Watson Young Architects

Caroline Chisolm Catholic College VET & STEM Building

TRAFFIC IMPACT ASSESSMENT

WGA230679

WGA230679-RP-TT-0001_B

1 September 2023

ADVERTISED PLAN

Revision History

REV	DATE	ISSUE	ORIGINATOR	CHECKER	APPROVER
A	04/08/2023	DRAFT	James Aloi	Eric Kydd	James Brownlie
B	01/09/2023	Final	James Aloi	Eric Kydd	James Brownlie

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1 DEVELOPMENT PROPOSAL

1.1 Engagement

WGA has been engaged by Watson Young Architects to prepare a Traffic Impact Assessment (TIA) to accompany a town planning application for the proposed Vocational Education & Training (VET) & Science, Technology, Engineering & Mathematical (STEM) Building located at Caroline Chisolm Catholic College (CCCC) site.

1.2 Land Use

CCCC is a secondary school for Years 7 – 12 students that extends across three (3) separate campuses. Year 7 – 9 Boys are located at the St John's Campus and Year 10 – 12 Co-Education students are located at the Sacred Heart Campus, both of which are located at the main school site at 204 Churchill Avenue, Braybrook. Year 7 – 9 Girls are located at the Christ the King Campus at 65 Churchill Avenue, Braybrook approximately 1km east of the main campus and the location of the proposed VET & STEM Building.

The proposed VET & STEM Building is proposed at the main campus located in the north east corner of the site.

1.3 Development Proposal

The VET & STEM Building, shown in Figure 1.1, is proposed to be located within the school site at the area between the swimming centre and the multipurpose courts that is currently utilised as an informal 45-space gravel car park and the existing Trade Training building, to be absorbed into the new build.

The VET & STEM Building will be a two (2) storey education centre that will provide a number of different types of facilities for the existing school population of staff and students, including workshops and student work areas, flexible learning spaces and classrooms, kitchen, cooking and servery rooms, storage, staff offices and two (2) large exam spaces that can be combined into a single space.

No external use is proposed for the VET & STEM building. It is understood that the abovementioned spaces will operate ancillary to existing school activities with no additional students or staff proposed.

Figure 1.1: Extract: Proposed Development – Ground Floor (prepared by Watson Young)

1.4 Car Parking

The VET & STEM Building will provide a basement car park with two-way vehicle access from Darnley Street via the existing crossover (to be widened) to the gravel car park. A provision of 145 car parking spaces (inclusive of two (2) accessible parking spaces) is proposed, as shown in Figure 1.2, to increase and formalise informal car parking opportunities that are currently available on-site and detailed in Section 2.

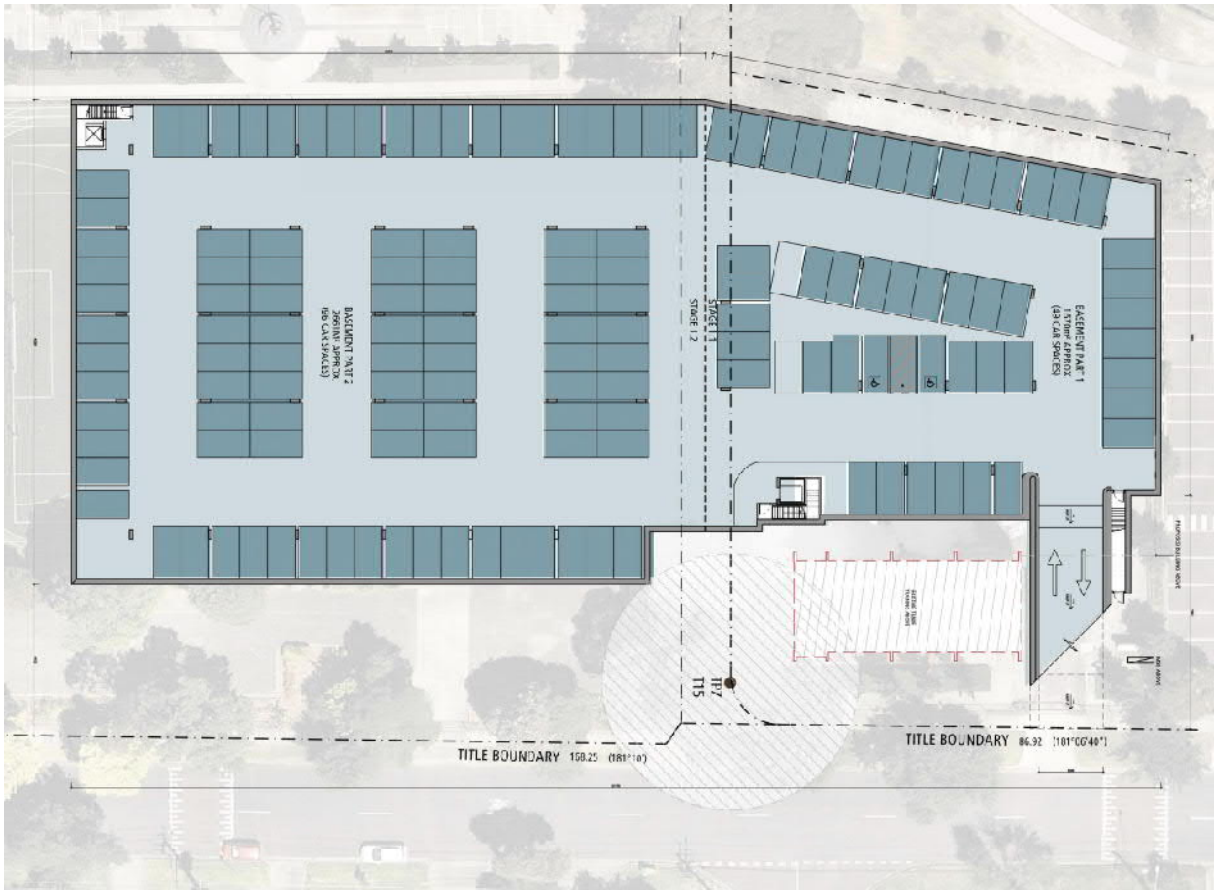

Figure 1.2: Extract: Proposed Development – Basement Car Park (prepared by Watson Young)

1.5 Vehicular Access

A two-way ramp is proposed to provide access to the basement car park from Darnley Street.

The existing crossover to Darnley Street is proposed to be widened to 6m to accommodate simultaneous ingress and egress movements for vehicles accessing the basement car park.

1.6 Pedestrian Facilities

Ground floor pedestrian access is proposed to be provided immediately from Darnley Street to the south of the site and via the external and internal formal pedestrian footpath that runs adjacent the site's eastern and southern frontages. A lift and staircase is provided generally central to the basement car park which provides access to pedestrians from the car park to the ground floor foyer.

1.7 Bicycle Facilities

No additional bicycle parking spaces or end of trip facilities are provided as part of the VET & STEM Building.

1.8 Loading & Waste Collection

A loading zone is proposed to the south-east of the VET & STEM Building in the northern section of the existing Darnley Street car park where school bus parking is currently undertaken, with access via the northernmost crossover. Existing access is afforded for the 10.2m coach utilised by the school. It is noted that existing access to the 10.2m coach is unchanged as part of the proposal.

It is expected that loading activities will be undertaken in this area, with manual handling to be completed from the loading zone and north across the proposed footpath.

It is expected that waste collection will be completed in line with the existing waste management storage and collection arrangements of the school.

2 BACKGROUND DOCUMENTATION

2.1 Planning History

2.1.1 2006 Traffic & Parking Impact Assessment

John Piper Traffic Pty Ltd prepared a Traffic & Parking Impact Assessment report dated March 2006 for the proposed performing arts centre at CCCC, which deemed the development satisfactory from a traffic and parking perspective that complied with the relevant standards and would not impact on the safety or operation of the surrounding road network.

The proposed performing arts centre, incorporating a stage and class rooms, had a building floor area of approximately 1,645 sq m and provided 856 fixed seats and 302 removable seats (total of 1,158 seats). Informal car parking in the order of 230 spaces was also proposed, in addition to the existing 78 car parking spaces available in the three (3) on-site CCCC car parks (total of 308 spaces).

A car parking occupancy survey of the on and off-street car parking and road network within an approximate 300m radius (3-minute walk to the school) was carried out between 6:00pm – 9:00pm on Friday 10 March 2006. It was found that of 358 car parking spaces (inclusive of 241 on-street car parking spaces; 114 with commercial frontage and 127 with residential frontage) there was a minimum total on and off-street availability of 333 spaces available, inclusive of 109 commercial fronting spaces and 112 residential fronting spaces.

A statutory car parking assessment and empirical demand assessment in accordance with Clause 52.06 of the Maribyrnong Planning Scheme deemed that as a 'place of assembly' land use was expected to attract a statutory requirement for 348 car parking spaces based on 0.3 spaces per seat (1,158 seats). This resulted in a shortfall of 40 spaces to be provided off-site which was expected to be readily accommodated off-site in accordance with the car parking survey results.

Based on the peak parking demand of approximately 350 vehicles, the maximum traffic generation would be 350 vehicles in 60 minutes during the evening. This level of traffic was anticipated to not impact on the operation or safety of the surrounding road network, with volumes distributed across the adjacent road network due to the location of off-street car parking spaces. Volumes were anticipated to fall outside of the traditional PM peak period.

2.1.2 2006 Planning Permit Approval

A planning permit was issued for CCCC (TP06/0043) dated 19 May 2006 to allow for the "*construction of buildings and works, including a performing arts centre and a covered linkway*". Traffic engineering related items pertaining to the existing use and operation of the school, as well as the proposed VET & STEM Building, that are stipulated within the permit include:

1. *…Widening of the existing crossover in Churchill Avenue, in relation to the location of the existing bus bay…*

   …Provision of bike parking/storage spaces to the satisfaction of the Responsible Authority.
5. *The performing arts centre may only operate up til 11:30pm for a maximum of 15 nights a year, except with the written permission of the Responsible Authority.*
6. *Before the use starts, a traffic and parking management plan to the satisfaction of the Responsible Authority must be submitted to the Responsible Authority. When approved, the plan will be endorsed and will then form part of the permit. Traffic and parking operations on and adjacent to the site must conform to this endorsed plan…The plan must be in accordance with the Traffic and Parking Impact Assessment (prepared by John Piper Traffic Pty Ltd, dated March 2006) but must include:*
   a. *The location of the overspill parking and all areas on and/or off site to be used for staff and patron parking;*
   b. *Specification of staff numbers adequate to enable efficient operation of the overspill parking area;*

c. *The number and location of all on and off site security staff to manage the overspill parking area;*

d. *The means by which the direction of traffic and pedestrian flows to and from the overspill parking area will be controlled both on and off site;*

e. *Measures to discourage patron car parking in areas not designated for parking on nights when the performance arts centre is in use;*

f. *Any measures to preclude staff parking in the overspill parking area.*

g. *Staffing and other measures to ensure the orderly arrival and departure of patrons, at both opening and closing times.*

h. *Servicing of the drainage and maintenance of the overspill parking area, particularly during winter time.*

8. *No fewer than 230 additional overspill parking spaces must be provided on the land at night when the performance arts centre would be in use.*

2.1.3 2011 Transport Impact Assessment

GTA Consultants prepared a Traffic Impact Assessment report dated 12 January 2011 for the proposed swimming centre located on school grounds at 67 Darnley Street, Braybrook. The pool and associated car parking was to be constructed as part of CCCC for both private and public use, including a 670 sq m (6-lane) indoor swimming pool, 145 sq m of office spaces and a new at-grade car park for 33 car parking spaces with access via Darnley Street.

An inventory of available public and private on and off-street car parking was undertaken within an approximate 200m radius of the school, which identified 139 on-street spaces and 336 school-related off-street car parking spaces (total of 475 spaces). The school car parking was inclusive of 50 formal car parking spaces, 262 informal car parking spaces and 24 informal oval car parking spaces. There were a minimum of 404 vacant spaces surveyed at 6pm on Thursday 16 December 2010, 49 of which were located in front of non-residential frontages.

A statutory car parking assessment in accordance with Clause 52.06 of the Maribyrnong Planning Scheme required the proposed swimming centre to provide 56 car parking spaces based on 5.6 spaces to each 100 sq m of the site. The provision of 33 car parking spaces was deemed acceptable through a Car Parking Demand Assessment based on typical peak parking demands likely to be generated, nearby on-street car parking vacancies along non-residential frontages and school-related parking that could be used during concurrent school events.

Based on an assumed peak hour car parking turnover of one (1) movement per car space, the proposed development was anticipated to generate in the order of 30 movements in any peak hour and 150 – 300 movements across an entire day. The lower limit represents activity on typical school days and the upper limit being a typical day for full public access. Based on existing traffic volumes in the vicinity of the site, being 107 AM peak hour movements and 70 PM peak hour movements adjacent the proposed site access on Darnley Street, the traffic generated by the proposed development could not be expected to compromise the safety or function of the surrounding road network.

2.1.4 2011 Traffic & Parking Management Plan

GTA Consultants prepared a Traffic & Parking Management Plan report dated 13 October 2011 for the CCCC Arts Centre. The report was prepared to act retrospectively for the 2006 planning permit approval where the arts centre had since been constructed and used despite not having one in place.

Seven (7) car parking spaces were located adjacent the centre for staff and performer parking, with patron parking to be accommodated primarily in the Darnley Street car park. With anticipated patron parking demand exceeding the supply of the car park, the paved area north-west of the centre and the lawn area to the north of the school were identified as the first and second preferred locations, respectively, for overspill car parking as detailed in the John Piper Traffic 2006 report. A provision in the order of approximately 233 informal car parking spaces was available in these areas (95 on the paved area and 138 on the lawn).

To ensure orderly access and egress to these areas, a combination of signage and staff was proposed to manage traffic in to and out of school parking areas. Patron parking was proposed to be coordinated so that vehicles could be guided to the Darnley Street car park first, then the paved overspill area, then the lawn overspill area. Methodologies and illustrations for filling each car park was also proposed to ensure efficient and controlled ingress and egress, including the location and type of signage to be used, bunting and bollards, location of up to three (3) traffic attendees and traffic flow directions.

2.1.5 2012 Planning Permit Approval

A planning permit was issued for CCCC (TP643/2011 (V0)) dated 24 January 2012 to allow for the "*construction of a building associated with the existing secondary school*", relating to the proposed swimming centre. No traffic engineering related items were stipulated as part of the endorsed plans, and thus it is considered that all previously prepared traffic engineering documentation as detailed through Section 2.1.1 to Section 2.1.4 under the 2006 planning permit approval was still valid at this time.

2.1.6 2019 Planning Permit Approval

A planning permit was issued for CCCC (TP226/2017(1)) dated 7 March 2019 "*to use the land for the purposes of education centre and demolish a building and construct and carry out works in a Heritage Overlay (retrospective)*", relating to the proposed multipurpose hall. Traffic engineering related items included in part:

- Car parking and access lanes to 19 Dobson Crescent and 40-44 Treloar Crescent must be designed, constructed, linemarked to indicate each car space and all access lanes and clearly marked to show the direction of traffic along access lanes and driveways to the satisfaction of the Responsible Authority.
- The use may operate only between the hours of 7:00am – 5:00pm Monday to Friday.
- Allow the use of 19, 21 and 25 Dobson Street as an education centre and the rear of 40-44 Treloar Crescent for car parking in association with an education centre, only.
- Allow use of the land only by CCCC.

2.1.7 2019 Traffic & Transport Assessment

Cardno prepared a Traffic & Transport Assessment report dated 17 July 2019 for the proposed on-site multipurpose hall at CCCC. The multipurpose hall was proposed to help improving existing sporting facilities on-site as well as providing a suitable gathering space to cater for the existing assemblies for up to the 2000 existing students across all three (3) campuses.

No change in student and staff numbers were contemplated as part of this development with the hall intended to service existing school operations. The removal of approximately 24 car parking spaces would be required for construction of the hall with no additional parking proposed.

An on-site car parking occupancy was completed on Friday 5 February 2016 between 7:00am – 6:00pm, which identified a total supply of 122 on-site car parking spaces for use by the school, inclusive of 78 formal car parking spaces across three (3) separate car parks and 44 informal car parking spaces within two off-street car parks to the north-west of the school. The peak parking demand occurred at 11:00am with 86 occupied spaces (36 available spaces).

In line with the above, the reduction of the school's car parking supply to 98 spaces was considered to be acceptable given the existing demand would be catered for with a surplus of 12 car parking spaces.

A number of traffic engineering related items were raised as part of the planning permit issued for the development and were responded to, including directional signage at Churchill Avenue and Dobson Crescent, formalisation, signage and pavement marking of car parks from Dobson Crescent and Treloar Crescent and car parking allocation and supply.

2.1.8 2019 Traffic Management Plan

As part of the multipurpose hall development, a Traffic Management Plan (TMP) dated 20 November 2019 and based on based on the Department of Education & Training (DET) template was prepared by and for CCCC. The following key points regarding the operation of the school as per the TMP are in part as follows:

- Designated pick-up and drop-off area for students is located at Churchill Avenue (point 39).
- Designated pedestrian crossing is at Churchill Avenue at the signalised pedestrian crossing.
- Multipurpose hall usage will predominantly occur during school hours on school days for school purposes and will not have a significant impact on the surrounding road network.
- All deliveries to occur at '204' reception only.
- Courier and delivery drop-off points are controlled by CCCC purchase orders and an approved system with delivery instructions.
- On-site speed limits are set at 20km/h with signage displayed on Dobson Crescent, Churchill Avenue and Darnley Street.
- There are 96 employee car parking spaces, two (2) visitor car parking spaces and one (1) accessible car parking space at the following formal locations:
  - Treloar Crescent 43 spaces
  - Leadership Car Park (via Dobson Crescent) 22 spaces
  - Auditorium Car Park 4 spaces
  - Darnley Street 27 spaces
  - Additional parking spaces possible at the Trade Training Centre with portable signs to direct traffic.
- Traffic control requirements for special events may vary. Specific control measures will need to be determined through a risk assessment process taking into consideration learnings from previous special events. The following broad safety arrangements and features are in place to minimise risks associated with special events:
  - Appropriate traffic controller numbers to restrict and direct traffic to and from the site.
  - Additional car parking areas clearly designated with signage.
- The new building in any calendar year will be predominantly used for internal stakeholders only across the approximate 40 weeks of an education school year.

2.1.9 2020 Signage & Linemarking Plan

In accordance with Planning Permit No. TP226/2017(1) a preliminary signage and pavement marking plan was prepared by Cardno (dated 21 February 2020) for the associated signage and pavement marking of the school's internal road network at the Darnley Street car park and the Dobson Crescent and Treloar Crescent car parks as part of the multipurpose hall works.

3 SITE CONTEXT

3.1 Subject Site

The proposed VET & STEM Building will be located at the primary CCCC campus located at 204 Churchill Avenue, Braybrook. The campus is located within a General Residential Zone 1 (GRZ1) and is generally neighboured by other residential zones in addition to a public use zone to the immediate south and a public park and recreation zone (Kinder Smith Reserve) to the immediate north.

The school is generally bounded by Churchill Avenue to the south, Darnley Street to the east, Dobson Crescent and residential properties to the west and Kinder Smith Reserve to the north.

The location of the subject sites and the surrounding environs are shown in Figure 3.1.

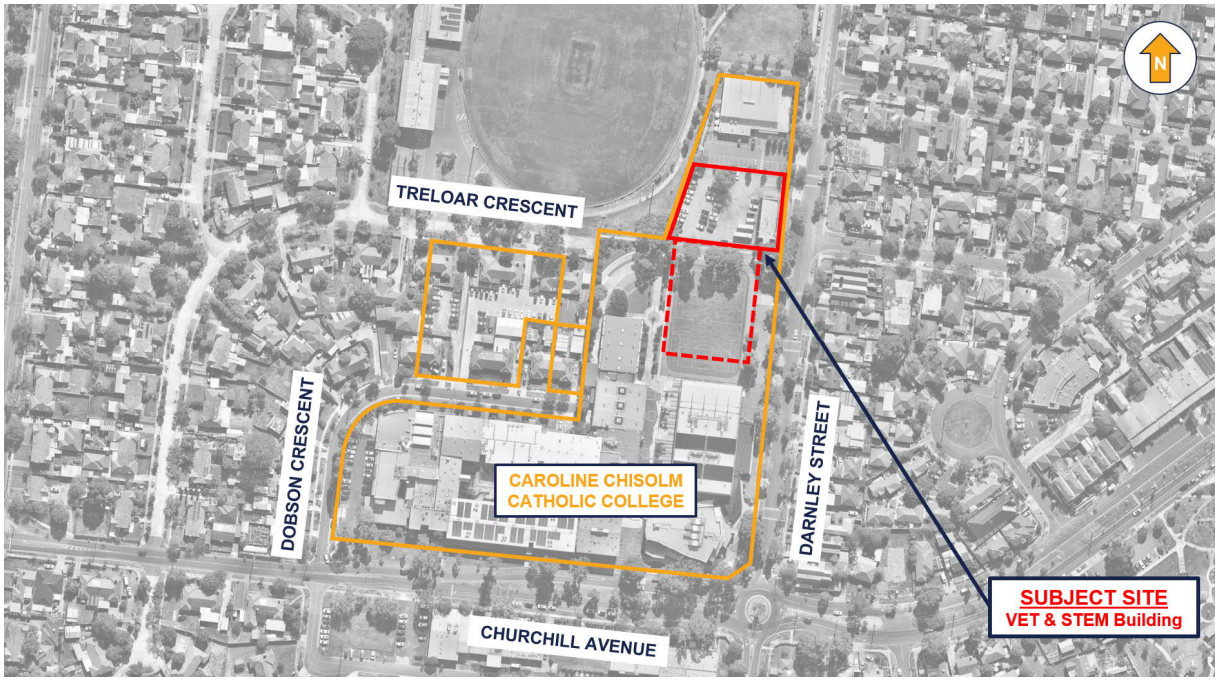

Figure 3.1: Surrounding Road Network & Environs

3.2 Road Network

3.2.1 Churchill Avenue

Churchill Avenue is a local distributor road managed by Maribyrnong City Council (Council) which runs from Mitchell Street, Maidstone in the east to its continuation at Devonshire Road in the west adjacent the south-west corner of the school. Churchill Avenue provides eastbound heavy vehicle access to the school and a signalised pedestrian crossing facility.

In the vicinity of the site, Churchill Avenue generally operates with a single trafficable lane, dedicated on-road bicycle lane and dedicated kerbside parallel parking lane in each direction separated by a 7.5-metre-wide centre median across an approximate 22-metre-wide carriageway. There is 'No Parking' restricted between 8:00am – 9:00am and 3:00pm – 4:00pm on school days on the northern kerbside along with multiple bus zones and a disabled parking zone. The southern kerbside has unrestricted parking east of the public bus stop. Churchill Avenue operates with a posted speed limit of 60km/h that is reduced to 40km/h during the hours of 8:00am – 9:30am and 2:30pm – 4:00pm on school days.

Views of Churchill Avenue facing east and west adjacent the school are shown in Figure 3.2 and Figure 3.3.

Figure 3.2: Churchill Avenue (facing east adjacent the School)

Figure 3.3: Churchill Avenue (facing west adjacent the School)

3.2.2 Darnley Street

Darnley Street is a local access road managed by Council which runs from Ballarat Road in the north to South Road in the south. Darnley Street provides fully-directional access to the school at four (4) separate vehicle crossovers, being ingress only to the southern Darnley Street car park access, two-way access at the northern Darnley Street car park access, two-way access to the informal gravel car park and proposed VET & STEM Building site and two-way access to the swimming centre.

In the vicinity of the site, Darnley Street operates as a two-way, two-lane road across an approximate 9-metre-carriageway. Bicycle sharrows along its length give priority to cyclists over vehicle movements. Parking is unrestricted other than an approximate 90m stretch of 10-minute pick-up and drop-off parallel parking along the western kerbside from 8:30am – 9:30am and 3:30pm – 4:30pm on school days, in addition to a bus zone from 2:00pm – 4:00pm immediately south of this restricted parking. Darnley Street operates with a posted speed limit of 40km/h.

Views of Darnley Street facing north and south adjacent the proposed VET & STEM Building access are shown in Figure 3.4 and Figure 3.5.

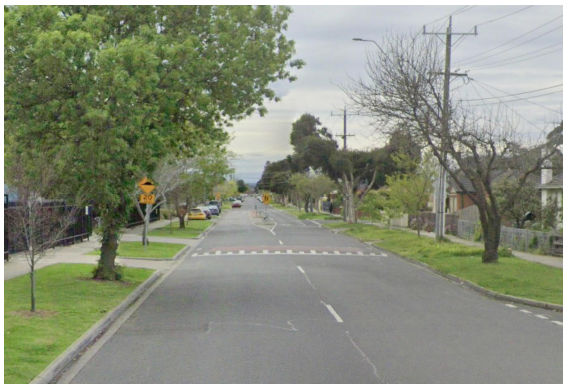

Figure 3.4: Darnley Street (facing north adjacent the proposed site access)

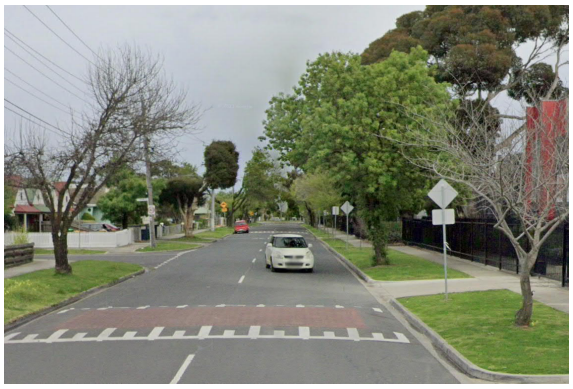

Figure 3.5: Darnley Street (facing south adjacent the proposed site access)

3.3 Sustainable Transport

3.3.1 Walking

To contextualise the pedestrian accessibility of the site, guidance has been sought from Walk Score (www.walkscore.com). This application provides walkability and transit accessibility metrics for cities across Australia.

Walk Score measures the walkability of any address using a patented system. For each address, Walk Score analyses hundreds of walking routes to nearby amenities. Points are awarded based on the distance to amenities. Amenities within a 5-minute walk (400m) are given maximum points. A decay function is used to give points to more distant amenities, with no points beyond a 30-minute walk. Walk Score also measures pedestrian friendliness by analysing population density and road metrics such as block length and intersection density.

Walk Score indicates the site has a walk score of 72 out of 100, which is defined as “most errands can be accomplished on foot”. In this instance of the school, this level of walkability is expected to equate to the fact that a large portion of school families have their place of residence within walking distance of the school, particularly given the location of the school central to the nearby residential areas. The areas available to the subject site within a 15-minute walk are shown in Figure 3.6.

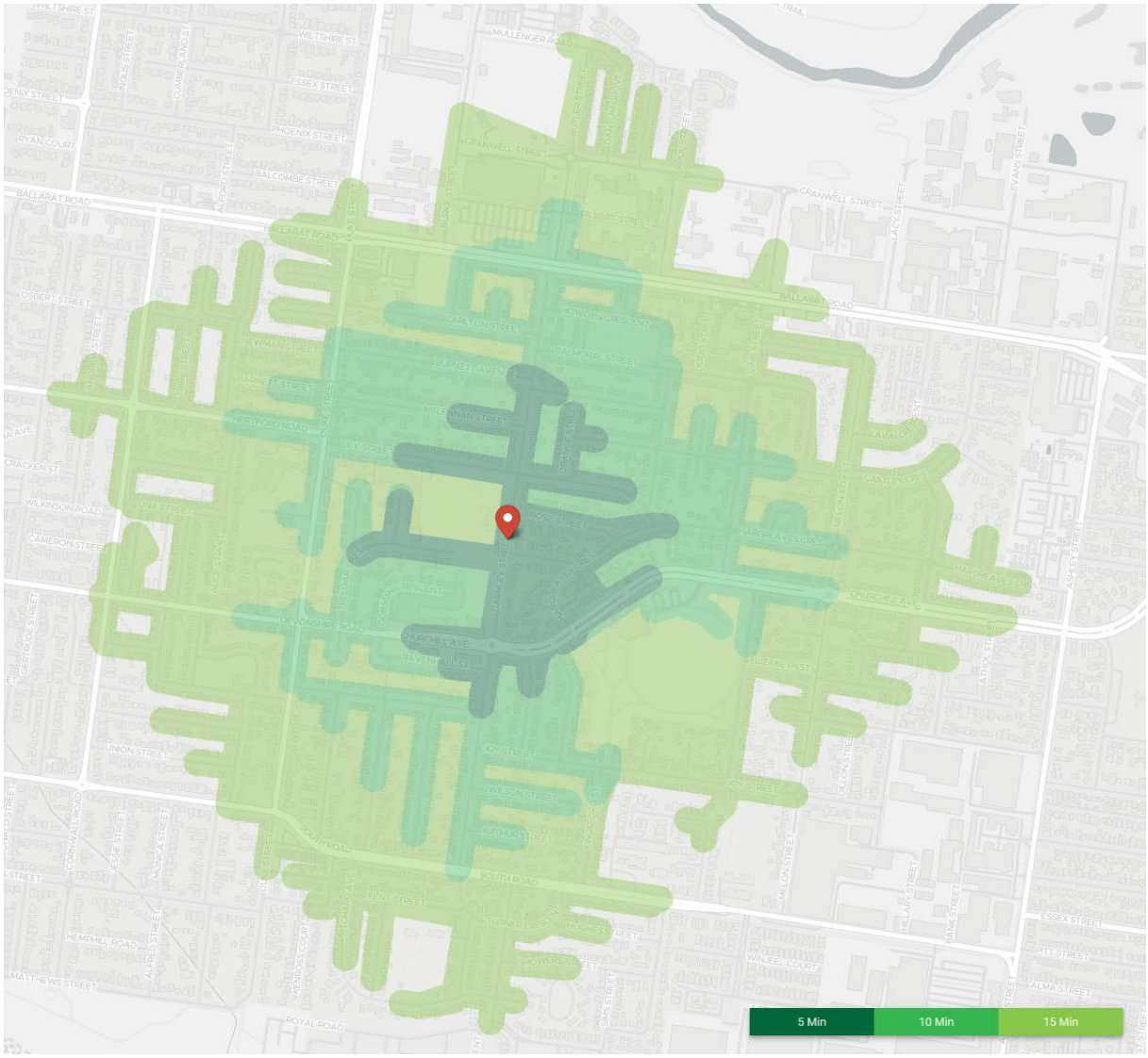

Figure 3.6: Walkability Map

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3.3.2 Bicycles

Bicycles are an excellent form of transport. They have almost no impact on the environment, produce no greenhouse gases, make no noise and consume no fossil fuels. Cycling is also good for people's health and fitness and is an enjoyable pastime.

As such, cycling is an important component of a sustainable and integrated transport system, and they are a practical alternative to motor travel for many trips.

The school has direct access onto the formal on-street bicycle network with on-road bicycle lanes provided along Churchill Avenue and bicycle priority provided on Darnley Street. These connections provide access to the wider formal on-road bicycle network which connect through to off-road shared paths such as the Maribyrnong River Trail, the Kororoit Creek Trail and the Sunshine Railway Line Linear Reserve.

The surrounding bicycle network in the context of the school is shown in Figure 3.7.

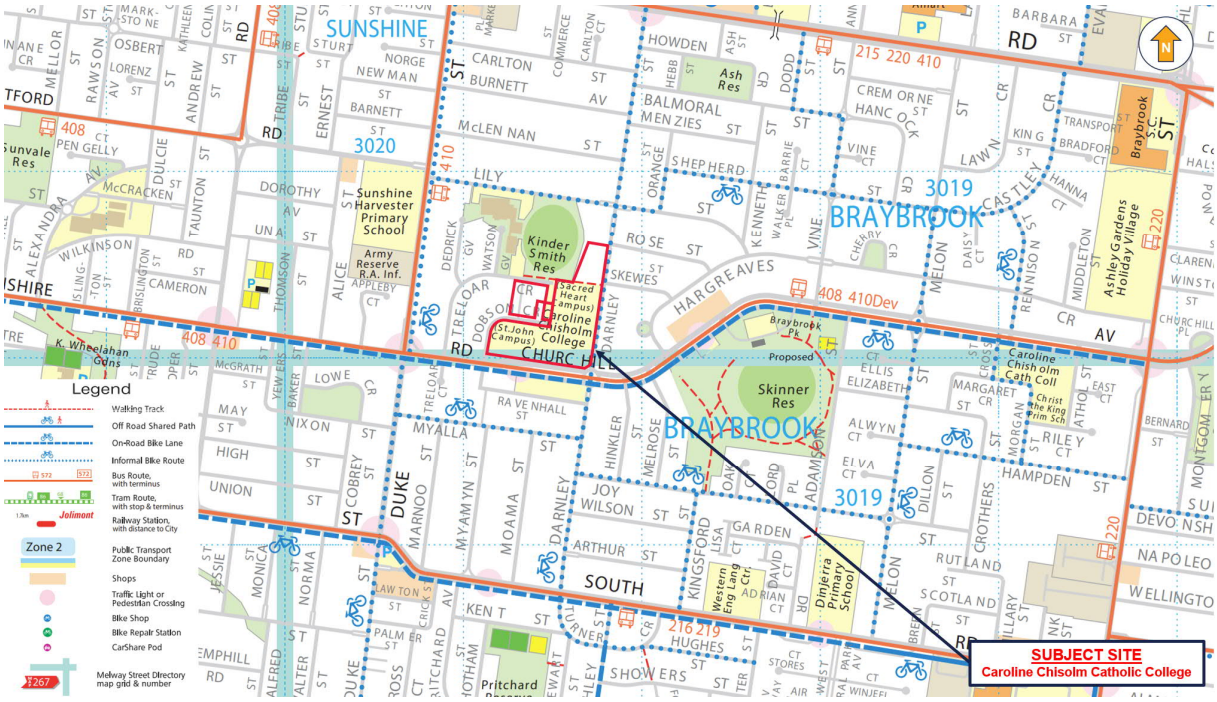

Figure 3.7: Extract: Maribyrnong Travel Smart Map

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3.3.3 Public Transport

The school is directly serviced by bus routes 408 and 410 that run east-west along Churchill Avenue, noting that route 410 deviates along Churchill Avenue approximately once an hour after school starts. These services both operate out of the Sunshine Station public transport interchange and service the neighbouring suburbs from St Albans north-west of the school through to Footscray east of the school.

Sunshine Station is located at an approximate 1.8km walking distance from the school and provides direct access to a number of public transport services that connect into the Melbourne CBD, Highpoint Shopping Centre public transport interchange and wider metropolitan Melbourne.

The public transport services operating within the vicinity of the school are shown in Table 3.1 and Figure 3.8.

Table 3.1: Available Public Transport Services

SERVICE	ROUTE NO.	ROUTE	NEAREST STOP
Bus	215	Caroline Springs – Highpoint SC	Darnley St / Ballarat Rd
	216	Sunshine Station – City via Dynon Road	Moama St / South Rd
	220	Sunshine Station – City via Footscray Road	Butler St / Ballarat Rd
	408	St Albans Station – Highpoint SC via Sunshine Station	Caroline Chisholm College / Churchill Ave
	410	Sunshine Station – Footscray via Ballarat Road	

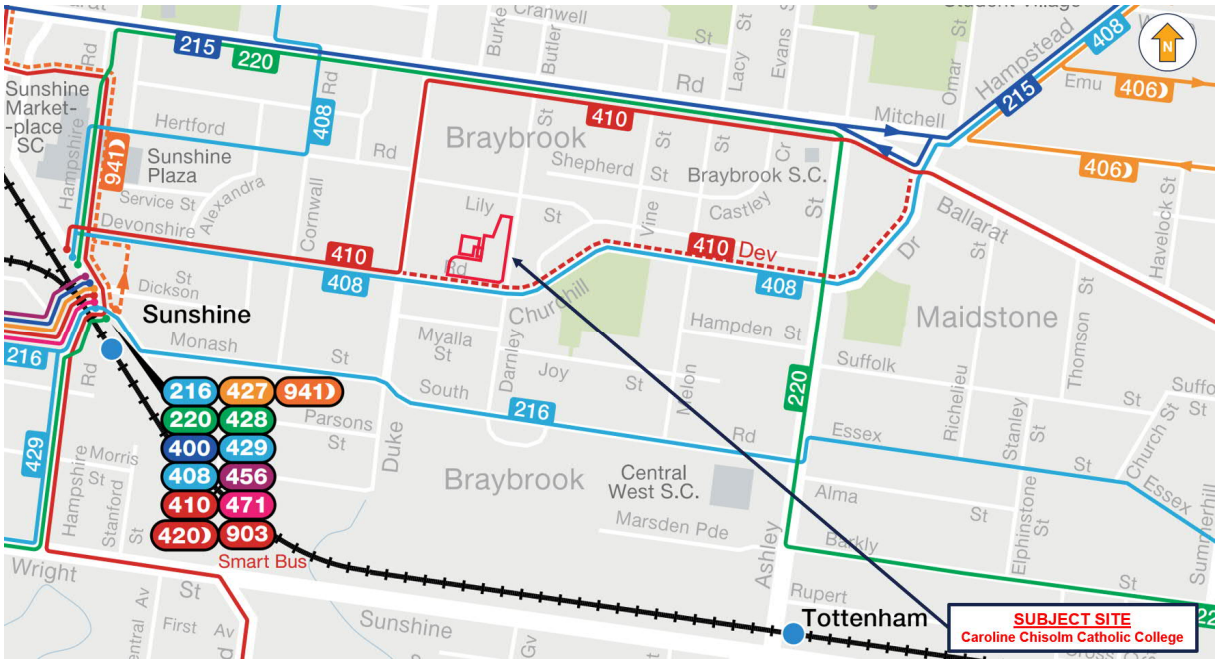

Figure 3.8: Public Transport Network Map

The areas available to the school within a 20-minute ride of sustainable transport are shown in Figure 3.9.

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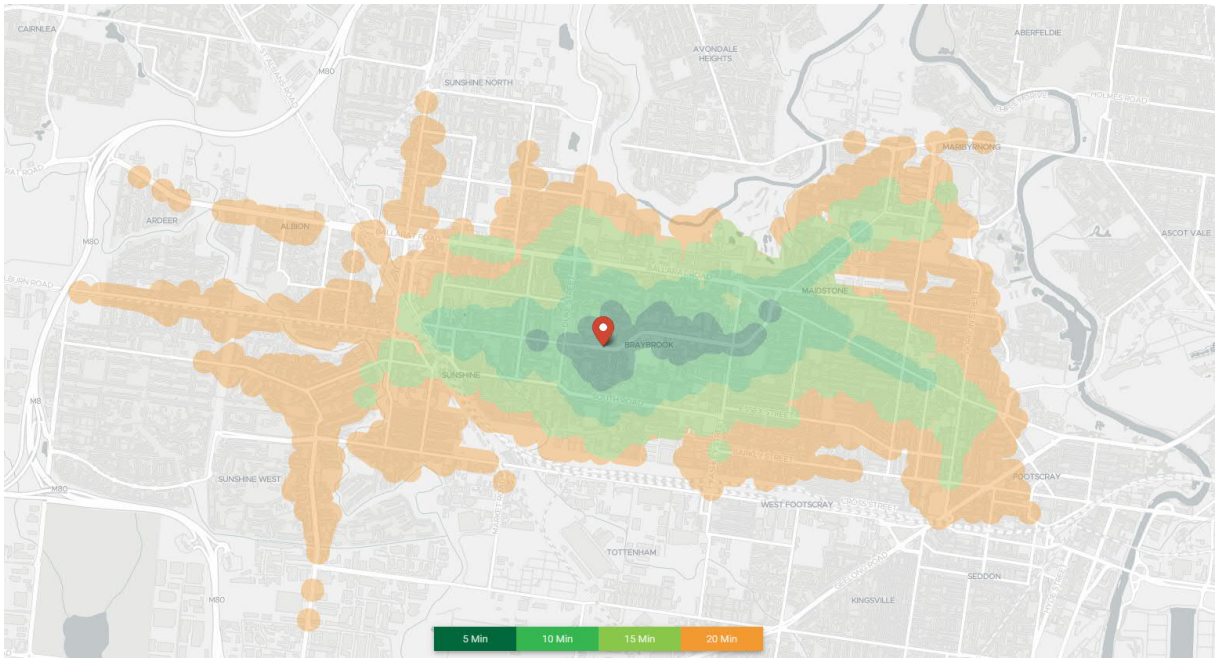

Figure 3.9: Public Transport Permeability Map

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4 CAR PARKING CONSIDERATIONS

4.1 Car Parking Requirements

4.1.1 Statutory Requirements

The proposed VET & STEM Building will operate ancillary to the existing operations of the school and will not be accommodating any increases to the number of students and staff on campus.

In this regard, there is no statutory car parking requirement.

4.1.2 Adequacy of Proposed Parking Provisions

It is noted that the development will be built on the existing land parcel that is utilised by the school as a gravel car park with formalised car parking in the order of 45 spaces, in addition to two (2) commercial vehicle spaces. An aerial photo of the existing gravel car park is shown in Figure 4.1.

Figure 4.1: Darnley Street Informal School Gravel Car Park

With the construction of the basement car park off the existing access (to be widened) to Darnley Street, the existing provision of parking is considered to be fully reinstated with a surplus of four (4) car parking spaces within the existing footprint of the land in addition to another 96 car parking spaces to be built underneath the multipurpose courts to formalise the school's current informal car parking opportunities.

The loading zone proposed as part of the new development is considered satisfactory to provide alternative parking and loading facilities for the commercial vehicles spaces away from the basement accessway.

In accordance with the latest existing school on-site car parking supply detailed in Section 2.1.8, post-development there will be a total of 270 formal and on-site car parking spaces available to the school. This includes the 33 car parking spaces that are utilised by the swimming centre during day-to-day operations and able to be utilised the school outside operational hours for after-hours events.

This provision of car parking is considered adequate to cater to the foreseeable demands of the existing school uses. This takes into consideration historical on-street car parking demand assessments that show consistent ample availability proximate to the school and adjacent non-residential frontages.

4.1.3 Relocation of Informal On-site Car Parking

As detailed in Section 2, the school is currently reliant upon a number of informal car parking areas to, if required, accommodate car parking demands for after-hours events. In this regard, the proposed development seeks to formalise additional car parking so as to provide formal parking opportunities for school visitors during events and reducing reliance on informal car parking.

4.2 Clause 52.06 Design Standard Assessment

The proposed car park and access layouts have been assessed in accordance with the design standards outlined within Clause 52.06-9 of the Maribyrnong Planning Scheme. This assessment is outlined in the following sections. Swept path assessments attached in Appendix A confirm suitable accessibility for proposed loading arrangements.

4.2.1 Design Standard 1: Accessways

Table 4.1: Clause 52.06-9 – Design Standard 1 (Accessways)

DESIGN CRITERIA - ACCESSWAYS	ASSESSMENT
Be at least 3 metres wide.	Satisfied.
Have an internal radius of at least 4 metres at changes of direction or intersection or be at least 4.2 metres wide.	Satisfied.
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.	Not applicable – no dead-end aisles proposed.
Provide at least 2.1 metres headroom beneath overhead obstructions, calculated for a vehicle with a wheelbase of 2.8 metres.	Satisfied.
If the accessway serves four or more car spaces or connects to a road in a Road Zone, the accessway must be designed so that cars can exit the site in a forward direction.	Satisfied.
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 Road Zone.	Not applicable – two-way simultaneous movements achieved as shown in Appendix A.
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. The area clear of visual obstructions may include an adjacent entry or exit lane where more than one lane is provided, or adjacent landscaped areas, provided the landscaping in those areas is less than 900mm in height.	Satisfied.
If an accessway to four or more car parking spaces is from land in a Road Zone, the access to the car spaces must be at least 6 metres from the road carriageway.	Not applicable.

4.2.2 Design Standard 2: Car Parking Spaces

Table 4.2: Clause 52.06-9 – Design Standard 2 (Car Parking Spaces)

DESIGN CRITERIA – CAR PARKING SPACES	ASSESSMENT
Car parking spaces and accessways must have the minimum dimensions as outlined in Table 2 of Clause 52.06-9 of the Planning Scheme.	Satisfied.
Clearance is provided to car parking spaces in accordance with Diagram 1 of Clause 52.06-9 of the Planning Scheme.	Satisfied.
Garages/Carports: Spaces must be at least 6m long and 3.5m wide for a single space and 5.5m wide for a double space (measured inside the garage/carport).	Not applicable.
Tandem Parking: An additional 0.5m to be provided between each tandem parking space.	Not applicable.
Where two or more car parking spaces are provided for a dwelling, at least one space must be undercover.	Not applicable.
Accessible car parking spaces to be in accordance with AS 2890.6-2009 and the BCA. Accessible car parking spaces may encroach into an accessway width specified within Table 2 of Clause 52.06-9 of the Planning Scheme by 0.5m	Satisfied.

4.2.3 Design Standard 3: Gradients

Table 4.3: Clause 52.06-9 – Design Standard 3 (Gradients)

DESIGN CRITERIA – GRADIENTS	ASSESSMENT
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.	Satisfied.
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. **Table 3: Ramp Gradients** TYPE OF CAR PARK / LENGTH OF RAMP / MAXIMUM GRADE Public car parks: 20 metres or less: 1:5 (20%) Public car parks: Longer than 20 metres: 1:6 (16.7%) Private or residential car parks: 20 metres or less: 1:4 (25%) Private or residential car parks: Longer than 20 metres: 1:5 (20%)	Satisfied.
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.	Not applicable.
Plans must include an assessment of grade changes of greater than 1:5.6 (18 per cent) or less than 3 metres apart for clearances, to the satisfaction of the responsible authority.	Not applicable.

4.2.4 Design Standard 4: Mechanical Parking

There is no mechanical parking provided as part of the proposed development.

4.2.5 Design Standard 5: Urban Design

Urban design is outside the scope of this report.

4.2.6 Design Standard 6: Safety

Lighting and signage have not been shown but should be incorporated as part of detailed design.

4.2.7 Design Standard 7: Landscaping

Landscaping is outside the scope of this report.

5 TRAFFIC CONSIDERATIONS

5.1 Traffic Generation

A total of 145 car parking spaces are proposed in a new basement car park accessed via a widened existing crossover to Darnley Street. Given the existing gravel car park provides access to 45 car parking spaces that are currently utilised by staff, the development provides access to an additional 100 car parking spaces.

With no additional staff associated with the proposed development, it is assumed that all staff movements in the morning and afternoon peak periods are currently accommodated by the surrounding road network, and that no additional staff movements will be generated due to the extension of the basement car park.

In this regard, it is assumed that all 145 car parking spaces would be filled and emptied only when there is a special event on at the school. Coinciding with the peak hours, an after-hours special event may see up to 145 inbound vehicle movements into the basement car park during the PM peak period. This would be a conservative assumption owing to the fact that there may be staff already parked in the basement and would remain for the after-hours event.

5.2 Traffic Impact

As detailed in Section 2.1.3, as part of the planning application for the swimming centre, AM and PM peak hour traffic movements counts were conducted on Darnley Street on Thursday 16 December 2010 in relation to the proposed swimming centre access. WGA has reviewed the surveys and added a 3% compound growth rate to conservatively represent current conditions (13 years of growth).

In this regard, for 2023 it is assumed that that in the AM peak period from 8:00am – 9:00am there are 70 southbound movements and 87 northbound movements, and in the PM peak period from 5:00pm – 6:00pm there are 41 southbound movements and 62 northbound movements. In this regard, Darnley Street is considered to operate with a low volume of vehicles.

As such, 145 vehicle movements inbound likely to occur during the PM peak period and 145 vehicle movements outbound likely to occur after the PM peak period are expected to have negligible impacts to traffic along Darnley Street due to the low existing volumes.

A review of publicly available SCATS data for the signalised pedestrian crossing at Churchill Avenue on Thursday 4 May 2023 shows the following peak periods of traffic:

- AM Peak 8:00am – 9:00am 887 vehicle movements.
- PM Peak 3:15pm – 4:15pm 946 vehicle movements.

At 5:00pm – 6:00pm, the volume on Churchill Avenue was recorded as 837 vehicle movements, representing 88% of the peak traffic volume recorded during school pick-up.

With this level of traffic, it is expected that the roundabout at Churchill Avenue and Darnley Street can accommodate any increase in traffic associated with after-hours use of the VET & STEM Building, noting that the proposed development is being utilised for existing uses and thus no traffic impacts are expected as a result of traffic redistribution from existing car parking areas utilised.

6 OTHER CONSIDERATIONS

6.1 Bicycle Parking Requirements

The proposed VET & STEM Building will operate ancillary to the existing operations of the school and will not be accommodating any increases to the number of students and staff on campus.

In this regard, there is no statutory bicycle parking requirement.

6.2 Loading Requirements

A dedicated on-site loading bay is proposed to be provided in the northern section of the existing Darnley Street car park. Existing access arrangements to this area accommodate the school's 10.2m coach. Swept path analysis diagram demonstrating access to this area by an 8.8m Medium Rigid Vehicle (MRV) has been prepared showing the MRV can access the loading area whilst the bus is parked.

It is expected that loading activity will occur within this loading bay area with goods and deliveries to be manually transported to the VET & STEM Building across the proposed footpath.

6.3 Waste Collection Arrangements

It is expected that the VET & STEM Building will utilise the existing waste management processes currently undertaken by the school, with waste to be manually transported from the VET & STEM Building to an existing on-site waste storage area. No dedicated waste room is proposed as part of the development.

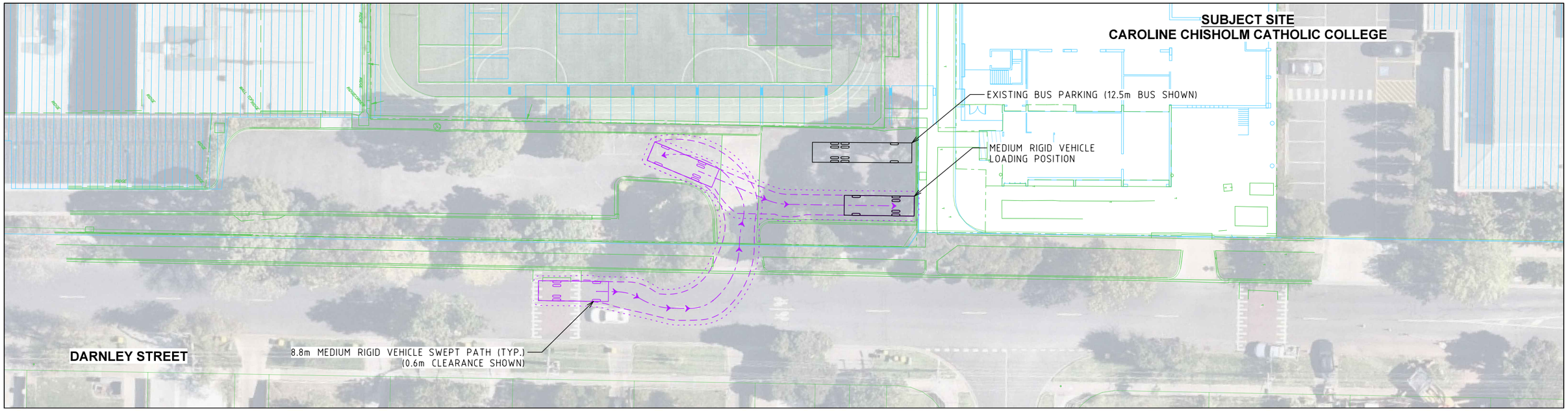
7 CONCLUSIONS

This TIA has been prepared for the proposed VET & STEM Building located at Caroline Chisolm Catholic College in Braybrook. Based on the discussion and analysis outlined within this report, the following key conclusions are derived:

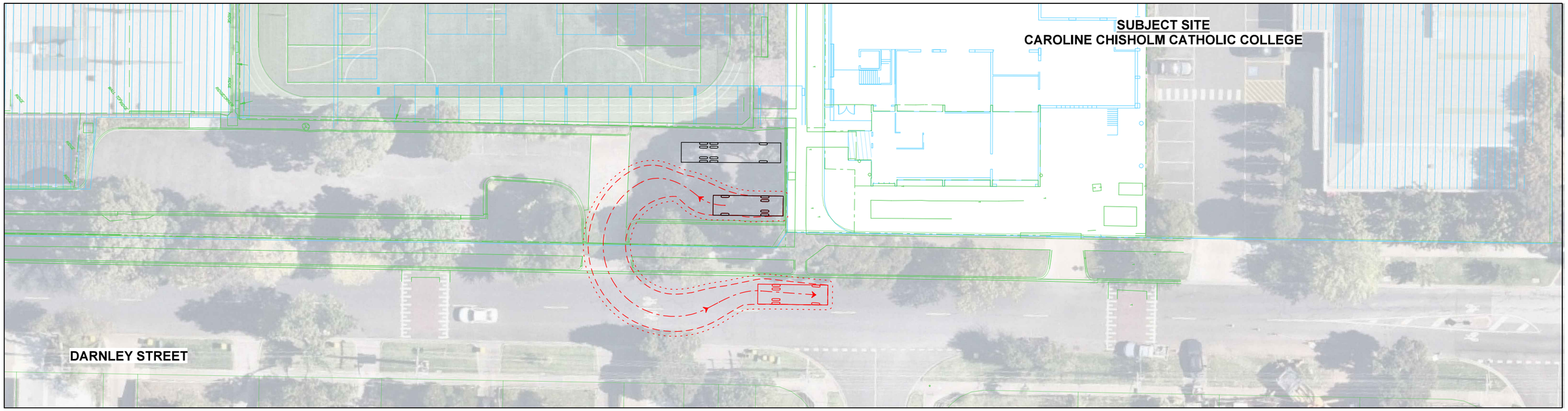
- The proposed operation of the building will operate ancillary to the existing operations of the school and therefore will not be accommodating any increase to staff and student numbers.
  - In this regard, there is no statutory requirement to provide any additional car parking or bicycle parking spaces.
- Nevertheless, the number of existing car parking spaces within the proposed development land parcel will be reinstated with a total surplus of four (4) car parking spaces for a total of 49 spaces. Notwithstanding, the development will provide an additional 96 car parking spaces underneath the multipurpose courts for a total of 145 proposed car parking spaces to formalise existing informal car parking areas available on-site and replace any car parking spaces taken up for the proposed loading bay in the Darnley Street car park.
- The car park and accessway layout has been designed in accordance with the Planning Scheme, with swept path assessments in Appendix A confirming the appropriateness of the design.
- Accommodating to existing school uses, the development is not expected to generate any additional staff or student vehicle trips during typical morning and afternoon school pick-up and drop-off operations, with trip redistributions expected to have negligible traffic impacts to the surrounding road network.
- In the event of after-hours use, the car park is assumed to generate 145 inbound vehicle movements during the commuter PM peak period and 145 outbound vehicle movements after the PM peak period, noting that staff are likely to already be parked at the school and remain for after-hours events.
- Existing traffic data for Darnley Street, allowing for 3% compound growth since 2010, suggests that 145 additional vehicle movements is likely to have negligible impacts to Darnley Street.
- Existing publicly available traffic data of the Churchill Avenue signalised pedestrian crossing adjacent the south of the school shows that the peak volume of traffic occurs from 3:15pm – 4:15pm (school pick-up time). As such, after hours use and peak traffic generation is expected to coincide with traffic outside peak traffic levels and therefore be accommodated in the existing road network configuration.
- Notwithstanding, the proposed development is catering for existing school uses, and therefore any traffic redistribution of existing after-hours event car parking is expected to result in negligible traffic impacts.
- A dedicated on-site loading bay is proposed to the north of the existing Darnley Street car park and will utilise the existing access crossover currently utilised by the school's existing 10.2m coach for bus parking. All deliveries will be transported manually to the proposed development.
  - Swept path analysis diagrams demonstrate that a MRV access the area whilst the 10.2m bus is parked.

APPENDIX A
SWEPT PATH ASSESSMENT DIAGRAMS

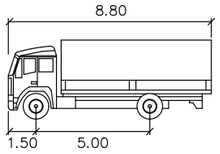
INGRESS MOVEMENT



EGRESS MOVEMENT



DESIGN VEHICLE



MRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 34.0

ADVERTISED PLAN

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SCALE BAR (m)
1:500 @ A3

When sheet printed full size, the scale bar is 50mm.
0 25 50mm

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WGA

CAROLINE CHISHOLM CATHOLIC COLLEGE
MARIBYRNONG CITY COUNCIL
SWEPT PATH ANALYSIS
MEDIUM RIGID VEHICLE - ACCESS MANOEUVRES

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