicinity of the site.

Photographs of Stevens Road are provided at Figure 3 to Figure 6.

Figure 3: Stevens Road - view north

Figure 4: Stevens Road - view south

Figure 5: Main Site Access - view east

Figure 6: Secondary Site Access - view east

2.3. Car Parking

2.3.1. On-Site Car Parking

The site provides a formal 34 space car park (including one (1) disabled space) in the northwest part of the site.

Furthermore, there is an asphalt area that provides informal parking provided to the north of the school classrooms. During Traffix Group's inspection of the site, a peak on site car parking demand of 20 spaces was observed at 3:30pm, with 12 cars parked in the formal car park and eight (8) cars parked in a parallel arrangement in the informal parking area.

Photographs of the on-site parking areas are provided at Figure 7 and Figure 8.

Figure 7: Formal On-Site Car Park

Figure 8: Informal Car Parking Area

2.3.2. On-Street Car Parking

As discussed in Section 2.2, Stevens Road is mostly subject to "No Stopping 8am-4pm Monday-Friday" or "Bus Zone" restrictions adjacent to the site on both sides of the road. Aside from along the site frontage, parking along Stevens Road and surrounding local streets is generally unrestricted.

2.4. Public Transport

The site has limited access to public transport, with one (1) bus route operating in the vicinity of the subject site, including a stop along the site's frontage and opposite the site on Stevens Road. Bus Route 765 provides a service between Box Hill and Mitcham. This service, and public transport routes in the wider area are shown at Figure 9.

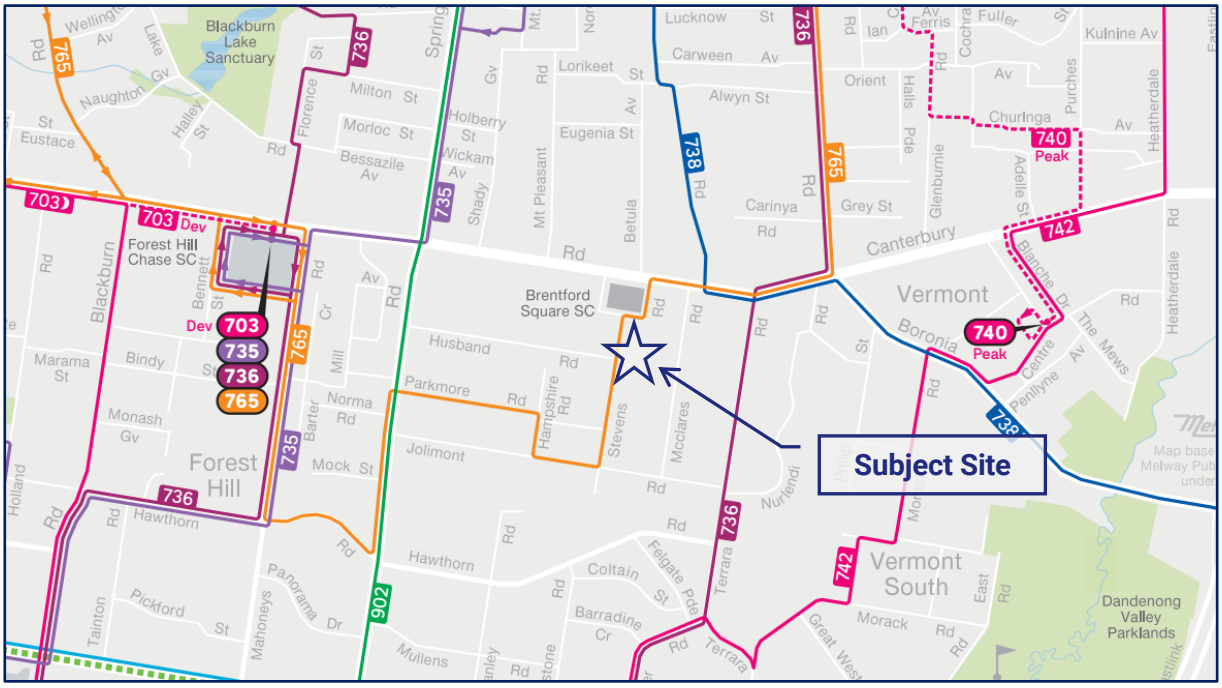

Figure 9: Public Transport Map

Source: PTV

3. Proposal

The proposal is for a change of use at the existing school to be converted from a Primary School to a Secondary School. In addition, a new two-storey building is proposed to be constructed in the southeast part of the site, to operate as a Year 9 specialist building, including Science Labs, an Art room and a Food Tech room.

The application seeks a maximum number of 300 students and 15 staff on the site at any one time. Compared to current operation of the existing primary school, this is an estimated increase of approximately 5 staff members and 260-270 students at any one time[1].

Vehicle access to the site and the on-site car parking provisions are to be retained as per existing conditions.

Loading and waste collection is to occur within the on-site car park and asphalt area as similar to existing conditions.

No changes are proposed to the existing child care centre (Vermont Children's Centre) or church which are to continue to operate as per existing conditions.

Development plans for the proposed Year 9 building development, prepared by Roam Architects, are provided at Appendix A.

[1] It is noted that the existing Primary School's 2024 enrolment well below the levels it has operated at in the past. We have been advised that there is no existing Planning Permit or specific limit on student enrolment or number of staff for the existing primary school.

4. Car Parking Considerations

4.1. Statutory Requirements – Clause 52.06

The car parking requirements for the proposed development are outlined under Clause 52.06 of the Whitehorse Planning Scheme. The purpose of Clause 52.06 is:

- *To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.*
- *To support sustainable transport alternatives to the motor car.*
- *To promote the efficient use of car parking spaces through the consolidation of car parking facilities.*
- *To ensure that car parking does not adversely affect the amenity of the locality.*
- *To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.*

The existing uses on the site fall under the land use categories of "Primary School", "Child Care Centre" and "Place of Worship[2]" under Clause 52.06 of the Planning Scheme.

The application proposes a change in used from "Primary School" to "Secondary School", with the other land-uses to be retained.

The statutory car parking rates for these land uses under Table 1 of Clause 52.06-5 of the Planning Scheme are provided below:

- Child Care Centre: 0.22 spaces to each child.
- Primary School: 1 space to each employee that is part of the maximum number of employees on the site at any time.
- Secondary School: 1.2 spaces to each employee that is part of the maximum number of employees on the site at any time.
- Place of Assembly: 0.3 spaces to each patron permitted.

Clause 52.06-5 states the following which is relevant to the application:

> *Where an existing use is increased by the measure specified in Column C of Table 1 for that use, the car parking requirement only applies to the increase, provided the existing number of car parking spaces currently being provided in connection with the existing use is not reduced.*

There are no changes proposed to the existing child care centre and place of assembly (church) uses on the site, or associated car parking provision. Accordingly, the statutory car parking requirement for the application will be solely based on the change of use from primary

[2] Place of Worship falls within the broader land-use category of Place of Assembly under Clause 73.03 of the Planning Scheme.

school to secondary school, inclusive of the proposed Year 9 specialist building development. The statutory car parking requirement of the existing primary school and proposed secondary school under Clause 52.06-5 of the Planning Scheme is outlined in Table 1 below.

Table 1: Statutory Car Parking Requirement (Clause 52.06)

Use	No. of Employees	Statutory Requirement	Car Spaces Required
Existing Use			
Primary School	10	1 space to each employee that is part of the maximum number of employees on the site at any time.	10
Proposed Use			
Secondary School	15	1.2 spaces to each employee that is part of the maximum number of employees on the site at any time.	18

Based on the above, the proposed secondary school (inclusive of the new building) has a statutory requirement to provide 18 car parking spaces.

The existing on-site car park has 34 formal car parking spaces, noting that 10 spaces are allocated to the existing child care centre. The remaining provision of 24 formal car spaces exceeds the statutory requirement of 18 spaces for the proposed secondary school.

Accordingly, the car parking requirement is satisfied, and the application does not seek a Permit for a reduction in the statutory car parking requirement.

Whilst the Clause 52.06 rates for "Secondary School" allows for staff parking and small amount of other parking demands (i.e. Year 12 students and visitors), it does not make any allowance for parent parking during drop-off/pick-up periods.

An assessment of the appropriateness of the car parking provision with consideration of parent parking demands during pick-up/drop-off periods is provided following.

4.2. Car Parking Demand Assessment

As noted previously, the Clause 52.06 rates do not make any allowance for drop-off/pick-up parking demands by parents which are typically accommodated by on-street parking in government schools where there are usually multiple local street frontages.

In this instance, the site only has frontage to Stevens Road, and both sides of the road adjacent to the site are mostly subject to 'No Stopping 8am-4pm, Monday-Friday' or 'Bus Zone' restrictions. Accordingly, there is limited availability for on-street drop-off/pick-up activities to occur along the school's frontage. While parking on surrounding local roads in the broader area is typically unrestricted, it is expected that most drop-off/pick-up activities will need to be accommodated on-site.

Traffix Group has reviewed available case study data for several schools to determine the parking generation rates during the peak drop-off/pick-up periods. The surveys show that the

typical peak parking demand associated with schools is in the order of 0.2-0.3 spaces per student, inclusive of staff. The peak parking demand typically occurs during the afternoon pick-up period for short time only near the conclusion of the school day.

It is noted that the case study data available includes two P-12 schools and therefore there is a mixture of primary and secondary school students. We expect that the proposed Secondary School would generate a lesser peak car parking rate when considering that the older secondary schools students are more likely to go to school on their own, either by bus or active transport options, without requiring to be dropped-off/picked-up by a car.

For the purpose of our assessment, we believe it is appropriate to adopt the mid-point of the range of 0.25 spaces per student. Accordingly, the empirical peak parking demand is calculated in Table 2 below.

Table 2: Car Parking Demand

Use	No. of Students	Rate	Empirical Car Parking Demand
Secondary School	300	0.25 spaces per student	75

The predicted peak car parking demand generated by the proposed Secondary School is estimated to be 75 spaces, which exceeds the formal car parking provision of 34 spaces. When considering that the child care centre on the site has rights to use 10 of these spaces, there will be 24 formal car parking spaces available to the school. We also note that the church is not expected to generate any parking demands during school times,

Accordingly, the proposed secondary school is predicted to generate up to 51 cars above the capacity of the formal car parking during the peak drop-off/pick-up periods.

As outlined in Section 2.3.1, the existing parent pick-up parking occurs in an informal parallel drive-through arrangement in the asphalt area adjacent to the classrooms.

Formalising this asphalt car park area with linemarked 90 degree spaces would achieve in the order of 51 car spaces, as shown in the concept sketch at Figure 10. This arrangement would enable the peak car parking demand (i.e. during the afternoon pick-up period) generated by the school to be accommodated on site.

We recommend that this area be signed as 'No Entry 9am-2:30pm' or similar, depending on school bell times, to provide a balance between allowing the area to be used for drop-off and pick-up movements, as well as restricting vehicle access during school times to reduce any potential conflicts between students and vehicles. A gate should also be considered to prevent vehicle periods to further reduce any potential for conflicts.

We are of the view that this is an appropriate arrangement that is similar to current operations for the primary school during the pick-up period, noting that the primary school historically operated with a higher enrolment that is comparable to the proposed secondary school.

We also expect that some parents may prefer to use on-street parking in the surrounding area where permitted which will lessen the peak on-site car parking demand.

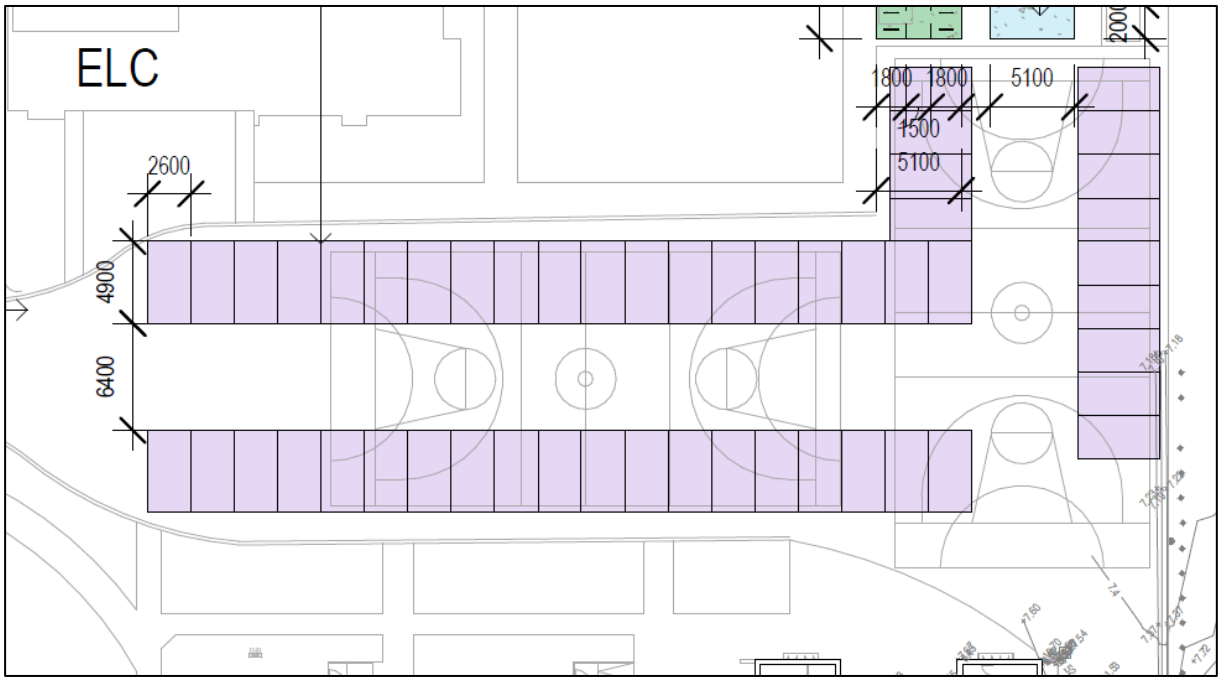

Figure 10: Informal Car Parking Layout – 51 spaces

4.3. Car Parking Layout & Access

Access to the site is proposed to remain as per existing conditions, with the existing arrangements observed to be appropriate. We recommend that the informal car parking area be linemarked in line with the requirements of Clause 52.06-9 of the Planning Scheme, with 90-degree parking spaces provided at a length of 4.9m, width of 2.6m and an access aisle width of 6.4m. A turning bay should be provided near the bend of the informal car park.

5. Bicycle Considerations

Clause 52.34 of the Planning Scheme specifies the bicycle parking requirement for new developments. The statutory bicycle rates for "Secondary School" is as follows:

- one to each 20 employees for employees, plus
- one to each 5 pupils for students.

An assessment of the increased bicycle parking requirement based on the change in use and Year 9 building development is presented at Table 3, below

Table 3: Statutory Bicycle Parking Requirement

Use	Statutory Requirement	No. Staff/Students	Requirement
Proposed Use			
Secondary School	1 to each 20 employees	15	1
	1 to each 5 pupils	300	60

Based on the above, the application has a statutory bicycle parking requirement to provide a total of 61 bicycle spaces including one (1) staff and 60 student bicycles spaces.

The plans identify a new bicycle parking area with 31 double-side rails, providing for 62 bicycle spaces. Accordingly, the proposed bicycle parking provision meets the above statutory bicycle parking requirement.

6. Traffic Considerations

In order to estimate the traffic generation of the proposed secondary school, we refer to a case study for Aitken College in Greenvale[3]. sets out the traffic generation rates which were identified during the AM peak drop-off period.

Table 4: Case Study Data - Traffic Generation Rates during AM Drop-off Period

Time	Traffic Generation Rate (vte(1) per student)		
	In	Out	TOTAL
8:00am – 9:00am	0.47	0.38	0.85
Note (1) vte – vehicle trip ends			

For the purpose of our assessment, we have adopted the above traffic generation rates for the AM peak hour, and the opposite entry/exit rates for the PM peak hour, with these rates applied to the proposed student enrolment of 300 students.

Based on the above, Table 5 provides a summary of the projected t traffic generation during the AM and PM peak hours.

Table 5: Development Traffic Generation

Period	Inbound Movements	Outbound Movements	Total Movements
AM Peak Hour	141	114	255
PM Peak Hour	114	141	255

Based on the above, it is expected that the proposed school will generate in the order of 255 movements during each of the morning drop-off and afternoon pick-up periods.

We are of the view that this level of traffic generation can be adequately accommodated by the surrounding road network and intersections. Furthermore, this level of traffic is likely to have been comparable to what was generated by the primary school in the past when it operated closer to capacity with a similar student enrolment to what is sought by the application.

[3] Aitken College is private school located in an outer-suburban location and caters for Prep to Year 12. We expect that the Aitken College case study data would provide a conservative assessment for traffic generation of the proposed secondary school.

7. Loading & Waste Considerations

7.1. Loading

Clause 65.01 of the Planning Scheme states that the responsible authority must consider a number of matters as appropriate including:

- *The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.*

We expect that the proposed school will only require deliveries that are of a small and infrequent nature, which will most likely be undertaken by vans or small rigid vehicles (SRVs). We are satisfied that loading activities can satisfactorily occur within on-site car park or asphalt informal parking area, as similar to arrangements the existing primary school and child care centre.

7.2. Waste Collection

Waste collection is proposed to occur on-site within the asphalt informal parking area via a private contractor using up to a medium rigid vehicle (MRV) as similar to existing arrangement for the current primary school.

Waste collection should be scheduled to occur outside school operating hours when the asphalt area will not be occupied.

Further details on waste collection arrangements are outlined in the Waste Management Plan (WMP) prepared by Traffix Group (Our ref: G35663R-02B (WMP)) to accompany the application.

Swept path diagrams demonstrating waste vehicle movements for a MRV are attached at Appendix B.

8. Buses

We understand that the College intends to have some Year 9 classes operate from the existing Emmaus College Campus, located on Springvale Road to the southwest. Accordingly, minibuses (such as a Toyota Coaster) are proposed to transfer students between the existing Emmaus College campus and St Timothy's.

Swept path diagrams which demonstrate satisfactory vehicle movements for a Toyota Coaster including circulation within the on-site asphalt area are attached at Appendix B.

9. Conclusion

Having undertaken a detailed Traffic Engineering Assessment for the Proposed Secondary School Use and Year 9 Specialist Building Development at Emmaus College St Timothy's Campus, Vermont, we are of the opinion that:

a) The proposed secondary school has a statutory car parking requirement to provide 18 car parking spaces which is accommodated within the existing formal on-site car park. Accordingly, the application does not seek a Permit for a reduction in the statutory car parking requirement,

b) When considering the peak demand during the morning drop-off/afternoon pick-up period inclusive of parents, the secondary school is expected to generate a peak car parking demand for 75 car parking spaces,

c) The existing car parking supply of 24 formal car parking spaces (excluding the child care centre allocated spaces) and informal area which can accommodate in the order of 51 space in a 90-degree arrangement is sufficient to accommodate the peak anticipated car parking demands during drop-off/pick-up periods,

d) The existing site vehicle access will continue to be appropriate post development,

e) Traffic generated by the proposal can be accommodated by the surrounding road network and intersections, and would be similar to past traffic generation for the existing primary school when it was operating at a higher enrolment,

f) A total of 62 bicycle parking spaces are to be provided in accordance with the requirements set out at Clause 52.34 of the Planning Scheme.

g) Appropriate loading and waste collection arrangements can be accommodated on-site, as similar to existing arrangement for the current primary school, and

h) The proposed change of use to Secondary School and the proposed new school building is appropriate from a traffic engineering perspective.

Appendix A

Development Plans

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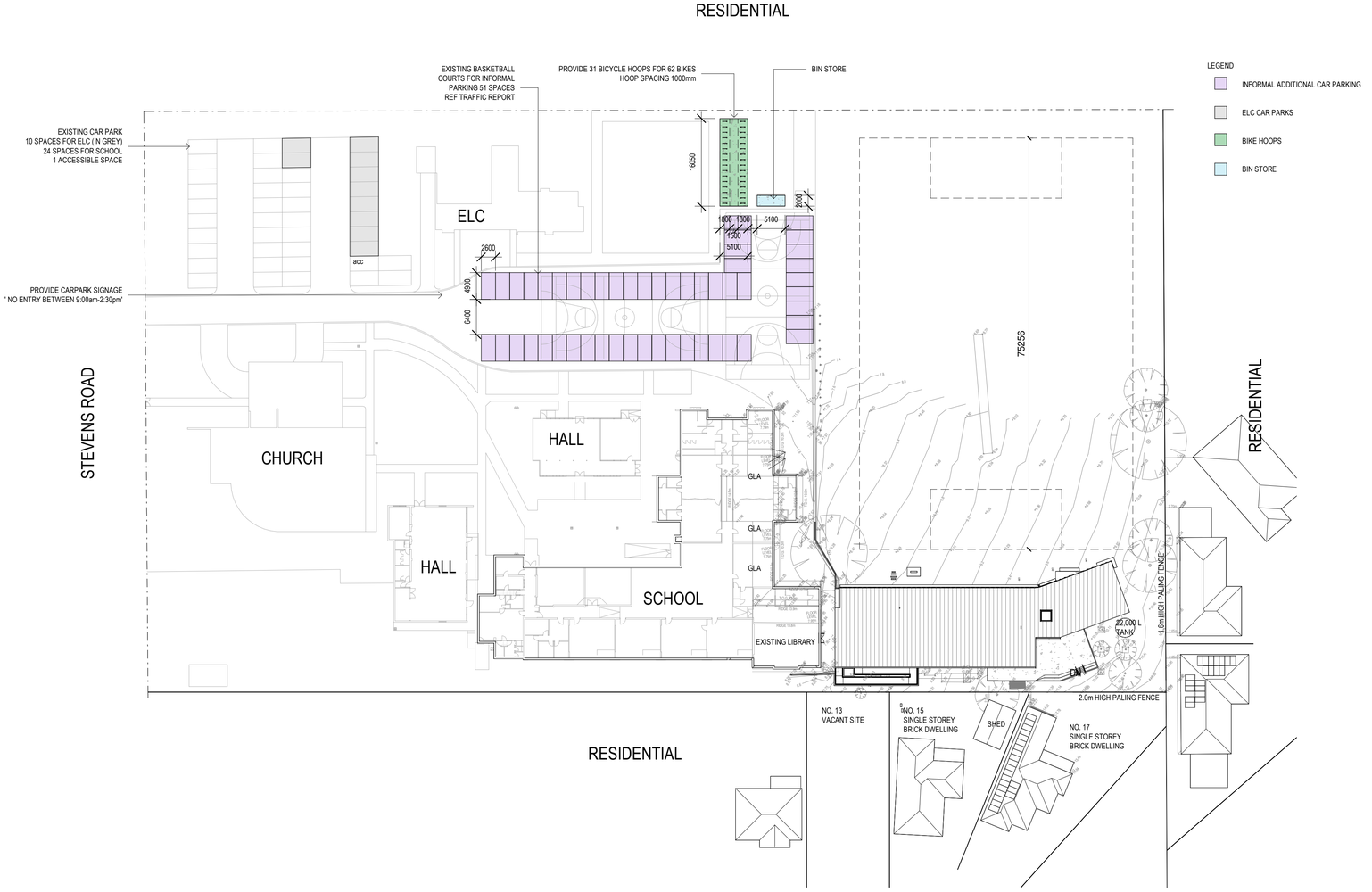
ISSUE	DATE	REVISIONS
1	25.07.2024	PRELIMINARY
2	8.08.24	CONCEPT
3	22.08.24	SD
4	11.10.2024	CONSULTANT ISSUE SD
5	23.10.2024	ESD TP ISSUE 2
6	30.10.2024	CONSULTANT ISSUE
7	31.10.2024	COST PLAN B
8	8.11.2024	CONSULTANT ISSUE 2



1 **SITE PLAN - PROPOSED**
1 : 500

CLIENT
EMMAUS COLLEGE

PROJECT TITLE
EMMAUS COLLEGE SAINT TIMOTHY'S CAMPUS

PROJECT NUMBER
ROAM 137

PROJECT NORTH

GRAPHIC SCALE

SCALE
1 : 500 AT A1 DO NOT SCALE

STATUS
SCHEMATIC DESIGN

DRAWING
PROPOSED SITE PLAN

DRAWING NUMBER	ISSUE
137-A-03	8

Appendix B

Swept Path Diagrams

ADVERTISED PLAN

ISSUE	ISSUE DESCRIPTION	DESIGNER	CHECKED/APPROVED	ISSUE DATE
A	INITIAL ISSUE	DFT	BC (RPE7582)	13/11/2024

GENERAL NOTES
1 BASE INFORMATION FROM AERIAL PHOTOGRAPH (SOURCE NEARMAP OCTOBER 2024)

DESIGNED: D. TORPEY
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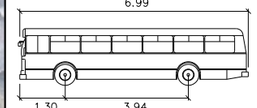
EMMAUS COLLEGE - ST TIMOTHYS CAMPUS
17-23 STEVENS ROAD, VERMONT
WHITEHORSE CITY COUNCIL
SWEPT PATH ASSESSMENT

SCALE 1:500 (A3) 0 2.5 5 7.5 10
SHEET No. 1/2
DWG No. G35663-01-01

DATE: 13/11/2024
MODEL: G35663-01-01
FILE: P:\Synergy\Projects\GRP3\GRP35663\03-Drawings\G35663-01-00.dgn

STEVENS ROAD

VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5km/h)



Toyota Coaster
meters

Width	: 2.10
Track	: 1.69
Lock to Lock Time	: 6.0
Steering Angle	: 34.3

STEVENS ROAD

VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5km/h)
6.99
1.30
3.94
Toyota Coaster
meters
Width : 2.10
Track : 1.69
Lock to Lock Time : 6.0
Steering Angle : 34.3

ISSUE	ISSUE DESCRIPTION	DESIGNER	CHECKED/APPROVED	ISSUE DATE
A	INITIAL ISSUE	DFT	BC (RPE7582)	13/11/2024

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1 BASE INFORMATION FROM AERIAL PHOTOGRAPH (SOURCE NEARMAP OCTOBER 2024)

DESIGNED: D. TORPEY
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EMMAUS COLLEGE - ST TIMOTHYS CAMPUS
17-23 STEVENS ROAD, VERMONT
WHITEHORSE CITY COUNCIL
SWEPT PATH ASSESSMENT

SCALE 1:500 (A3) 0 2.5 5 7.5 10 | SHEET No. 2/2 | DWG No. G35663-01-02

DATE: 13/11/2024
MODEL: G35663-01-02
FILE: P:\Synergy\Projects\GRP3\GRP35663\03-Drawings\G35663-01-00.dgn