

*Trinity Anglican College*  
Transport Impact Assessment



220694TIA002E-F

8 February 2023

onemilegrid

ABN: 79 168 115 679

(03) 9939 8250  
Wurundjeri Woieworung Country  
56 Down Street  
COLLINGWOOD, VIC 3066  
[www.onemilegrid.com.au](http://www.onemilegrid.com.au)

## DOCUMENT INFORMATION

Prepared for	Tomahawk Property		
File Name	220694TIA002E-F	Report Date	8 February 2023
Prepared by	NT	Reviewed by	VG

*onemilegrid operates from Wurundjeri Woieworung Country of the Kulin nation. We acknowledge and extend our appreciation to the Wurundjeri People, the Traditional Owners of the land. We pay our respects to leaders and Elders past, present and emerging for they hold the memories, the traditions, the culture, and the hopes of all Wurundjeri Peoples.*

*© One Mile Grid Pty Ltd. This document has been prepared by onemilegrid for the sole use and benefit of the client as per the terms of engagement. It may not be modified or altered, copied, reproduced, sold or transferred in whole or in part in any format to any person other than by agreement. onemilegrid does not assume responsibility or liability to any third party arising out of use or misuse of this document.*

## CONTENTS

1	INTRODUCTION.....	5
2	EXISTING CONDITIONS .....	5
2.1	Site Location .....	5
2.2	Planning Zones and Overlays.....	7
2.3	Road Network.....	8
2.4	Sustainable Transport .....	8
2.5	Existing Traffic Conditions .....	9
3	PROPOSAL.....	10
4	DESIGN ASSESSMENT .....	11
4.1	General .....	11
4.2	Vehicle Access Design .....	11
4.3	Pedestrian and Cyclist Access .....	11
4.4	Bus Parking and Kiss and Drop Facilities.....	11
5	BICYCLE AND MOTORCYCLE PARKING .....	12
6	CAR PARKING .....	12
7	TRAFFIC.....	13
7.1	Existing Traffic Generation .....	13
7.2	Anticipated Traffic Generation.....	13
7.3	Expected Traffic Volume Growth.....	13
7.4	Resultant Future Traffic Volumes .....	14
7.5	Traffic Impact .....	14
8	CONCLUSIONS.....	15

## TABLES

Table 1	Existing Traffic Volumes – Elizabeth Mitchell Drive .....	9
Table 2	Predicted Students and Staff Numbers.....	10
Table 3	Existing College Traffic Generation .....	13
Table 4	Anticipated Peak Hour Traffic Generation.....	13
Table 5	Existing Traffic Volumes with Growth – Elizabeth Mitchell Drive .....	13

## FIGURES

Figure 1	Site Location .....	5
Figure 2	Site Context .....	6
Figure 3	Planning Zones .....	7
Figure 4	Public Transport Provision.....	8
Figure 5	Existing Traffic Volumes – Thursday 16 August 2018 .....	9
Figure 6	Site Plan.....	10
Figure 7	Resultant Future Traffic Volumes .....	14
Figure 8	Rural BAL Turn Treatment .....	15

## APPENDICES

### APPENDIX A    SWEPT PATH DIAGRAMS

# 1 INTRODUCTION

onemilegrid has been requested by Tomahawk Property to undertake a Transport Impact Assessment of the proposed additions to Trinity Anglican College, located at 421 Elizabeth Mitchell Drive, Thurgoona.

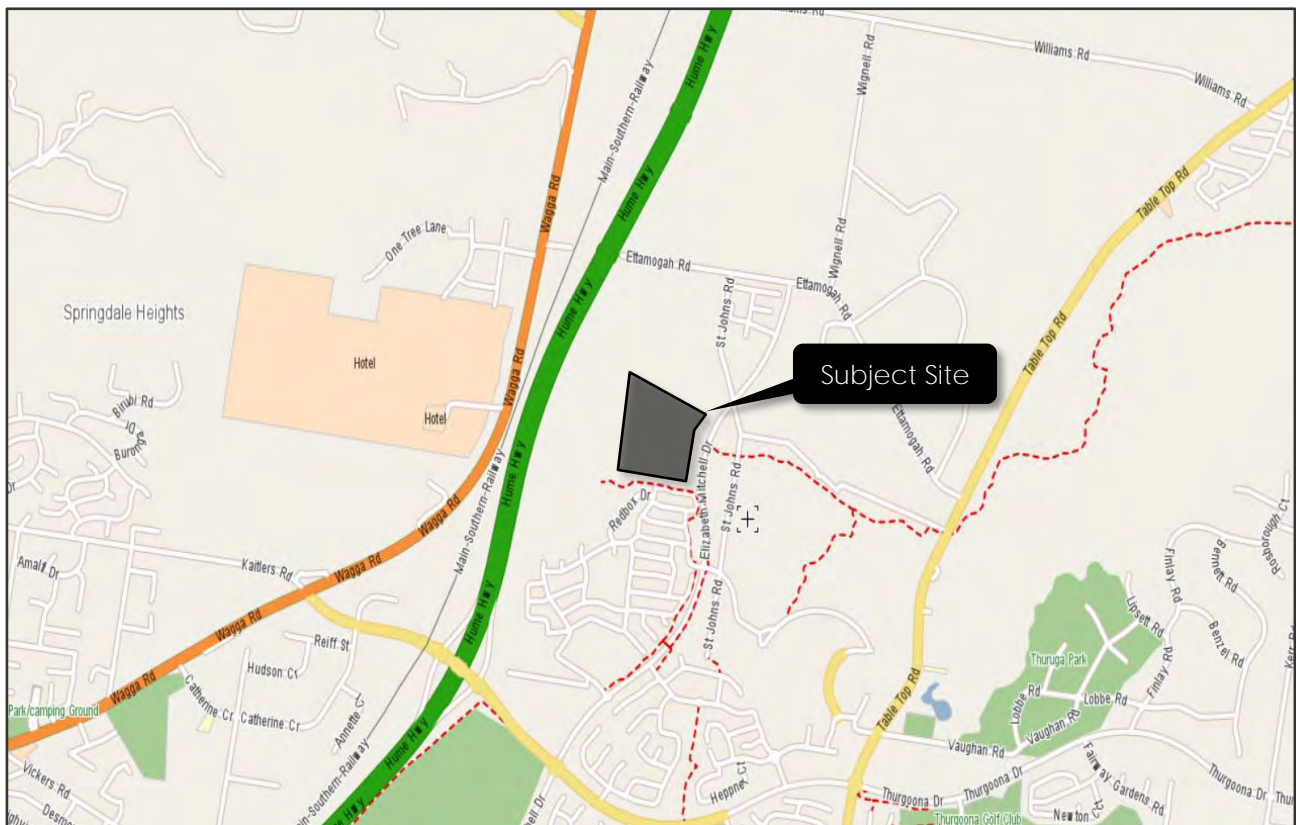
As part of this assessment the subject site has been reviewed with due consideration of the development proposal, traffic and parking data has been sourced and relevant background reports have been reviewed.

## 2 EXISTING CONDITIONS

### 2.1 Site Location

The subject site is located on the west side of Elizabeth Mitchell Drive, Thurgoona as shown in Figure 1.

Figure 1 Site Location



Copyright Melway Publishing

The site is irregular in shape and has one road frontage to Elizabeth Mitchell Drive of approximately 280 metres. The site is currently occupied by Trinity Anglican College.

Vehicle access to the site is available via two crossovers towards the south of the site for use by staff, parents, students and buses. The southern crossover operates with vehicle movements in both directions, whilst the northern crossover is restricted to exit movements only.

Parking for the existing school is provided in the southeast corner and along the western boundary, with a supply of 158 spaces and 89 spaces respectively, Furthermore, approximately 50 informal



student parking spaces are located south of the science building, totalling approximately 300 spaces throughout the site.

Parent kiss and drop facilities are located within the front car park. Vehicles enter the site via the southern row of parking and exit onto the northern row, leading directly to the main accessway adjacent the site exit. The kiss and drop includes a bypass lane which allows for vehicles parked within the main aisles to still circulate through the drop off area.

A bus pick-up/drop-off and turnaround area is located in a separate area south of the front car park.

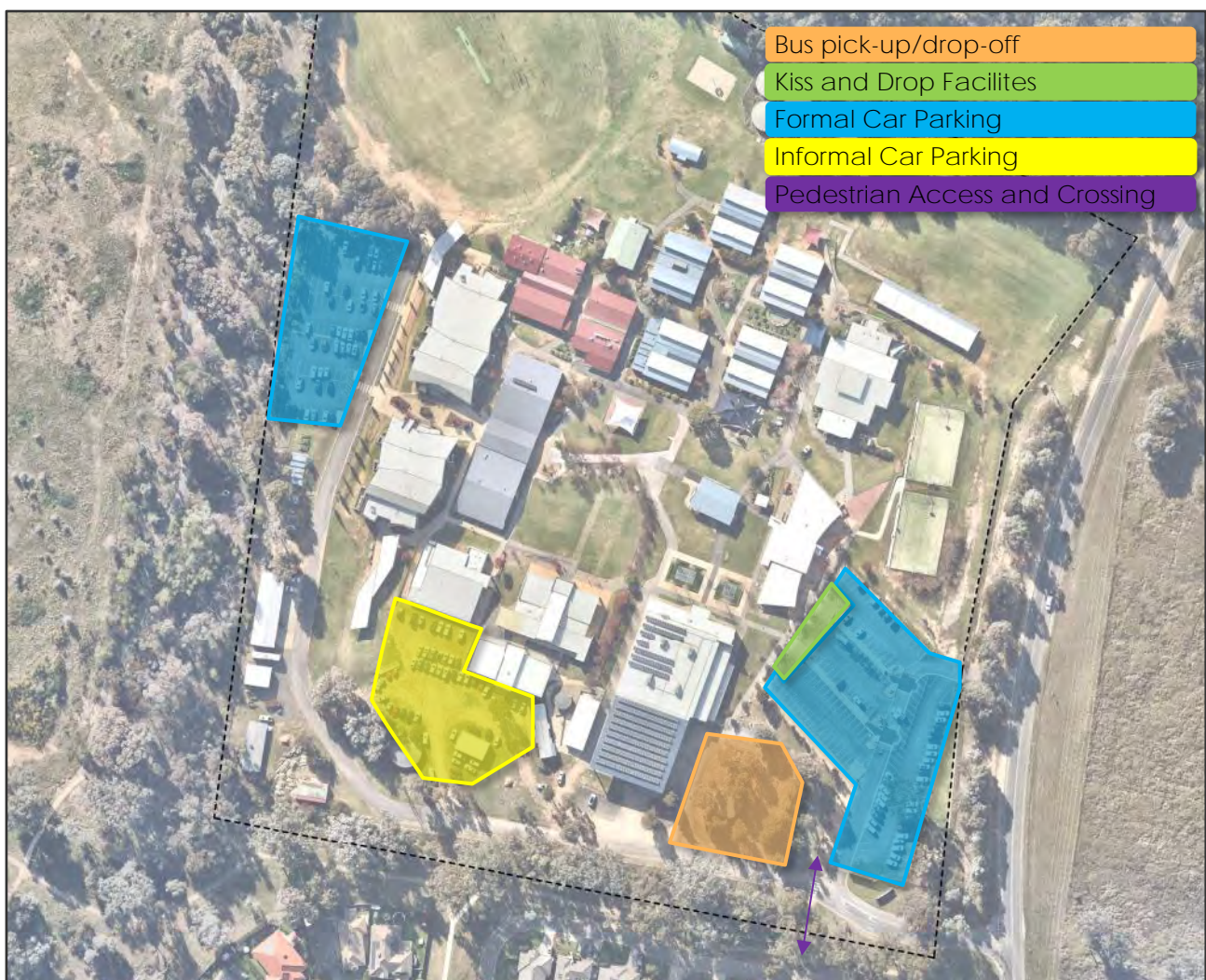
Furthermore, a total of 18 bicycle parking spaces are provided throughout the site. It is understood that these spaces are underutilised and additional bicycle spaces are not required. Pedestrian access is available from the south eastern corner of the site via an existing pedestrian path through existing residential land with an internal pedestrian crossing providing access to the main campus buildings.

Information provided by the College suggests that 1,198 students (including 88 year 12 students) are currently enrolled, and 64 full time staff and 103 part time staff are currently employed.

Land use in the vicinity of the site is generally residential in nature, with low density residential lots to the north and south surrounded by rural residential lots and farmland. It is understood that relatively low levels of growth have occurred to the residential areas to the north over the past 5 years.

An aerial view of the subject site is provided in Figure 2.

Figure 2 Site Context



## 2.2 Planning Zones and Overlays

It is shown in Figure 3 that the site is located within a Residential Zone.

Figure 3 Planning Zones





## 2.3 Road Network

Elizabeth Mitchell Drive is a local Council controlled road generally aligned north-south in the vicinity of the site and operates with a single carriageway that provides a single traffic lane in each direction. A combination of sealed and unsealed shoulders are provided on both sides of the road at the site frontage.

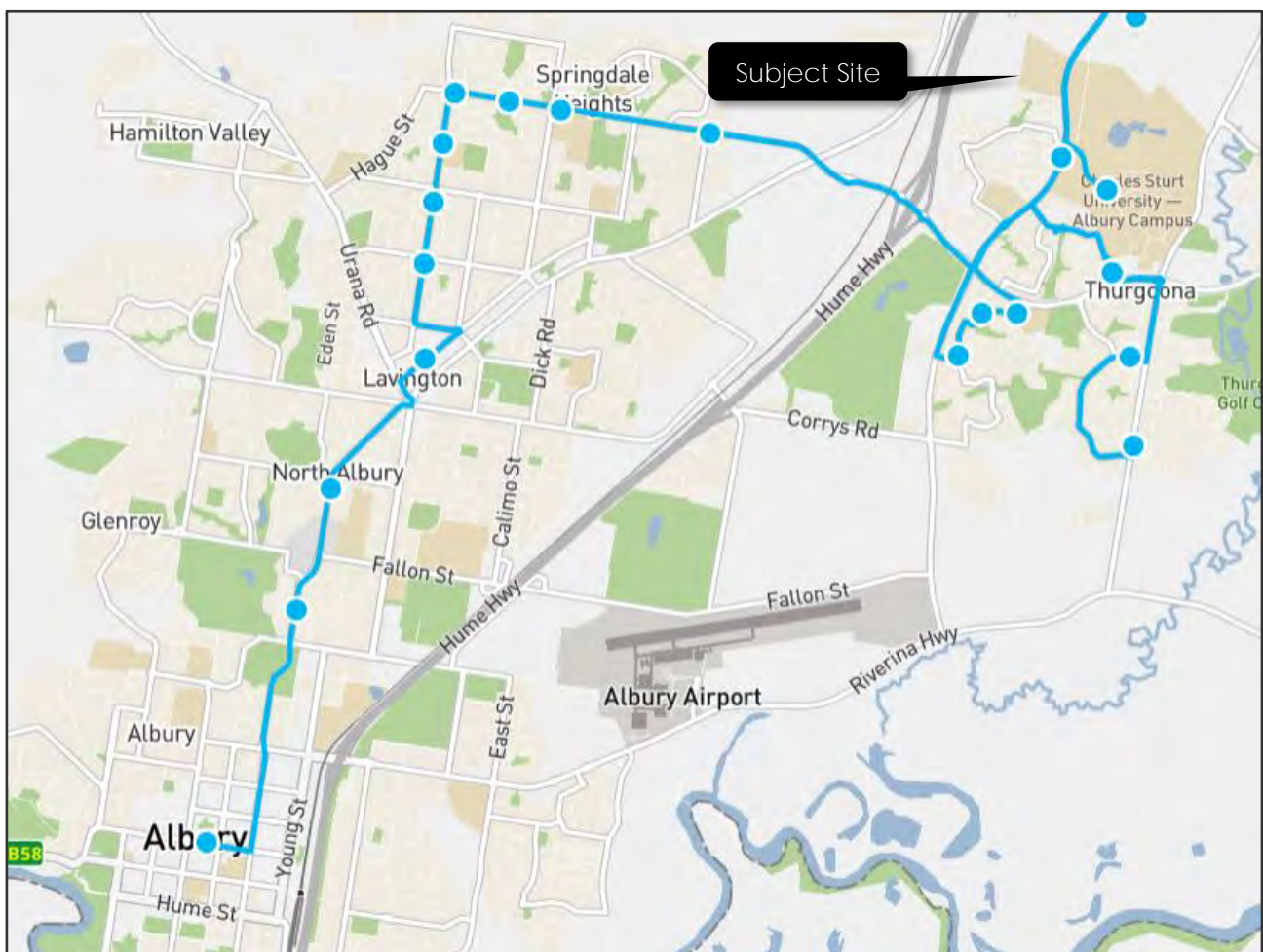
A 60km/h speed limit applies to Elizabeth Mitchell Drive in the vicinity of the site, with a school zone speed limit of 40km/h hour applying during school drop-off and pick-up periods.

At the main site access point, the intersection is configured as a standard T-intersection, with no localised widening provided.

## 2.4 Sustainable Transport

The full public transport provision in the vicinity of the site is shown below in Figure 4.

Figure 4 Public Transport Provision



It is shown that public transport in the area is limited to bus services with the route 908 bus service operating between the Albury city centre and Thurgoona. The closest bus stop is located approximately 400 metres south of the site. In addition to this bus service, school bus services operate from the surrounding areas directly into the site.

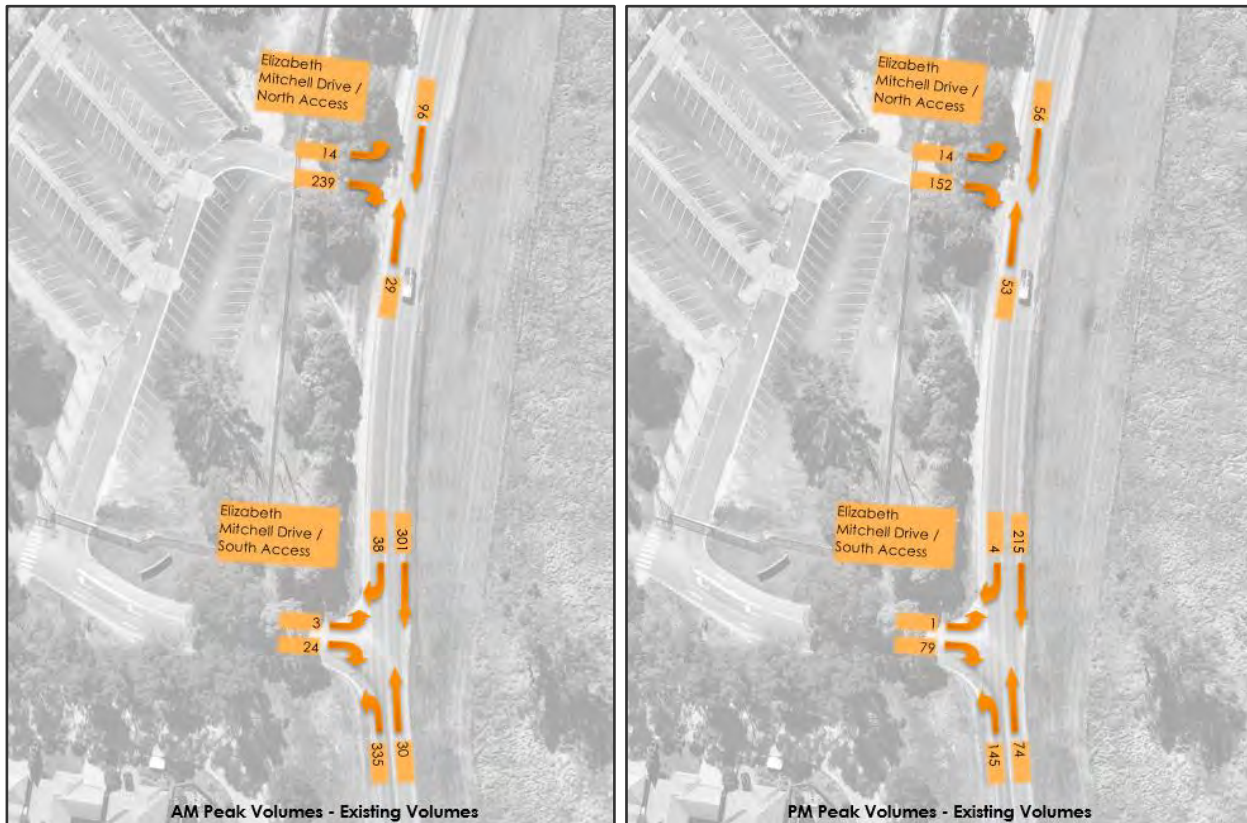


## 2.5 Existing Traffic Conditions

As part of a previous traffic study for the college by Peter Meredith Consulting in August 2018, turning movement surveys were undertaken at the two site access points with Elizabeth Mitchell Drive.

The peak hour results of the surveys have been provided below.

Figure 5 Existing Traffic Volumes – Thursday 16 August 2018



Considering the little development in the area and no significant increase in the number of staff and students at the school since 2018, the above volumes are considered representative of the current conditions at the site.

Based on the above volumes, the existing peak traffic volumes on Elizabeth Mitchell Drive and traffic distribution to and from the site is shown below. The existing traffic volumes have included the through volumes only and have excluded any vehicles turning in and out of the College.

Table 1 Existing Traffic Volumes – Elizabeth Mitchell Drive

Direction	AM Peak 8:00am – 9:00am	PM Peak 3:00pm – 4:00pm
Northbound	30	74
Southbound	58	52
Total	88	126

In relation to the movements into and out of the college itself, there is a strong bias to / from the south, with 90% of traffic originating and destined to the south.

### 3 PROPOSAL

The application seeks to provide improved school facilities in the form of three buildings for use as a music and drama centre, a primary precinct and a secondary precinct. The works will provide facilities which are currently not provided on-site as well as additional classrooms and facilities. The proposed works are not intended to specifically increase the capacity of the school but rather provide for superior facilities for existing students. Nevertheless, over time as part of natural growth at the college, there will be an increase in students and staff, as summarised below.

Table 2 Predicted Students and Staff Numbers

Component	Existing	Predicted Future	Increase
Students	1,198	1,461	263
Staff	103	112	9
Total	1,301	1,574	272

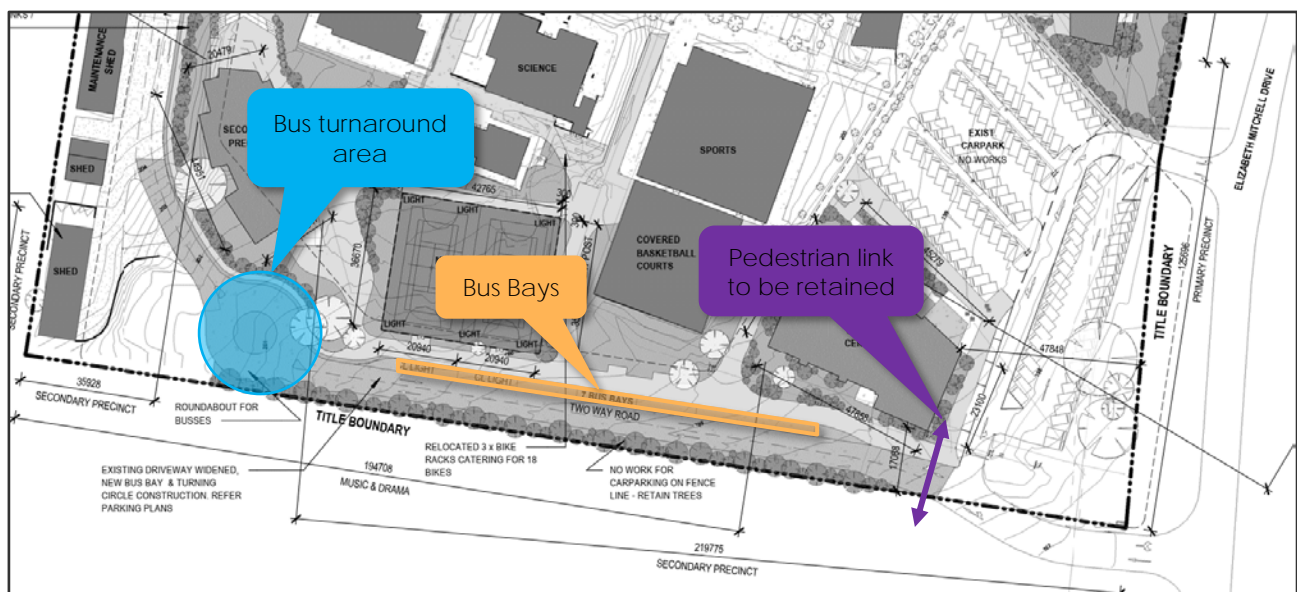
As part of the proposal, the existing accessways within the site will be modified to allow for improved vehicle and bus circulation. These changes include:

- Removal of the existing bus drop-off and turnaround area;
- Construction of a new roundabout along the southern accessway to facilitate bus turnaround movements;
- Construction of seven dedicated bus parking spaces along the northern side of the southern accessway; and
- Pedestrian links between the proposed buildings, the bus pick-up/drop-off area and the existing on-site footpaths.

No changes to any of the formal car parking areas are proposed, however the informal student parking area will be removed resulting in a future parking supply of 247 spaces.

An extract of the proposed work is provided below, showing the new bus drop-off and turnaround areas. The proposal will result in a reduction in conflict between buses and parents.

Figure 6 Site Plan



## 4 DESIGN ASSESSMENT

---

### 4.1 General

onemilegrid has undertaken an assessment of the car parking and access layout for the proposed bus drop-off and turnaround areas with due consideration to the Albury Development Control Plan 2010 and the Australian Standards.

A review of the relevant Design Standards is provided in the following section.

### 4.2 Vehicle Access Design

The proposed two-way accessways are provided with a minimum width of 6.5 metres, exceeding the Australian Standard requirements AS2890.2, and the roundabout has been appropriately designed to allow bus turnaround movements.

A swept path assessment has been undertaken demonstrating access and circulation of a long rigid bus within the proposed internal roadways, including the bus turn around at the roundabout and using the pick-up/drop-off spaces without impacting on other vehicles.

Specifically, a bus can turnaround using the roundabout without encroaching onto any nearby pedestrian pathways or impeding the safety of other vehicles, and also a bus can enter and prop within the pick-up/drop-off bays while buses and other vehicles pass beside it.

The swept path assessment has been attached in Appendix A.

### 4.3 Pedestrian and Cyclist Access

A pedestrian and cycling entrance is located along the southern boundary of the site connecting to an off-street trail with connections to the residential areas to the south and north. This path crosses the southern site accessway at a signed and line marked pedestrian crossing which is manned by staff during the peak morning and afternoon periods.

As only low levels of growth is occurring north of the site, and no on-street pedestrian paths are located on Elizabeth Mitchell Drive, the existing pedestrian access to the site is considered appropriate and no additional entrances are required.

Furthermore, it is understood that bicycle storage is provided on site for staff and students, in addition to shower and end of trip facilities for staff which will promote alternative travel patterns to the site.

### 4.4 Bus Parking and Kiss and Drop Facilities

It is proposed to provide improved bus parking and turnaround facilities to improve operating conditions for all vehicles. These changes will result in fewer vehicle conflicts between buses and staff accessing the rear car park.

With regard to the kiss and drop facilities, information provided by the College suggests the existing facilities operate well, with no queuing issues at the end of the school day. Therefore, the kiss and drop facilities are expected to accommodate the additional parent drop/off demand in the AM peak. During the PM peak, parents are likely to utilise the front parking area as well as the kiss and drop area for student pick-up.



## 5 BICYCLE AND MOTORCYCLE PARKING

---

The bicycle and motorcycle parking requirements for the subject site are identified in Section 17.3.3 of the Albury Development Control Plan 2010, which specifies the following requirements for the development:

- Car parks with 30 or more spaces are to provide 1 bicycle rack space for each 10 spaces.
- Car parks with 30 or more spaces are to provide 1 motorcycle space per 30 car parks or part thereof.

As no additional parking spaces are proposed, the development does not require any additional bicycle or motorcycle spaces.

## 6 CAR PARKING

---

The car parking requirements for the site are listed within Table 17.1 of the Albury Development Control Plan 2010, which lists the follow requirements for an education establishment:

- 1 space per staff member; plus
- 1 space per 10 year 12 students

Based on information provided by the college, the number of staff is expected to grow to 112, however the future number of year 12 students is unknown. Considering an increase in total students of approximately 20%, this rate can be applied to the 88 existing year 12 students, producing an estimated 106 students. 110 students will be adopted for conservative measures.

Based on the above, a total of 121 total spaces are required for staff and students. After the removal of the informal parking area, a total of 247 spaces remain for staff and student use, which is in excess of the above requirements.

The existing car parking is therefore considered more than adequate to cater for existing and future demands.

## 7 TRAFFIC

### 7.1 Existing Traffic Generation

Traffic surveys were undertaken at the existing site access points in 2018. At that time, there were approximately 1,150 students and 100 staff. It is therefore possible to determine an existing, site specific traffic generation rate for the college. A review of this data is provided below.

Table 3 Existing College Traffic Generation

	<i>Inbound</i>	<i>Outbound</i>	<i>Total</i>
AM Peak	373	280	653
Existing Rate / Student	0.32	0.24	0.57
PM Peak	149	246	395
Existing Rate / Student	0.13	0.21	0.34

It is noted that the above is conservative as it includes staff trips.

### 7.2 Anticipated Traffic Generation

Based on the existing traffic generation rates recorded at the college, it is reasonable to adopt these rates to the additional students estimated at the college (263 students). The resultant traffic generation is provided in Table 4.

Table 4 Anticipated Peak Hour Traffic Generation

	<i>Inbound</i>	<i>Outbound</i>	<i>Total</i>
AM Peak			
Existing Rate / Student	0.32	0.24	0.57
Additional Traffic	84	63	150
PM Peak			
Existing Rate / Student	0.13	0.21	0.34
Additional Traffic	34	55	89

### 7.3 Expected Traffic Volume Growth

To ensure that the operation of the site access point will operate appropriately into the future, it is considered appropriate to include future traffic volume growth.

While low volumes of growth are expected in the area, a growth rate of 3.5% per year will be conservatively applied at Council's request to the existing traffic volumes along Elizabeth Mitchell Drive for the next 10 years.

The average weekday peak hour volumes predicted for the 10 year growth horizon is shown below (through traffic only - excludes school traffic).

Table 5 Existing Traffic Volumes with Growth – Elizabeth Mitchell Drive

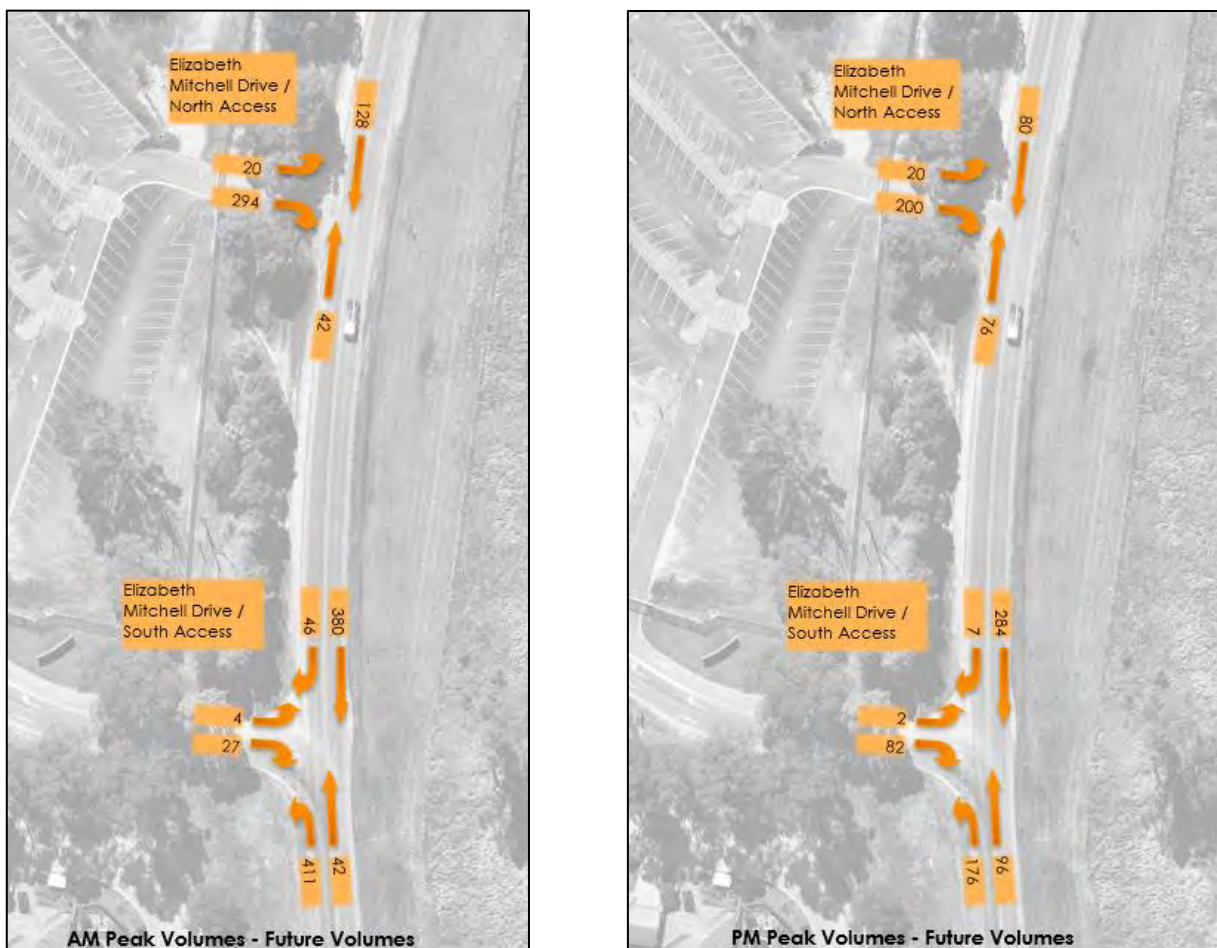
<i>Direction</i>	<i>AM Peak 8:00am – 9:00am</i>	<i>PM Peak 3:00pm – 4:00pm</i>
Northbound	42	96
Southbound	86	84
Total	128	180

## 7.4 Resultant Future Traffic Volumes

Based on the above traffic volumes, and adopting the traffic distribution of the existing traffic surveys, the following traffic volumes are expected at the site access points.

It has been assumed that all light vehicles will enter from the southern access and exit via the northern access, while buses will enter and exit by the southern access. To account for this, a rate of 5% of all vehicle movements will be adopted for vehicles exiting from the southern access.

Figure 7 Resultant Future Traffic Volumes



## 7.5 Traffic Impact

Reviewing the volumes above, it is noted that a maximum of 411 vehicle movements per hour are expected for any one movement in or out of the site, occurring from the south of Elizabeth Mitchell Drive into the southern access during the AM peak period. This is equivalent to 7 vehicle trips every minute or slightly more than 1 additional vehicle per minute compared to the existing operation of the site.

In relation to right turn movements at the southern access, the proposal will generate a maximum of 8 additional movements which will not have a significant impact on the existing operation of the intersection or nearby road network. Of note, there is no need to provide for any additional road infrastructure at the intersection to allow for vehicles turning into and out of the site when the volumes are compared with the existing.



Notwithstanding, it is recommended that localised shoulder widening is provided similar to that of a BAL treatment (basic left turn) to allow for the existing volume of left turning motorists into the site from the south. An example of the BAL entry point treatment is shown in Figure 8.

Figure 8 Rural BAL Turn Treatment



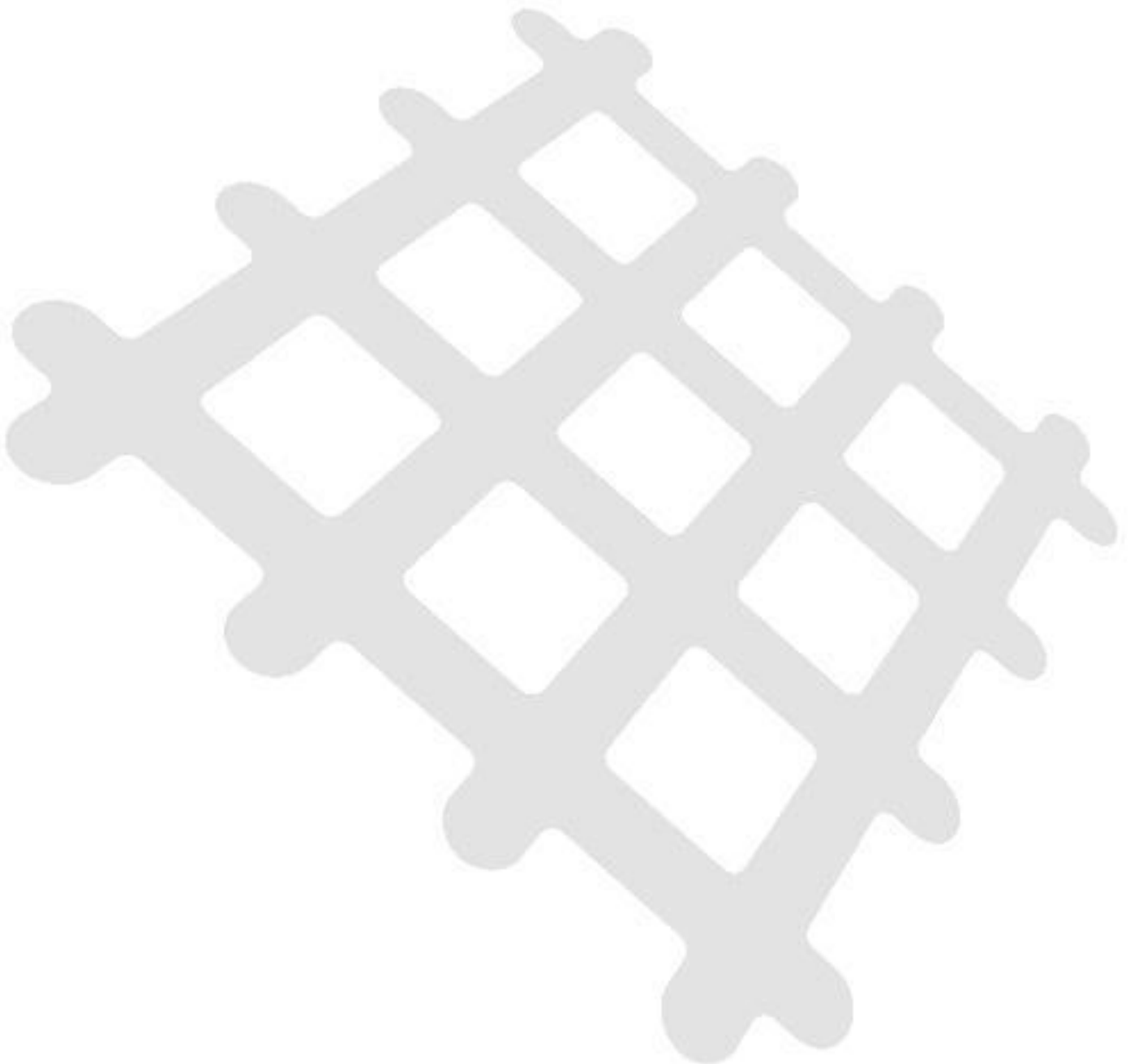
## 8 CONCLUSIONS

Tomahawk Property is seeking approval to construct three new education buildings at Trinity Anglican College, which will provide improved facilities and a new bus turnaround and pick-up/drop-off area. These works will attract limited addition students and staff to the College when compared to the existing enrolment (estimated at 263 students).

Considering the analysis presented above, it is concluded that:

- The access layouts have been designed generally in accordance with the requirements of the Albury DCP 2010 and the Australian Standards and are considered appropriate;
- The retention of the existing pedestrian crossing is considered appropriate;
- The design of the bus turnaround and pick-up/drop-off areas are considered appropriate and will result in an improvement on the existing traffic arrangements;
- The existing kiss and drop facilities will continue to operate under good conditions;
- The provision of car parking exceeds the parking requirements for the site, even after the removal of the informal parking area;
- Existing traffic generation at the college has a significant bias to the south (90%);
- Based on the increase in students, additional traffic will be generated to the road network;
- The level of traffic generated is not expected to result in a noticeable impact to existing operation; and
- Whilst there will be no noticeable impact to the operation of the road network, it is recommended that a basic left turn treatment (BAL) at the southern site access is provided to improve existing movements into the college and to allow for the free flow of northbound traffic.

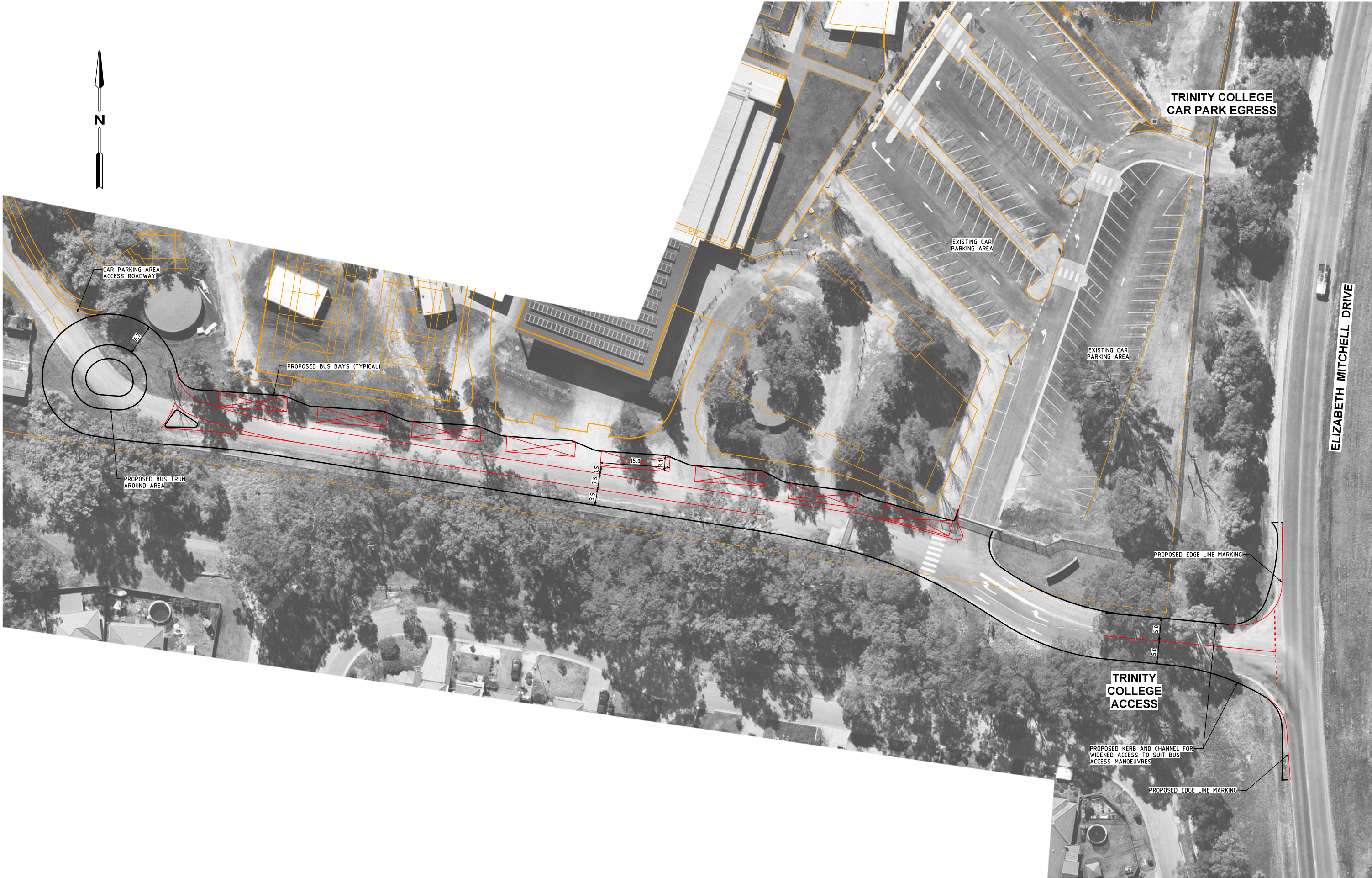
## Appendix A    *Swept Path Diagrams*





CAD File: N:\Projects\2022\220694\Drawings\220694CLP100.dgn

Date Plotted: 17-10-2022 16:34:09





**onemilegrid**  
Wurundjeri Woiwurrung Country  
56 Down Street, Collingwood, VIC 3066  
Email: info@onemilegrid.com.au Web: www.onemilegrid.com.au  
Phone (03) 9939 8250

Scale  
1:750 @ A3

0

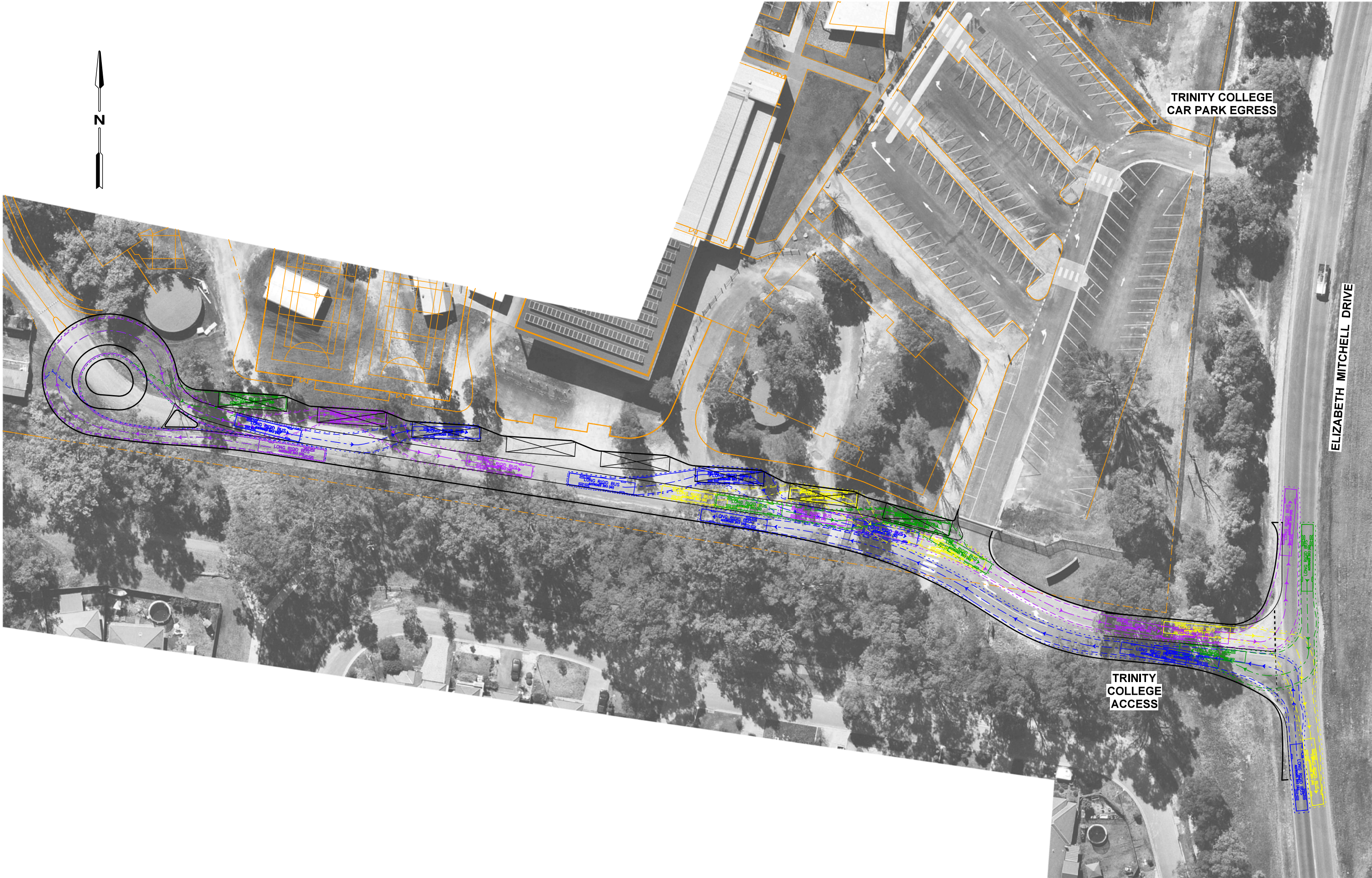
3.75

7.5

15

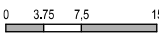
Drawing Title TRINITY ANGLICAN COLLEGE PROPOSED ACCESS TREATMENT CONCEPT LAYOUT PLAN		
Designed TCW	Approved VG	Metway Ref NA
Project Number 220649	Drawing Number CLP100	Revision A





Wurundjeri Woiwurrung Country  
56 Down Street, Collingwood, VIC 3066  
Email: info@onemilegrid.com.au Web: www.onemilegrid.com.au  
Phone (03) 9939 8250

Scale  
1:750 @ A3



Drawing Title  
TRINITY ANGLICAN COLLEGE  
PROPOSED ACCESS TREATMENT  
SWEEP PATH ANALYSIS

Designed TCW	Approved VG	Metway Ref NA
-----------------	----------------	------------------

Project Number 220649	Drawing Number SPA100	Revision A
--------------------------	--------------------------	---------------