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# Traffic Impact Assessment Report

161 Central Road, Nunawading  
(Nunawading Christian College)

Proposed Early Learning Centre

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16/09/2024

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Proposed Early Learning Centre

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### Document Control

Revision	Date	Reference	Prepared By	Approved By
A (Draft)	17/05/24	24-0149	BH	DB
B (Final)	20/05/24	24-0149	BH	DB
C (Revised)	16/09/24	24-0149	BH	DB

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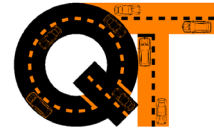
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## Executive Summary

This report assesses the Proposed Early Learning Centre at 161 Central Road, Nunawading (Nunawading Christian College). The following provides an executive summary of the report.

### Proposed Development

The proposal seeks to construct a new ELC building at the north-east corner of the school site. The overall ELC will accommodate 99 children, however, 66 children will be transferred from the existing on-site ELC, resulting in a net increase of 33 children and 4 FTE staff.

### Car Parking

The statutory car parking requirement as specified under Clause 52.06-5 of the Whitehorse Planning Scheme is 7 car spaces.

A number of former car parking spaces are located to the south of the proposed ELC building. These spaces are not used for car parking (locked gate prevents access) and are not tied to any existing planning permits for the school. Whilst the former spaces will be removed as part of the redevelopment, they are not considered a 'loss' of parking from a statutory car parking assessment perspective.

The proposal includes the provision of 9 on-site car spaces, which satisfies the car parking requirements of Clause 52.06-5.

Operationally, the 9 new car parking spaces will be allocated to staff (4 spaces associated with new staff of the proposed expansion and 5 spaces associated with existing staff of the current ELC).

Parent pick-up/drop-off will occur via the existing Laughlin Avenue car park that has extensive pick-up / drop-off facilities that currently cater for the broader school. Given that 5 spaces associated with existing staff will relocate to the new 9 space car park, these spaces will be available for parent pick-up / drop-off parking.

The proposed on-site carpark generally accords with the Design Standards of Clause 52.06-9 of the Planning Scheme and AS2890.1:2004.

### Bicycle Parking

The proposed development does not generate a statutory bicycle parking requirement under Clause 52.34 of the Whitehorse Planning Scheme.

### Traffic Impacts

The proposed ELC is projected to generate in the order of 26 additional vehicle movements in the AM peak and 23 additional vehicle movements in the PM peak. These additional volumes are modest in the context of the existing road network and existing peak periods associated with school pick-up/drop-off.

Overall, we expect post development conditions on the surrounding road network to be similar to the existing conditions.

### Service Vehicles

Waste collection and loading activities are proposed to occur via the existing central waste/loading facilities on Central Road. Waste/deliveries are transferred internally through the



school site to the various on-site buildings and therefore no truck access is required to the new car park via Laughlin Avenue.

### **Summary of Opinions**

Having undertaken all tasks necessary to adequately assess the traffic engineering impacts of the proposed Early Learning Centre at 161 Central Road, Nunawading (Nunawading Christian College), we conclude there are no traffic engineering reasons that would unreasonably preclude the issue of a permit, subject to appropriate conditions.

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## 1 Introduction

The following Traffic Impact Assessment Report (TIAR), reviews the critical traffic engineering matters associated with the Proposed Early Learning Centre at 161 Central Road, Nunawading (Nunawading Christian College).

### 1.1 Revised Report

This revision of the report seeks to address a number of comments made by DTP and Whitehorse City Council as part of initial RFI documents. Table 1 below identifies the relevant sections of this document which address each of the preliminary provided comments.

*Table 1: DTP & Whitehorse Council - RFI Comments*

Comments	Response	Reference
<b>Department of Transport &amp; Planning</b>		
<p><i>An analysis of the proposed removal of the central car parking area and accounting for this loss of spaces in the overall provision assessment.</i></p> <hr/> <p><i>Clear justification of how the proposed car parking provision complies with the requirements of Clause 52.06-5, noting the removal of the central spaces. The current application does not appropriately account for the removal of the central on-site car parking spaces. The existing site plan shows approximately eight car parking spaces accessible via Laughlin Avenue, to be removed as part of the development. The provision of nine new spaces would meet the provision requirements triggered by the additional 33 students, should all existing spaces be retained. However, when accounting for the removal of central parking, the net increase of car parking appears to be one or two spaces only, which may trigger a reduction pursuant to Clause 52.06-3 of the Whitehorse Planning Scheme.</i></p>	<p>The former car parking spaces located on the extension of Laughlin Avenue are no longer used for car parking and have not been available for car parking for a long period of time. Vehicle access to this area is prevented by the existing locked gate. From a planning perspective, these former car parking spaces are not tied to any existing planning permit for the broader school site. In view of the above, the spaces are not considered to be 'removed' or 'lost' from a statutory car parking assessment perspective.</p>	<p>Additional commentary on the former car parking spaces provided in Section 2.2</p>
<p><i>Clarification of existing Laughlin Avenue carpark capacity, currently noted as 53 spaces in the assessment and 23 spaces on the site plan.</i></p>	<p>The existing provision of 53 spaces in the Laughlin Avenue car park is correct.</p>	<p>No Change</p>

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Traffic Impact Assessment Report  
161 Central Road, Nunawading (Nunawading Christian College)



Comments	Response	Reference
<p><i>The Traffic Impact Assessment also notes the proposed on-site car park is to be dedicated to staff car parking, while parent pick up/ drop off parking is to be located within the existing Laughlin Avenue school carpark, which also services the primary and secondary school. The assessment should consider the increased needs and time required for drop off/ collection of pre-school aged children, compared with primary and secondary students, and how this may impact capacity, particularly in peak periods.</i></p> <p><i>The assessment includes data from four spot carparking surveys at the Laughlin Avenue car park, on various days in 2023. However, none of the survey times are within usual school drop off or pick up times and are unlikely to be representative of parking capacity during these busy periods. This should be revised to include more appropriate and relevant survey data</i></p>	<p>The school has confirmed that staff numbers associated the proposed ELC will increase from 8.4 FTE under the existing conditions to 12.2 FTE for the proposed expansion (+4 staff).</p> <p>In view of the above, the proposed 9 space on-site car park will accommodate the 4 additional staff, plus 5 staff associated with the exiting ELC.</p> <p>These existing staff parking demands will relocate from the Laughlin Avenue car park, therefore creating a vacancies for parent pick-up / drop-off parking demands in-line with the Statutory Parking rate.</p>	<p>Proposed staffing level changes summarised in Section 0.</p> <p>Discussion regarding car parking allocation and availability provided in Section 3.2.</p>
Whitehorse City Council		
<p><i>One of the main difficulties in assessing this proposal is that an early learning centre may cater for various age groups which will determine the number of staff in addition to the typical parking provision rate for a school i.e. 0.22 spaces per child. It is understood that young children require a higher number of staff per child.</i></p>	<p>The proposal satisfies the statutory car parking requirement of Clause 52.06 of the Planning Scheme.</p>	<p>No Change</p>
<p><i>The parking surveys do not detail the level of parking demand in the existing car park during the peak periods. Previous site observations found that the demand for parking is high and there is queuing occurring along Laughlin Avenue. This proposal will contribute to the existing traffic congestion along the street and the proposal does not involve any remedial measures.</i></p>	<p>The school has confirmed that staff numbers associated the proposed ELC will increase from 8.4 FTE under the existing conditions to 12.2 FTE for the proposed expansion (+4 staff).</p> <p>In view of the above, the proposed 9 space on-site car park will accommodate the 4 additional staff, plus 5 staff associated with the exiting ELC.</p>	<p>Proposed staffing level changes summarised in Section 0.</p> <p>Discussion regarding car parking allocation and availability provided in Section 3.2.</p>
<p><i>Please determine if there is any possibility of relocating the existing teacher car parking in the existing car</i></p>		

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Comments	Response	Reference
<p><i>park to improve parking availability and reducing congestion along Laughlin Avenue.</i></p>	<p>These existing staff parking demands will relocate from the Laughlin Avenue car park, therefore creating a vacancies for parent pick-up / drop-off parking demands in-line with the Statutory Parking rate.</p>	
<p><i>Whilst the car park layout appears acceptable, the plans have not been dimensioned and no swept paths have been provided (particularly at the Laughlin Avenue entry point) to make an appropriate assessment". It was also noted that the shared area beside the accessible parking space does not have a bollard as required by AS 2890.6 and is therefore not DDA compliant.</i></p>	<p>The car park layout has been assessed against the Design Standards of Clause 52.06-9. The proposed car park complies with the Design Standards and no swept path diagrams are necessary.                      The disabled spaces will be assessed with the regard to AS2890.6 by the building surveyor at the detailed design / construction stage. The proposed design generally achieves the requirements of AS2890.6, noting that a bollard in the shared area can be easily provided.</p>	<p>Assessment of the proposed layout against the 'Design Standards of Clause 52.06-9 is provided in Section 3.4</p>

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## 2 Proposal

The proposal is for the construction of a new early learning centre on the Nunawading Christian College campus at 161 Central Road, Nunawading.

The proposed building will be located at the north-east corner of the campus, with access via Laughlin Avenue. The new facility will replace the existing on-site ELC facilities (66 students) and allow for an additional child care class (33 students).

Post development, the on-site building currently occupied by the existing ELC will be occupied by an after school care program, currently operating from various ad-hoc locations around the school site.

Table 2 outlines the key attributes of the development from a traffic engineering perspective.

*Table 2: Proposed Operation*

Attribute	Proposal
<b>Land Use</b>	
Early Learning Centre (Child Care)	99 child care places: <ul style="list-style-type: none"> <li>66 relocated from the existing on-site ELC</li> <li>33 new places</li> </ul> 13 staff (12.2 FTE): <ul style="list-style-type: none"> <li>9 staff (8.4FTE) relocated from the existing on-site ELC</li> <li>4 new staff</li> </ul>
<b>Car Parking Provision</b>	
Staff Car Park	New car park adjacent to the ELC (9 spaces)
Parent Pick-Up / Drop-Off	Existing Laughlin Avenue car park (53 spaces)
<b>Proposed Operating Hours</b>	
Weekdays	6:30am-6:30pm Mon-Fri
<b>Vehicle Access</b>	
Staff Car Park	Via existing continuation of the Laughlin Avenue carriageway.
Parent Pick-Up / Drop-Off	Via existing crossover to Laughlin Avenue.

The application plans prepared by Kneeler Design Architects (dated 8<sup>th</sup> May, 2024) are attached at Appendix A.

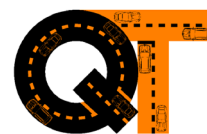
### 2.1 Subject Site

Nunawading Christian College is located at 161 Central Road, Nunawading on the north side of the road between Cromwell Court and Brenda Street (Melway Reference 48 D10).

Table 3 outlines the key existing features of the development site.

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*Table 3: Existing Details of Subject Site*

Site Feature	Detail
<b>Municipality</b>	
Municipality	Whitehorse City Council
<b>Zoning &amp; Overlays</b>	
Zoning	Neighbourhood Residential Zone – Schedule 1 (NRZ1)
<b>Critical Dimensions</b>	
Total Site Area	8.184ha
<b>Existing Use</b>	
161 Central Road	Nunawading Christian College
<b>Existing On-Site Car Parking</b>	
Laughlin Avenue Car Park	53 spaces
Central Road	Various car parking facilities
<b>On-Street Car Parking</b>	
Laughlin Avenue	North Side: No Stopping 8am-9am & 3pm-4pm School Days, 2P 9am-3pm Mon-Fri & 9am-3pm Sat. South Side: 2P 9am-6pm Mon-Fri
<b>Nearby Land Use</b>	
Within 100m	Primarily residential to the east along Laughlin Avenue, railway line to the north.

A photograph of the locality plan and aerial photograph of the subject site are provided in Figure 1 and Figure 2 below.

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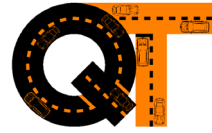


Figure 1: Location Map (Source: Melway)

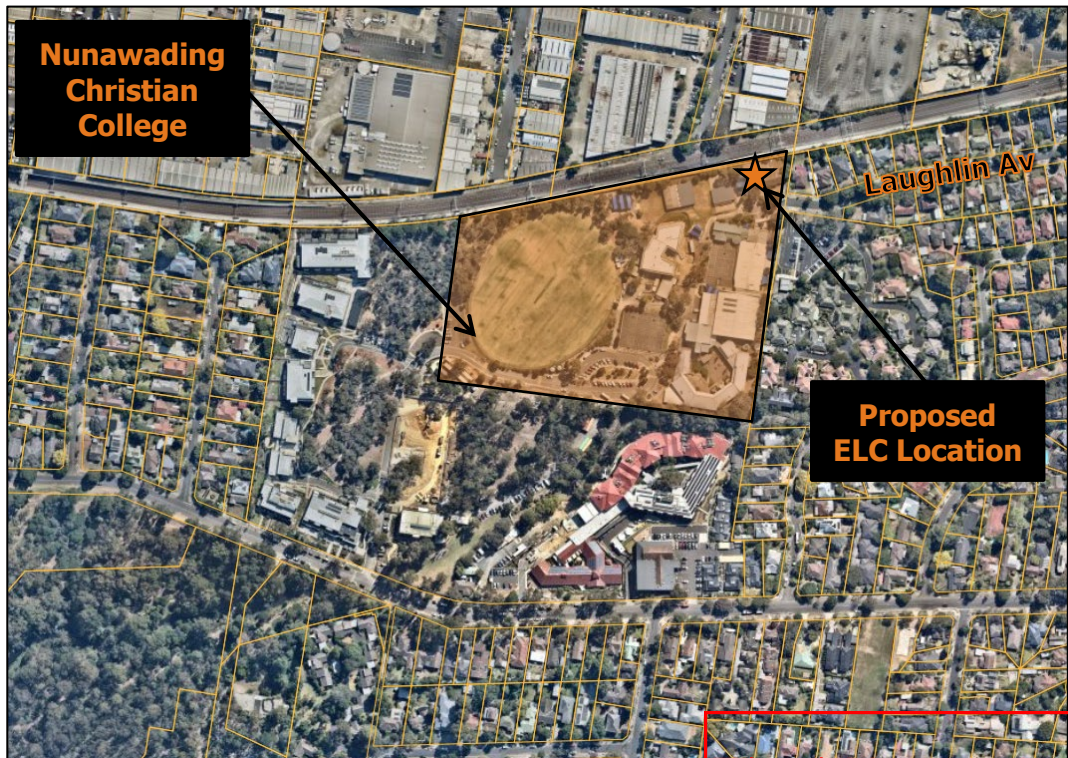


Figure 2: Aerial Photograph (source: Nearmap)

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## 2.2 Former Car Parking Spaces

To the south of the proposed ELC building, there are a number of redundant car parking spaces that previously took access to the extension of Laughlin Avenue.

These spaces were formerly used for car parking, however, under the current configuration these spaces have not been used for parking with a locked gate preventing vehicle access.

From a planning perspective, we understand that these spaces are not associated with any existing planning permits for the school.

In view of the above, the redevelopment of this area does not trigger a 'removal' or 'loss' of existing parking spaces under Clause 52.06 of the Planning Scheme.

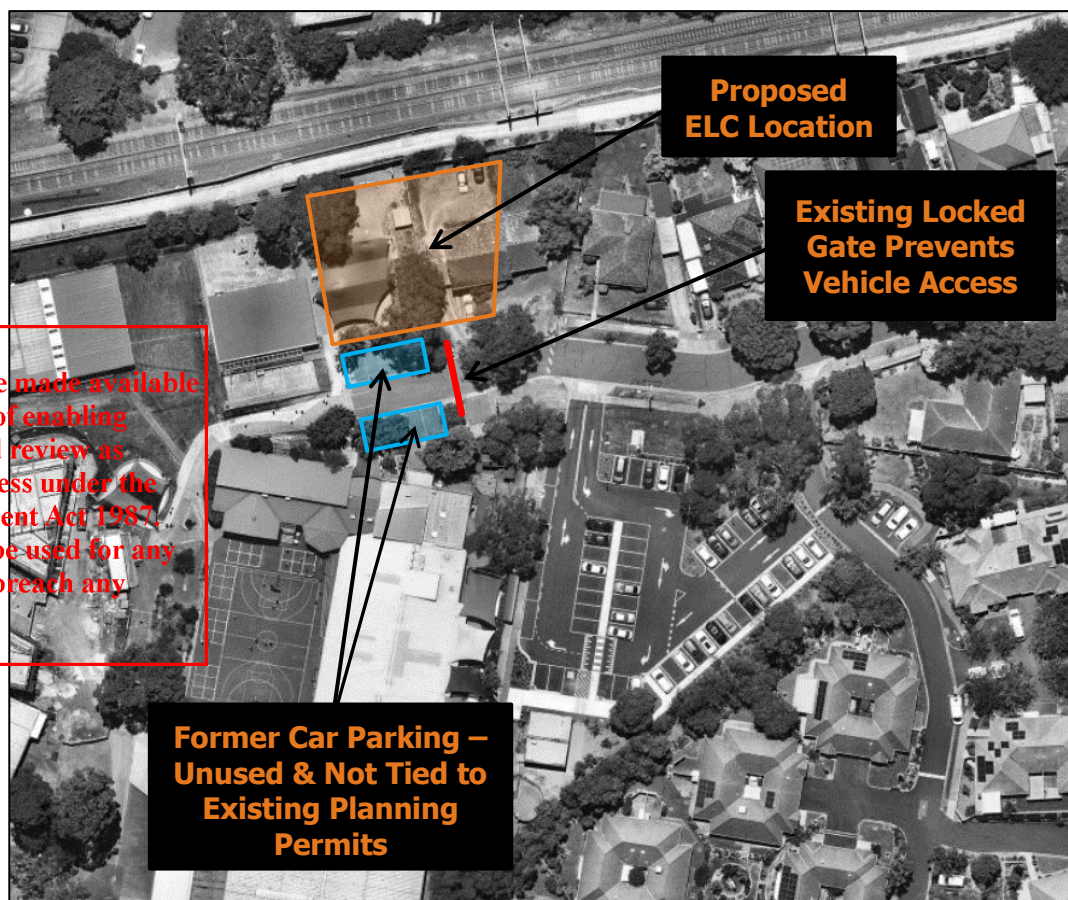


Figure 3: Former Car Parking (source: Nearmap)

## 2.3 Road Network

### Laughlin Avenue

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Laughlin Avenue is a local road that extends in an east-west direction between Springvale Road in the east and the Nunawading Christian College campus in the west.

In the vicinity of the site, Laughlin Avenue is approximately 7.8m wide and generally operates with a single lane of traffic and parallel parking on both sides of the road. During school pick-up / drop-off times, a 'No Stopping' restriction



applies to the north side of Laughlin Avenue which allows for a lane of traffic in each direction and parallel parking on the south side of the road.

The eastern portion of Laughlin Avenue is subject to a 50km/h speed zoning, whilst the western portion of Laughlin Avenue is subject to a 40km/h speed zoning.

Photographs of Laughlin Avenue are provided in Figure 4 and Figure 5 below.

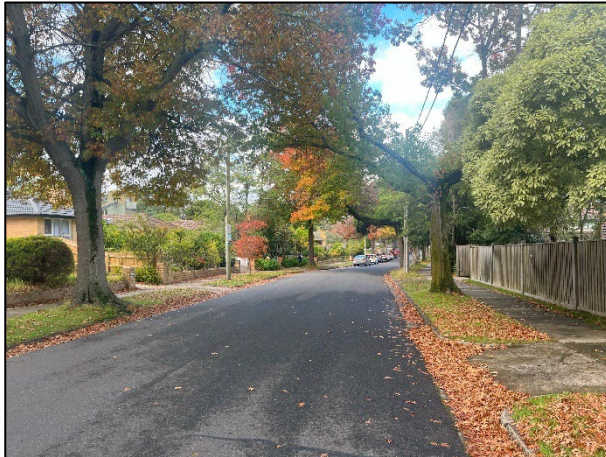


Figure 4: *Laughlin Avenue (View East)*



Figure 5: *Laughlin Avenue (View West)*

## 2.4 Sustainable Transport Infrastructure

### 2.4.1 Public Transport

The site has public transport access with rail services (Lilydale and Belgrave Lines) operating via Nunawading Railway Station. Nunawading Railway Station is located approximately 450m walking distance east of the subject site.

Additionally, bus services operate along Springvale Road (approximately 500m walking distance east of the subject site) including the following services:

- SMARTBus Route 902 – Chelsea Station to Airport West Shopping Centre
- Route 273 – The Pines Shopping Centre to Nunawading Station
- Route 735 – Box Hill Station to Nunawading Station

The public transport services in the vicinity of the subject site provides quality connections to the Melbourne CBD and nearby activity centres in eastern Melbourne.

These services provide an alternative to car-based travel for staff of the proposed Early Learning Centre.

Figure 6 below outlines the nearby public transport services.

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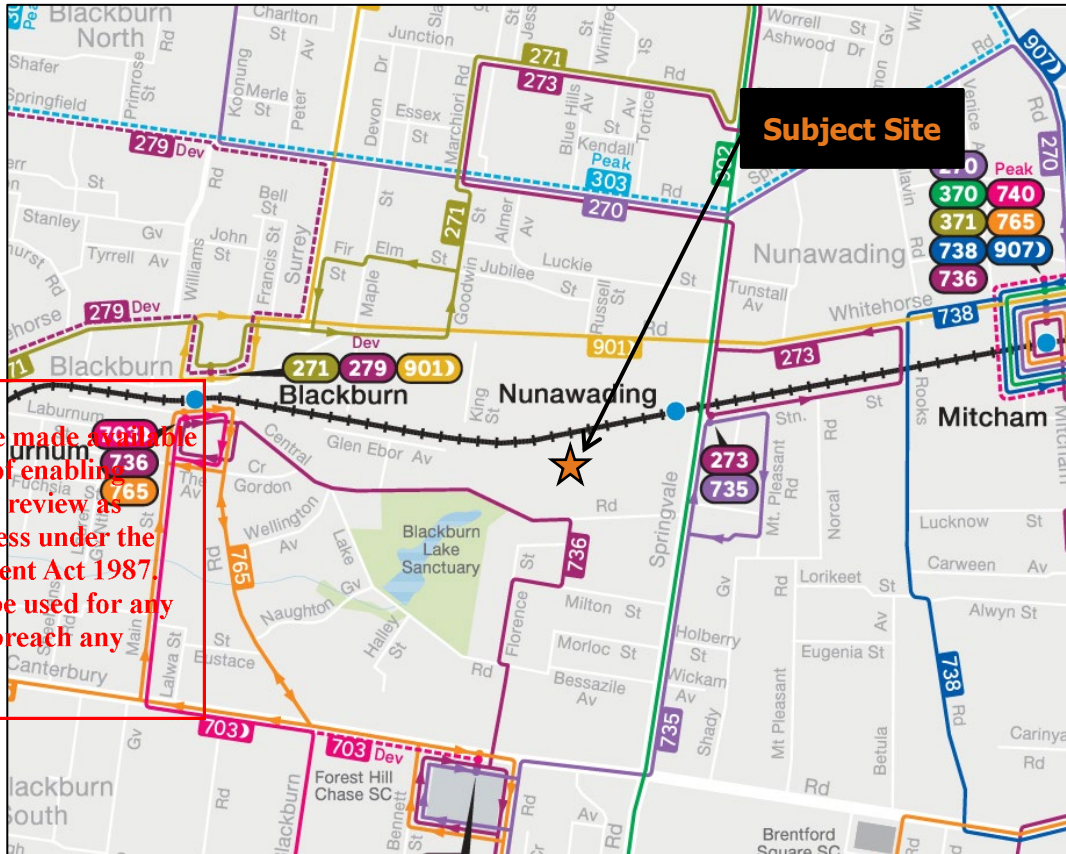


Figure 6: Public Transport Local Area Map (Source: [www.ptv.com.au](http://www.ptv.com.au))

## 2.4.2 Walking & Cycling

The site is well located with respect to accessing nearby land uses by either walking or cycling.

Table 4 outlines distances to nearby facilities and how long they would take to access based on a walking speed of 1.4m/s (5km/h) and a cycling speed of 15km/h (4.2m/s).

Table 4: Distance to Nearby Infrastructure & Facilities – Walk/Cycle Times

Nearby Infrastructure	Distance (approx.)	Walk Time	Cycle Time
<b>Transport Nodes</b>			
Rail Services (Nunawading)	450m	5-6 min	1-2 min
Bus Routes (Springvale Road)	500m	5-6 min	1-2 min
<b>Land Uses</b>			
Station Street Shops	575m	6-7 min	2-3 min
<b>Open Space/Reserves</b>			
Blackburn Lake Sanctuary	200m	2-3 min	<1 min

Footpaths are provided on both sides of the local street network in the vicinity of Nunawading Christian College. This network provides comfortable pedestrian



conditions in all directions. A regional shared path is located within the adjacent rail reserve, that can be accessed via Nunawading Railway Station.

Accordingly, the site is located within an area that is conveniently accessible via active transport modes.

## 2.5 Car Parking Surveys

A series of sport parking occupancy survey have been compiled for the existing Laughlin Avenue school car park from recent aerial photographs (Nearmap).

A total of 4 data points are available for weekdays between April 2023 and February 2024. The aerial images were captured between 10:30am and 12:45pm, representing typical conditions outside of peak school pick-up / drop-off periods.

The surveyed area is shown at Figure 7, which captures the existing on-site car parking on Laughlin Avenue.



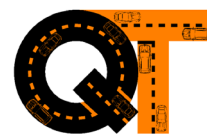
Figure 7: Car Parking Survey Area (Source: Nearmap)

A summary of parking supply and occupancy results is provided in Table 5 below.

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*Table 5: Spot Car Parking Occupancy Surveys - Results*

Day / Date		Capacity	Demand	Spaces Available
<b>Laughlin Avenue Car Park</b>				
Thursday 15/2/24 – 10:30am	Staff	13	13 (100%)	0
	P2min	5	0 (0%)	5
	Disabled	1	0 (0%)	1
	Unrestricted	34	30 (88%)	4
	<b>TOTAL</b>	<b>53</b>	<b>43 (81%)</b>	<b>10</b>
Friday 10/11/23 – 12:45pm	Staff	13	11 (85%)	2
	P2min	5	0 (0%)	5
	Disabled	1	0 (0%)	1
	Unrestricted	34	17 (50%)	17
	<b>TOTAL</b>	<b>53</b>	<b>28 (53%)</b>	<b>25</b>
Monday 4/9/23 – 11:30am	Staff	13	13 (100%)	0
	P2min	5	0 (0%)	5
	Disabled	1	0 (0%)	1
	Unrestricted	34	24 (71%)	10
	<b>TOTAL</b>	<b>53</b>	<b>37 (70%)</b>	<b>16</b>
Monday 24/4/23 – 11:00am	Staff	13	12 (92%)	1
	P2min	5	0 (0%)	5
	Disabled	1	0 (0%)	1
	Unrestricted	34	16 (47%)	18
	<b>TOTAL</b>	<b>53</b>	<b>28 (53%)</b>	<b>25</b>

Overall parking demands varied between 53%-81%, with overall parking availability varying between 10-25 spaces.

The spaces available for parents (not including specific staff parking) had parking availability varying between 10-23 spaces.

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### 3 Car Parking Assessment

#### 3.1 Statutory Car Parking

Clause 52.06-5 of the Whitehorse Planning Scheme prescribes the car parking requirements for the proposed use.

Under Clause 74 the proposed land is included under 'Child Care Centre'.

The site is located within the designated PPTN area and therefore Column B rates apply.

The following commentary is provided in Clause 52.06 in relation to the expansion of an existing use:

*"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."*

In view of the above, given that a 66 place ELC currently operates from the subject site, the proposed 99 place ELC represents a net increase of 33 children.

As discussed previously in Section 2.2, a number of former car parking spaces will be redeveloped as part of the proposal. Given that these spaces are not used and are not linked to previous planning permits for the school site, the spaces are not considered to be 'removed' or 'lost' from a statutory car parking perspective.

Table 6 provides an assessment of the car parking provision against the statutory requirement for the proposed development.

*Table 6: Statutory Car Parking Assessment*

Use	Size/No.	Statutory Car Parking Rate (Column B)	Requirement <sup>(1)</sup>	Provision
Child Care Centre	33 place increase	0.22 car spaces to each child	7	9
<b>TOTAL</b>			<b>7</b>	<b>9</b>

**Note 1:** Non-whole numbers rounded down to the nearest whole number as specified by Clause 52.06-5.

Accordingly, the statutory car parking requirement for the proposed ELC is 7 car parking spaces.

As a total of 9 additional car parking spaces are proposed on-site, the proposed development satisfies the statutory car parking requirement.

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## 3.2 Operation / Management of Parking

The 9 additional on-site car parking spaces adjacent to the new ELC building are proposed to be allocated to staff.

The proposed expansion will result in an increase of 4 FTE staff from 9 FTE under the existing conditions to 13 FTE under the proposed conditions. On this basis, the proposed 9 space car park will accommodate the 4 additional staff spaces associated with the proposed expansion, plus 5 spaces associated with existing staff that are currently occurring in the Laughlin Avenue car park.

Parent pick-up / drop-off will continue to occur via the Laughlin Avenue car park, which includes dedicated pick-up / drop-off spaces along with disabled and conventional spaces. As per the discussion above, 5 existing staff parking spaces will relocate from the Laughlin Avenue Car Park to the proposed 9 space staff car park, creating 5 additional vacancies when compared to the existing conditions.

Peak periods for pick-up / drop-off at child care centres generally occur between 7am-9am and 3pm-6pm. Outside of the peak school pick-up / drop-off periods (8:45-9:00am & 3:15-3:30pm), the car park will have vacancies similar to the spot parking surveys presented in Section 2.5 (10-25 spaces available).

During the school pick-up / drop-off periods, the existing conditions experience a short period of high parking demands and general traffic congestion (similar to all schools). We would expect that parents of children associated with the proposed ELC would endeavour to avoid these time periods if possible. We note that some parents may choose to arrive during the peak periods, however, the additional parking demands and traffic volumes would be insignificant when compared to existing school demands/operation.

## 3.3 Disabled Car Parking

Accessible (disabled) car parking is required to be provided at a rate of '*1 space for every 100 car parking spaces or part thereof*' under the National Construction Code (NCC) for education establishments.

Given that 9 car parking spaces are proposed, the development proposal triggers a requirement for 1 disabled parking space.

A single disabled car parking space is proposed at the southern end of the proposed on-site car parking, satisfying the disabled parking requirements of the NCC.

Further discussion regarding the design of disabled parking is provided in Section 3.4 below.

## 3.4 Car Park Layout & Design

The proposal includes the construction of a 9 space on-site carpark, adjacent to the proposed ELC building.

The layout includes a single access aisle with 90 degree parking spaces on one side.

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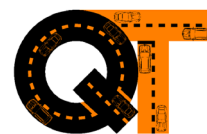
The proposed car park layout has been assessed against the Design Standards identified in Clause 52.06 of the Whitehorse Planning Scheme, as shown in Table 6 below.

*Table 7: Clause 52.06-9 Design Standards Assessment*

Design Standard	Assessment / Comments
<b>Design Standard 1 - Accessways</b>	
<i>Be at least 3 metres wide</i>	<b><u>Compliant</u></b>  The internal accessways is 6.4m wide, which comfortably exceeds the minimum requirement of 3m.
<i>Have an internal radius of at least 4 metres at changes of direction or intersection or be at least 4.2 metres wide.</i>	<b><u>Compliant</u></b>  The internal accessway is greater than 4.2m wide, negating the requirement for an internal radius at changes of direction.
<i>Allow vehicles parked in the last space of a dead-end accessway in public car parks to exit in a forward direction with one manoeuvre</i>	<b><u>Compliant</u></b>  Whilst the car park will be private and allocated to staff (therefore this requirement does not technically apply) the layout includes a blind aisle extension to allow forwards exit in a single movement from the end space.
<i>Provide at least 2.1 metres headroom beneath overhead obstructions, calculated for a vehicle with a wheel base of 2.8 metres</i>	<b><u>Compliant</u></b>  No structures proposed over the car park.
<i>If the accessway serves four or more car spaces or connects to a road in a Transport Zone 2 or Transport Zone 3, the accessway must be designed so that cars can exit the site in a forward direction</i>	<b><u>Compliant</u></b>  Vehicles can enter and exit all car parking spaces in a forwards direction.  It is noted that the car park is configured with a single 'blind aisle' arrangement. Given that all car parking spaces within the car park will be allocated to staff (familiar users) a turnaround provision is not necessary.
<i>Provide a passing area at the entrance at least 6.1 metres wide and 7 metres long if the accessway serves ten or more car parking spaces and is either more than 50 metres long or connects to a road in a Transport Zone 2 or Transport Zone 3.</i>	<b><u>Not Applicable</u></b>  The car park is less than 10 spaces, less than 50m long and connects to a local road.

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Design Standard	Assessment / Comments
<p><i>Have a corner splay or area at least 50 per cent clear of visual obstructions extending at least 2 metres along the frontage road from the edge of an exit lane and 2.5 metres along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road.</i></p>	<p><b>Not Applicable</b></p> <p>The proposed car park takes access from the existing accessway that operates as a continuation of Laughlin Avenue. On this basis, no footpath crosses the accessway and therefore this requirement is not applicable.</p>
<p><i>If an accessway to four or more car parking spaces is from land in a Transport Zone 2 or Transport Zone 3, the access to the car spaces must be at least 6 metres from the road carriageway</i></p>	<p><b>Compliant</b></p> <p>All spaces are further than 6m from the road carriageway.</p>
<p><i>If entry to the car space is from a road, the width of the accessway may include the road</i></p>	<p><b>Compliant</b></p> <p>All internal car parking spaces are accessed via the internal accessway, which has been provided at a sufficient width to accommodate vehicle maneuvering.</p>
Design Standard 2 – Car Parking Spaces	
<p><i>Car parking spaces and accessways must have the minimum dimensions as outlined in Table 2.</i></p>	<p><b>Compliant</b></p> <p>The proposed parking spaces generally meet or exceed the minimum dimensional requirements of Table 2.</p> <p>Proposed dimensions are generally as follows:</p> <ul style="list-style-type: none"> <li>• Conventional Spaces – 2.6m wide, 4.9m long, 6.4m wide access aisle.</li> <li>• Disabled Space – 2.4m wide, 5.4m long, 6.4m access aisle.</li> </ul>
<p><i>A wall, fence, column, tree, tree guard or any other structure that abuts a car space must not encroach into the area marked 'clearance required' on Diagram 1, other than:</i></p> <ul style="list-style-type: none"> <li>• A column, tree or tree guard, which may project into a space if it is within the area marked 'tree or column permitted' on Diagram 1.</li> <li>• A structure, which may project into the space if it is at least 2.1 metres above the space.</li> </ul>	<p><b>Compliant</b></p> <p>No obstructions adjacent to the proposed car parking spaces.</p>
<p><i>Where parking spaces are provided in tandem (one space behind the other) an additional 500 mm in length must be provided between each space</i></p>	<p><b>Not Applicable</b></p> <p>No tandem parking proposed.</p>

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Design Standard	Assessment / Comments
<p><i>Disabled car parking spaces must be designed in accordance with Australian Standard AS2890.6-2009 (disabled) and the Building Code of Australia. Disabled car parking spaces may encroach into an accessway width specified in Table 2 by 500mm</i></p>	<p><b>Compliant</b></p> <p>The proposal seeks to provide 1 x disabled spaces with dimensions of 2.4m wide x 5.4m long with an adjacent shared area of the same dimensions.</p> <p>No obstructions are located over the spaces and therefore a minimum headroom of 2.5m is achieved.</p>
<p><b>Design Standard 3 – Gradients</b></p>	
<p><i>Accessway grades must not be steeper than 1:10 (10 per cent) within 5 metres of the frontage to ensure safety for pedestrians and vehicles. The design must have regard to the wheelbase of the vehicle being designed for; pedestrian and vehicular traffic volumes; the nature of the car park; and the slope and configuration of the vehicle crossover at the site frontage. This does not apply to accessways serving three dwellings or less.</i></p>	<p><b>Compliant</b></p> <p>The site includes minor grades and the detailed design will be able to achieve maximum grades of 1:10 for the first 5m into the site from the property boundary.</p> <p>We note that this requirement principally relates to provide adequate sight lines to pedestrians on footpaths. Given the configuration of the proposed access (continuation of Laughlin Avenue, without a footpath crossing the property boundary) this requirement is largely redundant.</p>
<p><i>Ramps (except within 5 metres of the frontage) must have the maximum grades as outlined in Table 3 and be designed for vehicles travelling in a forward direction.</i></p>	<p><b>Compliant</b></p> <p>The maximum grade within the on-site car park will be limited to 1:16-1:20, to comply with requirements of AS2890.1:2004 for grades parallel and perpendicular to parking spaces.</p> <p>Furthermore, the disabled space is required to maintain grades within 1:33-1:40 in all directions.</p>
<p><i>Where the difference in grade between two sections of ramp or floor is greater than 1:8 (12.5 per cent) for a summit grade change, or greater than 1:6.7 (15 per cent) for a sag grade change, the ramp must include a transition section of at least 2 metres to prevent vehicles scraping or bottoming.</i></p>	<p><b>Compliant</b></p> <p>No significant grade changes proposed, all grades will be well within the maximum allowable change of grade of 1:8 (12.5%).</p>

In view of the above, the proposed on-site car park design is generally in accordance with Clause 52.06 of the Planning Scheme and AS2890.1:2004.

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## 4 Bicycle Parking Assessment

### 4.1 Statutory Bicycle Parking

Clause 52.34 prescribes the number of bicycle spaces to be provided for the proposed development.

The 'child care centre' land use is not listed in Table 1 to Clause 52.34-5 and therefore the proposed development does not generate a statutory requirement for bicycle parking.

## 5 Traffic Assessment

### 5.1 Traffic Generation

Child care centres service the local community who typically live or work in the nearby area.

Child care centres operate differently to traditional education facilities such as kindergartens and schools as they do not have specified set-down and pick-up times. In this regard, parents will arrive and depart the site across the morning and afternoon periods which extend across several hours. This is in contrast to traditional education centres where set start and finish times will generate higher traffic levels within a relatively short duration.

Core staff members will typically arrive before parents set-down their children and depart when all children have been collected. Staff numbers will also tend to peak later in the morning as children numbers increase closer to the centre's capacity, and conversely, reduce as children numbers decrease in the afternoon.

Additionally, child care centres typically service people working or living in the nearby area and accordingly, trips to/from the site typically are not new trips but rather a deviation of an existing trips from the broader road network.

The following rates apply to 'Child Care Centre' use (defined as long day care in RTA Guide (now RMS)):

- AM Period (7am-9am) – 0.8 vehicle movements per child.
- PM Peak (2:30-6pm) – 0.7 vehicle movements per child.

These rates are considered appropriate as a guide to assessing the traffic generated by a child care centre.

Table 8 below outlines the daily and peak hour traffic generation of the proposed development. The assessment considers the net increase in children (33 children), given that the existing on-site ELC facilities already accommodate 66 children on-site.

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*Table 8: Traffic Generation Assessment*

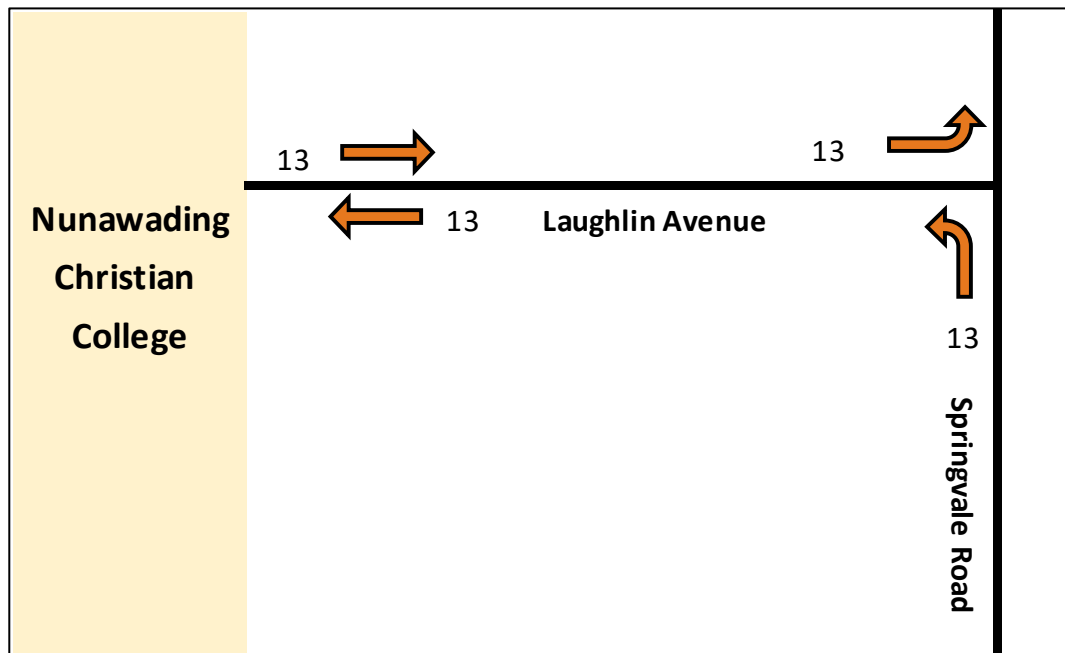
Use	No.	Traffic Generation Rate <sup>(1)</sup>	Additional Peak Hour Trips
AM Peak Hour	+ 33	0.8 vte per child/peak hour	26
PM Peak Hour	Children	0.7 vte per child/peak hour	23

## 5.2 Traffic Distribution

Peak hour trips associated with childcare centres are typically short term in duration (5-10 minutes), associated with picking up or dropping off children. On this basis, volumes are expected to be split 50% 'In' and 50% 'Out' during the peak periods.

The subject site is located at the western end of Laughlin Avenue, with all access to the external road network via Springvale Road at the eastern end of Laughlin Avenue. This intersection of Springvale Road / Laughlin Avenue operates left in / left out only, with U-turn provisions to the north and south.

A summary of the anticipated additional peak hour turning movements based on the above assumptions is presented in Figure 8 and Figure 9 below.



*Figure 8: Additional Peak Hour Turning Movements – AM Peak*

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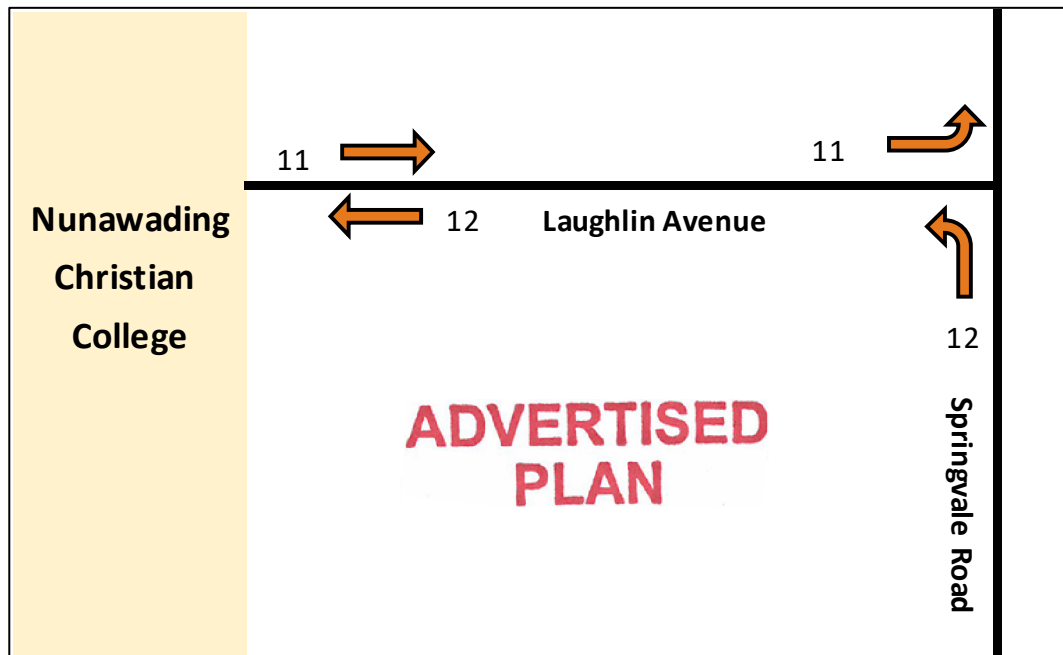


Figure 9: Additional Peak Hour Turning Movements – PM Peak

### 5.3 Traffic Impacts

The expected traffic generation is modest in the context of the existing conditions, particularly the peak events that occur during school pick-up / drop-off times.

From a daily traffic volumes perspective, the additional volumes would only contribute to a marginal increase in daily traffic volumes. The increase in volume would be imperceptible to the adjacent residential properties.

At the intersection of Springvale Road / Laughlin Avenue, movements are limited to left in / left out only which provides for limited capacity constraints. U-turn movements are facilitated immediately north and south of the intersection, providing vehicles access in all directions. The existing conditions include 'Keep Clear' line marking across all Springvale Road lanes to facilitate exit movements from Laughlin Avenue.

Overall, the additional traffic volumes are minor and are likely to occur outside of the existing school peak periods. We expect post development conditions on the surrounding road network to be similar to the existing conditions.

## 6 Waste Collection & Loading

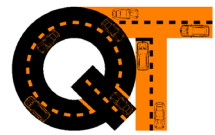
The school currently operates a central loading and waste collection facility along the Central Road frontage. All waste and deliveries are internally transferred between the various school buildings to the centralised loading/waste area.

It is proposed to continue this operation for the new ELC.

In view of the above, no loading access is required to the proposed car park via Laughlin Avenue.

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## 7 Conclusions

Having undertaken a detailed traffic engineering assessment of the proposal, the following conclusions are reached in relation to the proposed Early Learning Centre at 161 Central Road, Nunawading (Nunawading Christian College):

1. The proposal seeks to construct a new ELC building at the north-east corner of the school site. The overall ELC will accommodate 99 children, however, 66 children will be transferred from the existing on-site ELC, resulting in a net increase of 33 children and 4 FTE staff.
2. The statutory car parking requirement as specified under Clause 52.06-5 of the Whitehorse Planning Scheme is 7 car spaces.
3. A number of former car parking spaces are located to the south of the proposed ELC building. These spaces are not used for car parking (locked gate prevents access) and are not tied to any existing planning permits for the school. Whilst the former spaces will be removed as part of the redevelopment, they are not considered a 'loss' of parking from a statutory car parking assessment perspective.
4. The proposal includes the provision of 9 on-site car spaces, which satisfies the car parking requirements of Clause 52.06-5.
5. Operationally, the 9 new car parking spaces will be allocated to staff (4 spaces associated with new staff of the proposed expansion and 5 spaces associated with existing staff of the current ELC).
6. Parent pick-up/drop-off will occur via the existing Laughlin Avenue car park that has extensive pick-up / drop-off facilities that currently cater for the broader school. Given that 5 spaces associated with existing staff will relocate to the new 9 space car park, these spaces will be available for parent pick-up / drop-off parking.
7. The proposed on-site carpark generally accords with the Design Standards of Clause 52.06-9 of the Planning Scheme and AS2890.1:2004.
8. The proposed development does not generate a statutory bicycle parking requirement under Clause 52.34 of the Whitehorse Planning Scheme.
9. The proposed ELC is projected to generate in the order of 26 additional vehicle movements in the AM peak and 23 additional vehicle movements in the PM peak. These additional volumes are modest in the context of the existing road network and existing peak periods associated with school pick-up/drop-off. Overall, we expect post development conditions on the surrounding road network to be similar to the existing conditions.
10. Waste collection and loading activities are proposed to occur via the existing central waste / loading facilities on Central Road. Waste/deliveries are transferred internally through the school site to the various on-site buildings and therefore no truck access is required to the new car park via Laughlin Avenue.



Having undertaken all tasks necessary to adequately assess the traffic engineering impacts of the proposed Early Learning Centre at 161 Central Road, Nunawading (Nunawading Christian College), we conclude there are no traffic engineering reasons that would unreasonably preclude the issue of a permit, subject to appropriate conditions.

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# Appendix A

## Development Application Plans

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