

Report Prepared for  
Cassnic Pty Ltd

**ratio:**

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**Proposed Child Care Centre  
and Café Development**

444-454 Waverley Road, Mount  
Waverley

19 May 2021

**transport:impact**

**r:**

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## 1 Introduction:

Ratio Consultants was engaged by Perkins Architects, on behalf of Cassnic Pty Ltd, to assess the transport and parking implications of the proposed child care centre and café development on the land at 444-454 Waverley Road, in Mount Waverley.

The proposed development comprises of the following:

- A two-level child care centre with a capacity to accommodate a maximum of 184 children.
- A café (food & drink premises) located on the ground floor with a leasable floor area of 148 sqm. The café will cater for up to 126 patrons in a mix of indoor and outdoor seating areas.
- 46 car parking spaces (including 1 DDA space) within a basement car park.
- Vehicular access to the basement car park will be provided by a double width crossover to/from Anthony Drive.
- 22 bicycle parking spaces to cater for the users of the proposed development.

This report has been prepared to address the parking and transport matters of the proposed development and is based on observations in the vicinity of the site, and of previous studies of similar developments elsewhere in Melbourne.

## 2 Existing Conditions:

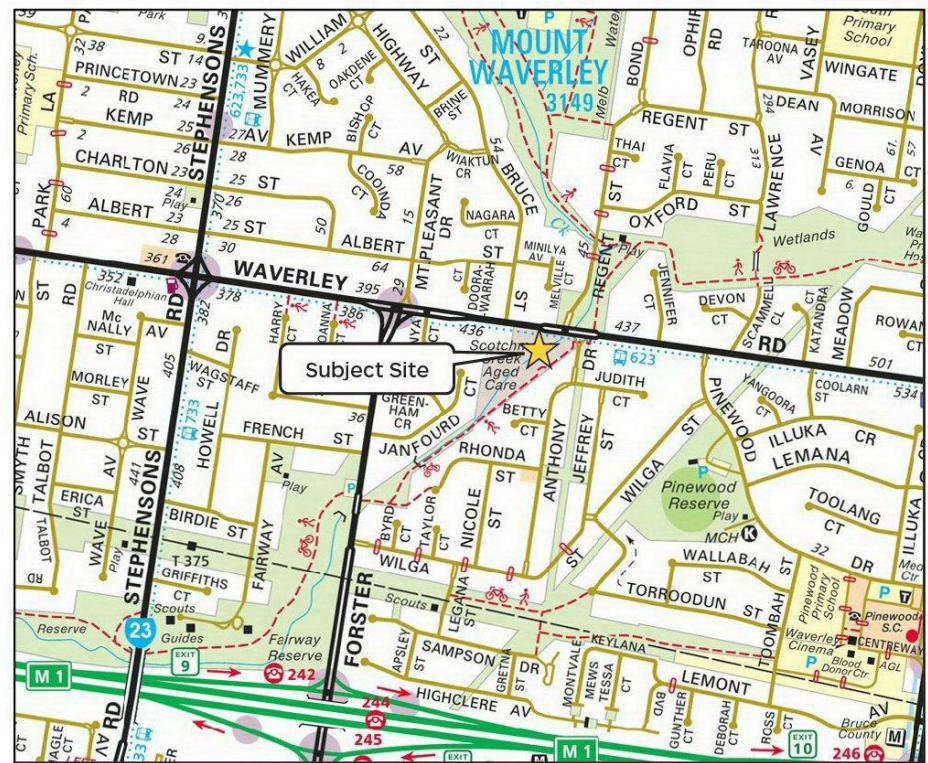
### 2.1 Site Locality

The proposed development is located on the south-western corner of the Waverley Road and Anthony Drive intersection in Mount Waverley. The subject site is irregular in shape with a frontage to Anthony Drive of approximately 10.5 metres, an abuttal to the reserve that runs along Scotchmans Creek of approximately 235 metres, for a large overall site area of approximately 3,660 square metres.

The site is currently undeveloped with some vegetation and is owned by the nearby BlueCross Scotchmans Creek Aged Care Centre, which abuts the western side of Scotchmans Creek and Waverley Road. The site currently accommodates the Scotchmans Creek Trail, a shared pedestrian and bicycle path which runs between East Malvern and Jells Park in Wheelers Hill.

The site's location relative to the surrounding road network is shown in Figure 2.1 below.

**Figure 2.1: Site Location and Surroundings**



Source: [online.melway.com.au/melway](http://online.melway.com.au/melway)

The site is located within a Neighbourhood Residential Zone – Schedule 2 (NRZ2) and is subject to an Inundation Overlay Schedule (LSIO) as well as a Vegetation Protection Overlay – Schedule 1 (VPO1).

Some key land uses within the vicinity of the site include:

- BlueCross Scotchmans Creek Aged Care Centre, which abuts the western side of Scotchmans Creek and Waverley Road.
- Pinewood Reserve located approximately 700 metres to the southeast of the subject site.
- Valley Reserve located approximately 800 metres to the north of the subject site.
- Pinewood Primary School located approximately 900 metres to the south east of the subject site.

- Pinewood Shopping Centre located approximately 900 metres to the south east of the subject site, which also includes the Pinewood Cinema.
- Mount Waverley Primary School located approximately 1.4 km west of the subject site.

## 2.2 Road Network

**Waverley Road** is classified as a Primary Arterial Road under the management of the Department of Transport (formerly VicRoads) and it essentially runs in an east-west alignment between Jells Park in Wheelers Hill and Dandenong Road (Princes Highway) in Malvern East.

In the vicinity of the site, Waverley Road has a cross-section of approximately 20 metres that includes two traffic lanes in each direction. Localised widening has been provided at its intersection with Regent Street to accommodate a short right turn lane along the eastern approach of Waverley Road.

There is a central median along Waverley Road at its intersection with Anthony Drive. The central median restricts the ability for vehicles to turn right into Anthony Drive from Waverley Road and to turn directly right out of Anthony Drive into Waverley Road. Vehicles seeking to travel to the east from Anthony Drive are able to turn left onto Waverley Road and then use the right-turn / U-turn slot at Regent Street to perform a U-turn and travel east along Waverley Road.

Motorists are not permitted to perform a U-turn at the eastern end of the central median to travel west back towards Anthony Drive.

Views of Waverley Road adjacent to the subject site are shown in Figure 2.2 and Figure 2.3 below:

**Figure 2.2: View of Waverley Road Facing East**



**Figure 2.3: View of Waverley Road Facing West**



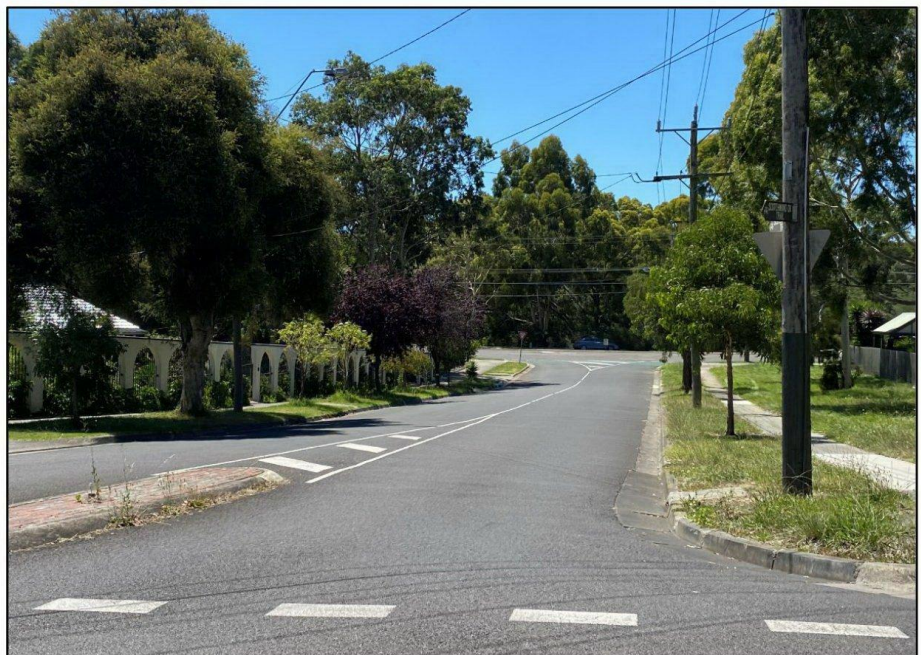
Waverley Road has a posted speed limit of 60km/hr and has footpaths provided on both sides of the road.

**Anthony Drive** is classified as a municipal Local Road and essentially runs in a north-south alignment between Waverley Road and Wilga Road. It has an approximate carriageway width of 7 metres accommodating two-way traffic movements, and kerbside parallel parking on both sides of the road.

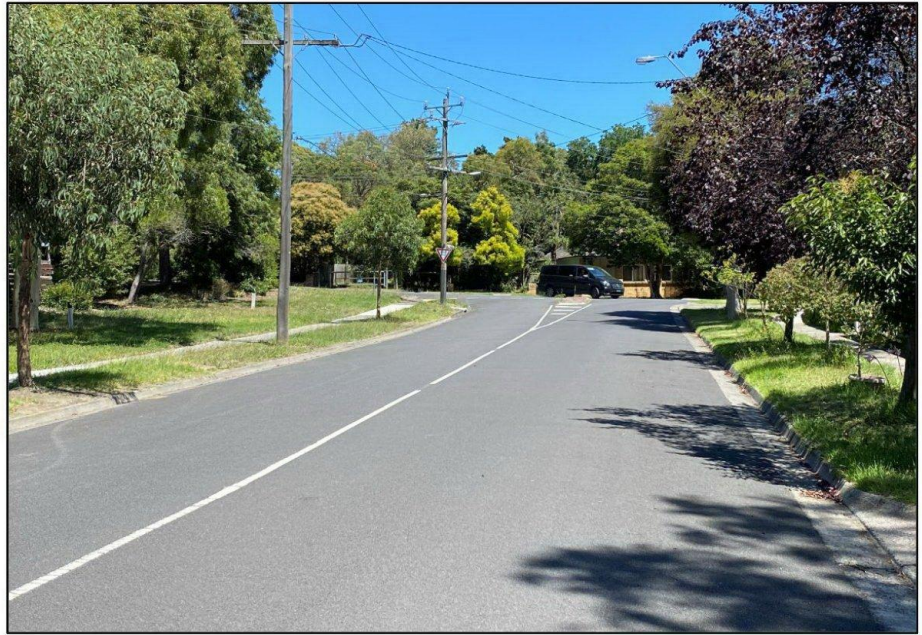
Anthony Drive has a default speed limit of 50 km/hr applicable to a built-up area and has footpaths provided on both sides of the road.

Views of Anthony Drive facing north and south in the vicinity of the site are shown in Figure 2.4 and Figure 2.5.

**Figure 2.4: View of Anthony Drive Facing North**



**Figure 2.5: View of Anothny Drive Facing South**



### **2.3 Parking Conditions**

Due to the ongoing COVID-19 Pandemic, parking occupancy surveys were not commissioned as part of this planning application. The current traffic and parking levels on the road network have been altered due to the pandemic and therefore any parking occupancy surveys commissioned at this time may not be reflective of the typical parking demand.

In order to determine the parking conditions in the vicinity of the site, aerial photographs provided by 'Nearmap' were utilised to undertake spot surveys within close proximity of the site. The survey area included the following:

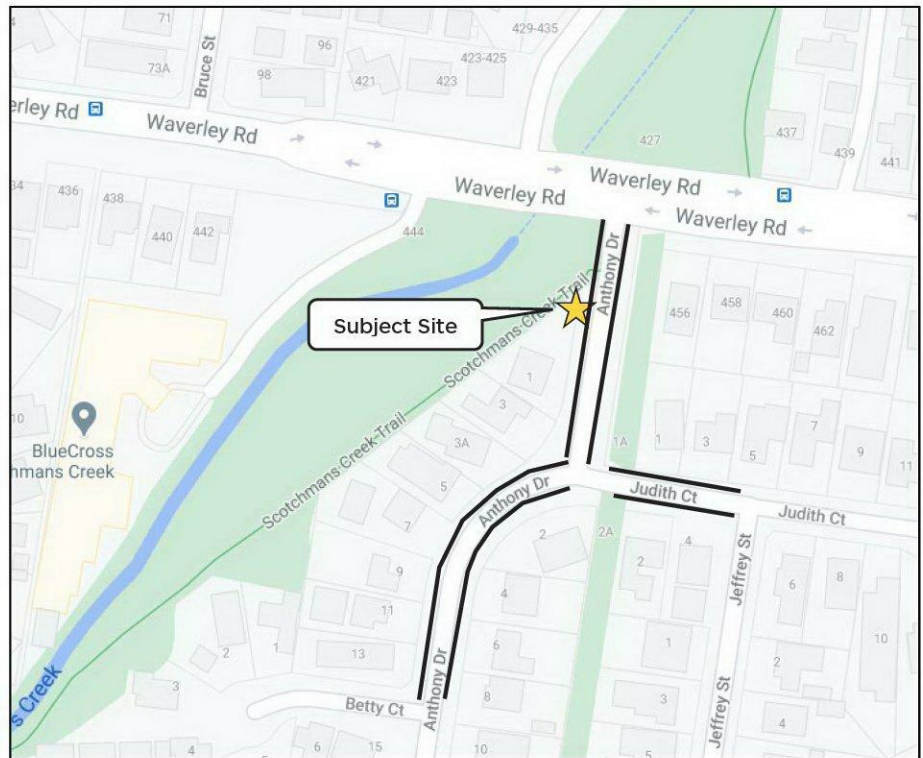
- Anthony Drive, between Waverley Road and Betty Court; and
- Judith Court, between Anthony Drive and Jeffrey Street.

Kerbside parking is not permitted along either side of Waverley Road and no reliance was made for parking availability within the local street network to the north of Waverley Road due to the nature of the key component of the proposed use.

The extent of the survey area is shown in Figure 2.6:



**Figure 2.6: Aerial Car Parking Survey Area**



There was observed to be a parking supply of 25 spaces within the survey area. The on-street parking along both sides of all roads within the survey area is unrestricted. Table 2.1 summarises the results of the 'Nearmap' spot surveys for a range of days and times.

**Table 2.1: Aerial Photograph Spot Parking Survey Results**

Date	Day	Time	Number of Occupied Spaces	Number of Available Spaces
11 March 2021	Thursday	10:22 am	6 spaces	19 spaces
22 January 2021	Friday	10:37 am	1 space	24 spaces
8 November 2020	Sunday	3:10 pm	5 spaces	20 spaces
7 September 2020	Monday	11:38 pm	6 spaces	18 spaces
28 April 2020	Tuesday	12:19 pm	2 spaces	23 spaces
17 February 2020	Monday	1:33 pm	11 spaces	14 spaces
19 December 2019	Thursday	2:54 pm	9 spaces	16 spaces
<b>Average</b>			<b>6 spaces</b>	<b>19 spaces</b>

The survey results indicate a maximum of 11 spaces were recorded occupied within the survey area. Accordingly, there were a minimum of 14 car parking spaces available within the survey area. These vacant spaces could potentially be utilised by the future users of the proposed development, predominantly customers of the proposed café during weekday periods.

## 2.4 Sustainable Transport

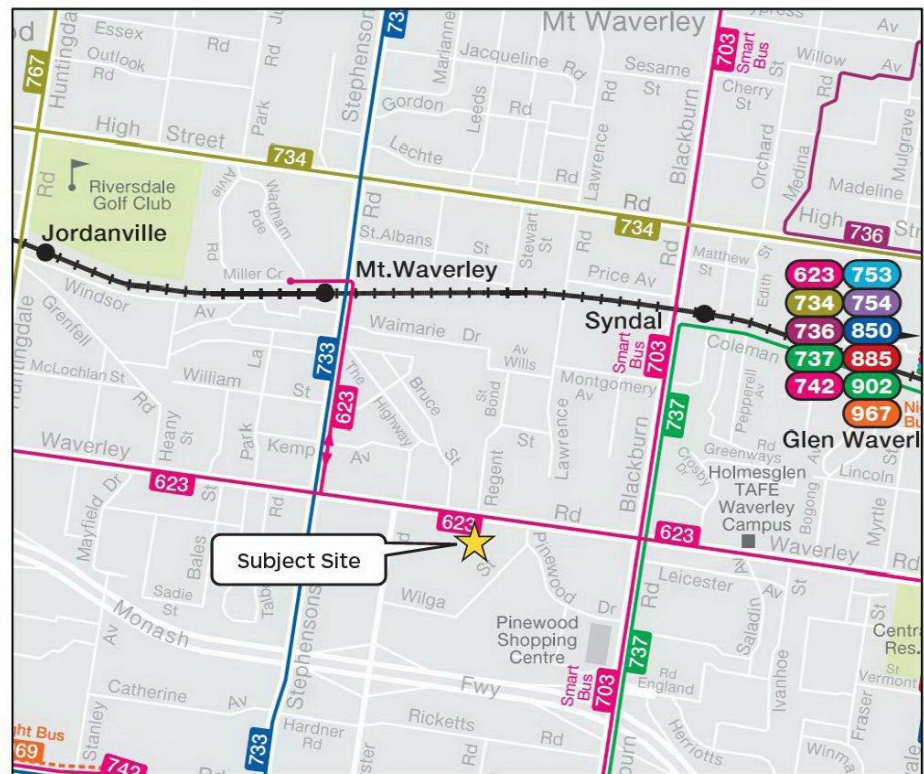
### Public Transport

The site has good access to the public transport network with bus services operating within close proximity to the subject site. The public transport services within the vicinity of the site are summarised in Table 2.2 and displayed graphically in Figure 2.7.

**Table 2.2: Public Transport Services**

Service	Route Number	Route Description	Nearest Stop	Walking Distance
Bus	623	Glen Waverley - St Kilda via Mount Waverley & Chadstone & Carnegie	Regent Street	140m (~2 mins)
	733	Oakleigh - Box Hill via Clayton & Monash University & Mt Waverley	Albert Street	800m (~9 mins)
	703	Middle Brighton - Blackburn via Bentleigh & Clayton & Monash University	Waverley Road / Blackburn Road	900m (10 mins)
	737	Croydon - Monash University via Boronia & Knox City Shopping Centre & Glen Waverley		

**Figure 2.7: Monash City Council Public Transport Map**



Source: [ptv.vic.gov.au](http://ptv.vic.gov.au)

As can be seen above, Mount Waverley Railway Station is also accessible via Bus Route 623 (8-minute bus ride).



## Bicycle Network

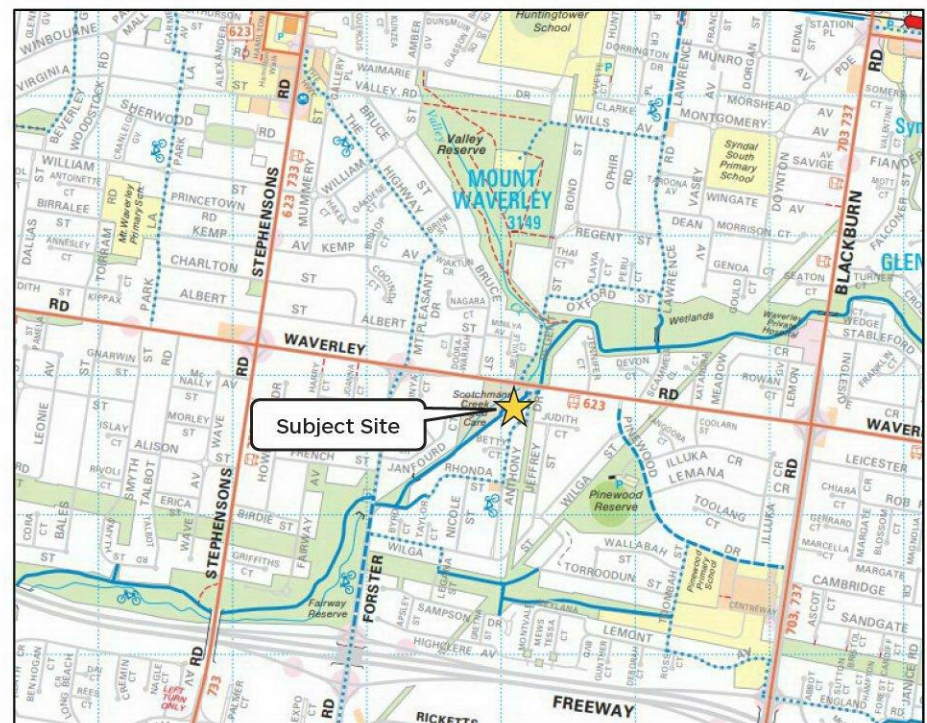
The site also has very good bicycle accessibility, primarily via the Scotchmans Creek Trail (a shared pedestrian and bicycle path), that currently runs through the subject site and provides a connection throughout the eastern suburbs.

Other bicycle facilities providing a very good connection to the subject site via the broader bicycle network include:

- Off road shared path along the Waverley Rail Trail.
- On-road bicycle lanes along Pinewood Drive, Forester Road and Lawrence Road; and
- Informal bicycle routes along Anthony Drive, Regent Street, Oxford Street, Wills Avenue and Mt Pleasant Drive.

The bicycle paths within the vicinity of the subject site are presented in the TravelSmart Map shown in Figure 2.8.

**Figure 2.8: Monash TravelSmart Map**



Source: [www.gleneira.vic.gov.au](http://www.gleneira.vic.gov.au)

## Pedestrian Facilities

Pedestrian movements are well facilitated with footpaths provided on both sides of the road on Waverley Road, Anthony Drive and in the surrounding streets of the subject site. These facilities provide a link between the subject site and surrounding public transport services, retail facilities, amenities and shopping precincts for pedestrians. Pedestrians can also use the Scotchmans Creek Trail.

## 2.5 Crash Review

A review has been conducted of the Department of Transport's 'Crashstats' database for the most recent five-year period for any reported casualty crashes within the following search area:

- Waverley Road between Mount Pleasant Drive and Pinewood Drive.
- Anthony Drive, between Waverley Road and Judith Court.
- The respective intersections

The crash search revealed that there have been four casualty crashes within the search area. These crashes are summarised below:

- Two 'right near' type crash occurred at the intersection of Waverley Road and Regent Street, resulting in one 'other' type injury and one 'serious' type injury.
- One 'right near' type crash occurred at the intersection of Waverley Road and Anthony Drive, resulting in one 'other' type injury.
- One 'left near' type crash occurred at the intersection of Waverley Road and Pinewood Drive, resulting in one 'other' type injury.

Given the road classifications, associated traffic volumes, dispersed and disparate nature of the crashes, and proposed access to the site, it is considered that the road network in the immediate vicinity of the site is operating in a relatively safe manner.

## 3 The Proposal:

### 3.1 Development Summary

It is proposed to construct a two-level mixed-use development on the land located at 444-454 Waverley Road, in Mount Waverley.

More specifically, the development will comprise the following land uses:

- A two-level child care centre that will have a capacity to accommodate 184 children; and
- A café (food & drink premises) located on the ground floor with a leasable floor area of 148 sqm. The café will cater for up to 126 patrons in a mix of indoor and outdoor seating areas.

### 3.2 Parking Provision

The development proposes to provide:

- A total of 46 car parking spaces (including one DDA space) within the basement level car park.
- A total of 22 bicycle parking spaces to cater the needs of the staff, visitors and customers of the land uses proposed on site.

### 3.3 Site Access

Vehicular access to the on-site car park is proposed via a double width crossover located along Anthony Drive.

The Scotchmans Creek Trail (shared pedestrian and bicycle path) that currently runs through the subject site will be relocated onto land directly to the north-west of the subject site. It is understood that Council is currently working through the relocation and realignment of the Scotchmans Creek Trail.

The realigned Scotchmans Creek Trail will also provide pedestrian access to the subject site. Additionally, pedestrian access is provided to/from Anthony Drive.

### 3.4 Waste Arrangements

Refuse and recycling storage is proposed within the basement level of the development in a designated room. Waste will be collected on site, outside the proposed operating hours of the child care centre.

### 3.5 Other Matters

As discussed, the Scotchmans Creek Trail will be relocated to the immediate north-west of the subject site, adjacent to the alignment of the Scotchmans Creek. It is understood that these works are currently being investigated and will be funded and undertaken by the City of Monash.

#### 4.1 Clause 52.06-5 – Car Parking Requirements

Car parking requirements for new use developments are set out under Clause 52.06 of the Monash Planning Scheme. The purpose of Clause 52.06, amongst other things, is:

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

The number of car parking spaces required for the specified uses is listed under Table 1 of Clause 52.06-5. The car parking requirement specified for a use listed in Table 1 does not apply if:

- A car parking requirement for the use is specified under another provision of the Planning Scheme: or
- A schedule to the Parking Overlay specifies the number of car parking spaces required for the use.

As per Amendment VC148, Column B rates of Table 1 from Clause 52.06 of the Monash Planning Scheme apply if:

- Any part of the land is identified as being within the Principal Public Transport Network Area as shown in the Principal Public Transport Network Area Maps (State Government of Victoria, 2018); or
- A Schedule to the Parking Overlay or another provision of the planning scheme specifies that Column B applies.

Since the subject site falls outside of the Principle Public Transport Network (PPTN) area the Column A rates of Table 1 in Clause 52.06 are applicable for the number of car spaces to be provided. Application of these rates is shown in Table 4.1 below:

**Table 4.1: Statutory Car parking Requirement**

Use	Capacity/Size	Statutory Parking Rate (Column A Rate)	Statutory Requirement
Child Care Centre	184 Children	0.22 spaces to each child	40 spaces
Café (Food & Drink Premise)	148 sqm (126 patrons)	4 spaces per 100 sqm of leasable floor area	5 spaces
<b>TOTAL</b>			<b>46 spaces</b>

Accordingly, the proposed development has a statutory requirement to provide 45 car parking spaces on-site in accordance with the Monash Planning Scheme.

The development proposes to provide a total of 46 car parking spaces on-site in the following arrangement:

- 40 spaces allocated to the child care centre;
- Five (5) spaces allocated to café use; and
- One (1) DDA space shared between both land uses as needed.

Accordingly, the on-site car parking provision exceeds the statutory requirements of the Monash Planning Scheme and is considered satisfactory.

## 5.1 Clause 52.06 Design Standard Assessment

The proposed vehicular access arrangements and car parking layout have been designed in accordance with the objectives and design requirements of Clause 52.06-9 of the Monash Planning Scheme, AS/NZS 2890.6:2009 and with the relevant sections of AS/NZS 2890.1:2004.

An assessment against the relevant design standards of Clause 52.06-9 of the Planning Scheme is provided below.

### Design Standard 1 – Accessways

Vehicular access is proposed via a double width crossover located along Anthony Drive. The existing crossover will be modified to align with the proposed internal accessway.

Design Standard 1 of Clause 52.06-9 relates to the design of accessways. The requirements of Design Standard 1 are assessed against the proposal in Table 5.1.

**Table 5.1: Design Standard 1 Assessment - Accessways**

Requirement	Comments
Must be at least 3m wide.	<b>Complies:</b> All accessways have been provided with a minimum trafficable width of 5.5 metres.
Have an internal radius of at least 4m at changes of direction or intersection or be at least 4.2m wide.	<b>Complies:</b> Change of directions in the accessway have been widened appropriately.
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.	<b>Complies:</b> The end of aisle car spaces can exit in a forward direction with one manoeuvre.
Provide at least 2.1m headroom beneath overhead obstructions, calculated for a vehicle with a wheel base of 2.8m.	<b>Complies:</b> A minimum headroom clearance of 2.2 metres has been provided within the car parking area in accordance with the Australian Standard AS2890.1:2004.
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.	<b>Complies:</b> All vehicles are able to enter/exit the site via Anthony Drive in a forward direction.
Provide a passing area at the entrance at least 6.1m wide and 7m long if the accessway serves ten or more car parking spaces and is either more than 50m long or connects to a road in a Road Zone.	<p><b>Generally Complies:</b> The accessway at the entrance of the site is 5.5 metres wide and in excess of 7.0 metres in length which enables simultaneous two-way vehicular movements.</p> <p>It is acknowledged that the width of 5.5 metres is not in strict accordance with this design requirement (which requires 6.1 metres). However, this width is considered appropriate in this instance for the following reasons:</p> <ul style="list-style-type: none"> <li>- A width of 5.5 metres is accordance with the Clause 2.5.2 of the Australian Standard AS2890.1 [2004] for a two-way accessway.</li> <li>- The Swept Path Assessment (presented in Appendix A) demonstrate satisfactory access.</li> </ul>



	- Due to the spatial constraints at the site entrance/exit, a wider accessway cannot be provided.
Have a corner splay or area at least 50% clear of visual obstructions extending at least 2.0m along the frontage road from the edge of an exit lane and 2.5m 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.	<b>Complies:</b> A pedestrian sight triangle is provided adjacent to the exit lane of the accessway at the entrance to the site, measuring 2.0 metres along the site frontage and extending 2.5 metres into the site as per the requirement of Design Standard 1. Any landscaping or fixtures (such as fencing/mailboxes) within the splay will remain below 900mm in height to ensure clear visibility.  Since the accessway is double width at the entrance, a pedestrian sight triangle is not required to be provided adjacent to the entrance lane of the accessway.
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 6m from the road carriageway.	<b>N/A:</b> Car spaces are not accessed directly to/from a road in a Road Zone.
If entry to the car space is from a road, the width of the accessway may include the road.	<b>N/A:</b> Entry to the car spaces is not accessed directly from a road.

## Design Standard 2 – Car Parking Spaces

A total of 46 standard at grade car parking spaces (including one DDA space) are provided on-site for the proposed development.

Design Standard 2 of Clause 52.06-9 relates to the design of car parking spaces. The requirements of Design Standard 2 are assessed against the proposal in Table 5.2.

**Table 5.2: Design Standard 2 Assessment – Car Parking Spaces**

Requirement	Comments
Car parking spaces and accessways must have the minimum dimensions as outlined in Table 2 of Design Standard 2.	<b>Complies:</b> All of the car parking spaces have been provided with dimensions in accordance with Table 2 of Design Standard 2 to Clause 52.06 of the Planning Scheme.
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 of Design Standard 2, other than:  - 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.  - A structure, which may project into the space if it is at least 2.1m above the space.	<b>Complies:</b> All car parking spaces are clear of any encroachment into the area marked on Diagram 1 of the Design Standard 2.
Car spaces in garages or carports 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 or carport.	<b>N/A:</b> No spaces are proposed within a garage or car port.
Where parking spaces are provided in tandem (one space behind the other) an additional	<b>N/A:</b> No car spaces are proposed in a tandem arrangement.

500mm in length must be provided between each space.	
Where two or more car parking spaces are provided for a dwelling, at least one space must be under cover.	<b>N/A:</b> Notwithstanding this, all of the car parking spaces are provided under cover.
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 of Design Standard 2 by 500mm.	<b>Complies:</b> The single DDA space and the adjacent shared zone have been designed in dimensional accordance of AS2890.6:2009, each having a width of 2.4 metres and a length of 5.4 metres.

### Design Standard 3 – Gradients

Access to the basement car park is proposed to be provided via a ramp that comprises the following transitions:

- Flat section for approximately 15 metres from the property boundary;
- 1:10 for 5.0 metres (from RL 81.9 metres);
- 1:5 for 14.25 metres;
- 1:8 for 2.0 metres; and
- 1:20 for 4.0 metres (to reach RL 78.1 metres within the basement).

The development proposes to have the following gradients within the basement:

- 1:40 for 15.0 metres (from RL 78.1 metres); and
- 1:33 for 47.0 metres (to reach RL 76.3 metres at the end of the aisle).

Design Standard 3 of Clause 52.06-9 relates to the design of gradients. The requirements of Design Standard 3 are assessed against the proposal in Table 5.3.

**Table 5.3: Design Standard 3 Assessment - Gradients**

Requirement	Comments
Accessway grades must not be steeper than 1:10 (10%) within 5m 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.	<b>Complies:</b> The first 5 metres into the site are flat and therefore in accordance with this design requirement.
Ramps (except within 5 metres of the frontage) must have the maximum grades as outlined in Table 3 of Design Standard 3 and be designed for vehicles travelling in a forward direction.	<b>Complies:</b> The proposed grades are in accordance with Table 3 of Design Standard 3, with grades no steeper than 1:5.  Further all gradients provided within the basement are in accordance with Clause 2.4.6 of the Australian Standard AS2890.1 [2004].
Where the difference in grade between two sections of ramp or floor is greater than 1:8 (12.5%) for a summit grade change, or greater than 1:6.7 (15%) for a sag grade change, the ramp must include a transition section of at least 2 metres to prevent vehicles scraping or bottoming.  Plans must include an assessment of grade changes of greater than 1:5.6 (18%) or less than 3 metres apart for clearances, to the satisfaction of the responsible authority.	<b>Complies:</b> Appropriate transition sections have been provided to prevent scraping or bottoming.

## 5.2 Swept Path Assessment

### Site Access

An assessment of the accessibility to/from the site using the 'Autodesk Vehicle Tracking' software has been conducted. It was found that two opposing B99 design vehicles (99.8<sup>th</sup> percentile car), could pass at the site access point in a suitable manner. Further, all vehicles will be able to enter / exit the site in a forward direction.

### Car Parking Spaces

An assessment of the accessibility to/from the critical parking bays was also undertaken using the B85 design vehicle (85<sup>th</sup> percentile car) and it was found that each of the critical parking space could be accessed (ingress and egress) in a satisfactory manner.

### Summary

The assessment indicates that the access arrangements and car parking layout have been designed appropriately and in accordance with the requirements of the Monash Planning Scheme and/or AS/NZS 2890.1:2004.

The swept path assessment has been provided within Appendix A.

## 6.1 Traffic Generation

### Child Care Centre Traffic Generation

The RTA Guide to Traffic Generating Developments (October 2002) indicates a peak hourly traffic demand of between 0.7 to 0.8 vehicle trips per child in the AM and PM peak hours.

A survey conducted by Ratio Consultants at the existing Ariston Child Care Centre in Newtown (Geelong) confirms that Child Care Centres typically generate a peak hourly traffic demand in the order of 0.8 vehicle trips per child during the PM peak hours. The 'Ariston' Child Care Centre study also indicated that the peak traffic generation AM and PM hours of Child Care Centres typically occurs between 8:00am to 9:00am and between 4:45pm and 5:45pm.

Applying a rate of 0.8 vehicle trips per child, the proposed 184 place Child Care Centre would generate approximately 147 vehicle movements (combined for staff and visitors of the proposed Child Care Centre).

It is anticipated that all staff trips will be arrivals in the morning peak and departures in the afternoon peak, whilst parent/carer trips will be evenly split between inbound and outbound during both the morning and afternoon peak hours.

As such, it is expected that the 14 spaces allocated to staff during AM and PM peak times will generate 14 arrivals and 14 departures during the AM and PM peak hours respectively, whilst the remaining 133 anticipated vehicle movements will be evenly split between inbound and outbound movements. The resultant anticipated traffic generation associated with the proposal is summarised in Table 6.1.

**Table 6.1: Child Care Centre Traffic Generation**

	AM Peak	PM Peak
Arriving Trips	81 vph (including 14 staff)	66 vph
Departing Trips	66 vph	81 vph (including 14 staff)
<b>Total Trips</b>	<b>147 vph</b>	<b>147 vph</b>

### Café Traffic Generation

Daily vehicle trips generated by the café tenancies are anticipated to be equivalent to that of a restaurant and are specified under the RTA Guidelines for Traffic Generating Development, 2002:

- 60.0 daily trips per 100 square metres gross floor area; and
- 5.0 trips per 100 square metres gross floor area during the evening peak hour.

Application of the respective rates to the 148 square metre cafe results in a traffic generation of approximately 89 daily trips and 7 peak hour trips. As a conservative measure, it is assumed that the café will generate 7 trips during both the morning and evening peak periods, evenly split between arrival and departures.

The estimated traffic generation for the café component is shown below, in Table 3.4:

**Table 6.2: Café Traffic Generation**

	AM Peak Hour	PM Peak Hour
Arriving trips:	4 vph (including 2 staff)	3 vph
Departing trips:	3 vph	4 vph (including 2 staff)
<b>Total trips:</b>	<b>7 vph</b>	<b>7 vph</b>

### Summary

A summary of the overall peak hour traffic generation for the proposed development is presented in Table 6.3:

**Table 6.3: Overall Traffic Generation**

	AM Peak Hour	PM Peak Hour
Arriving trips:	85 vph	69 vph
Departing trips:	69 vph	85 vph
<b>Total trips:</b>	<b>154 vph</b>	<b>154 vph</b>

## 6.2 Traffic Distribution and Impact

The additional traffic generated by the proposed development will flow directly to/from Anthony Drive and then onto the surrounding road network, primarily via Waverley Road. It is considered that Anthony Drive and the surrounding road network have the ability to accommodate the increase in traffic estimated to be generated by the proposed development, particularly noting that the central median along Waverley Road will restrict vehicle movements to/from the intersection of Anthony Drive to left-in / left-out movements only, which will help this intersection accommodate the additional traffic even during periods of peak activity.

Vehicles seeking to depart the site to the east from Anthony Drive are able to conveniently turn left onto Waverley Road and then use the right-turn / U-turn slot at Regent Street (located only 30 metres to the west of Anthony Drive) to undertake a convenient U-turn and travel east along Waverley Road.

Vehicles seeking to enter the site from the west will not be able to turn right into Anthony Drive from Waverley Road (due to the central median along Waverley Road). Accordingly, vehicles seeking to enter the site from the west will either need to:

- Drive past Anthony Drive on Waverley Road and access the site via Pinewood Drive and the local residential road network to the south of the subject site. This represents a detour of less than 3 minutes.
- Take a different route from their origin to enable them to turn left into Anthony Drive from Waverley Road (e.g., using the Blackburn Road

exit if travelling along the Monash Freeway as opposed to the Forster Road exit). This also represents a detour of less than 3 minutes.

Users of the on-site car park will primarily be regular in nature (staff members and parents and guardians of children) who will quickly become familiar with the access arrangements and determine the safest and most convenient way to access the site.

On the basis of the above, it is expected that proposed mixed-use development will not create adverse traffic safety or operational impacts along Anthony Drive, Waverley Road or the surrounding road network.

## 7.1 Clause 52.34-5 – Bicycle Parking Requirements

Clause 52.34-3 of the Monash Planning Scheme outlines the requirements for bicycle parking for various uses. The bicycle parking requirements for the proposed development are outlined in Table 7.1 below:

**Table 7.1: Bicycle Parking Requirement**

Use	User	Statutory Parking Rate	Statutory Requirement
Childcare Centre	-	N/A	-
Café (Food & Drinks Premises) 148 sqm	Employee	1 space to every 300 sqm of leasable floor area	0 spaces
	Customer	1 space to every 500 sqm of leasable floor area	0 spaces
<b>TOTAL</b>			<b>0 spaces</b>

Based on the above assessment, the proposed use of the site has no statutory requirement to provide any bicycle parking spaces on-site. Notwithstanding this, it is proposed to provide a total of 22 bicycle parking spaces.

Most notably, it is anticipated that a significant portion of the trade generated by the café will be pedestrians and cyclists using the realigned Scotchmans Creek Trail and accordingly the generous provision of bicycle parking will service many of these users.

It is understood that the proposed café component of the development will accommodate up to 126 patrons within the indoor and outdoor areas. Case study data collected by Ratio Consultants of the North Point Café in Brighton which is located directly adjacent to an off-road shared path along the foreshore (Bay Trail) indicated that approximately 10% of the cafes trade was generated by cyclists. Application of this rate to the proposed café would result in a peak bicycle parking demand of 13 spaces. The proposed provision of 22 spaces greatly exceeds this demand and will ensure capacity for other users including staff of the café and staff of the childcare centre.

Accordingly, the proposal exceeds the requirements of the Monash Planning Scheme and is considered to be appropriate bicycle parking provision.

## 7.2 Bicycle Parking Layout

The proposed 22 bicycle parking spaces for the development will be in the following arrangement:

- Four (4) staff/employee spaces within wall mounted vertical bicycle parking rails (such as the Cora vertical wall mounted bicycle parking racks) located on ground floor near the store room;
- Six (6) staff/employee spaces within wall mounted vertical bicycle parking rails (such as the Cora vertical wall mounted bicycle parking racks) the basement;
- 12 public bike parking spaces within six (6) floor mounted double sided 'hoop' rails (such as the Arc De Triomphe bicycle parking rails along the site's frontages Scotchmans Creek Trail frontage.

Bicycle parking spaces have been designed in accordance with the dimensional requirements of AS2890.3:2015. More specifically, the following standards have been met:

- The proposed bicycle parking provides 55% bicycle parking spaces within ground level (horizontal rails), which exceeds the requirement outlined in AS2890.3:2015 that 20% of bicycle parking must be provided via ground level rails.
- Floor mounted horizontal bicycle rails are spaced at 1.0 metre intervals, with an envelope of 0.5 metres in width and 1.8 metres in length for each bicycle, which is accessed via an aisle with a width of at least 1.5 metres.
- Wall mounted vertical bicycle rails are spaced at 1000mm intervals, with an envelope of 0.5 metres in width and 1.2 metres in length for each bicycle, which is accessed via an aisle with a width of at least 1.5 metres.

Accordingly, it is considered that the bicycle parking has been designed appropriately and in accordance with the relevant sections of AS2890.3:2015.

The bicycle parking specifications are provided within Appendix B.



### **8.1 Loading Arrangements**

Clause 65.01 of Monash Planning Scheme outlines the provision of loading facilities and states the following:

*“Before deciding on an application or approval of a plan, the responsible authority must consider, as appropriate:*

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

The proposed development does not have a dedicated loading bay. Loading and delivery activities related to the proposed uses on site will occur outside of peak pick-up and drop-off periods of the child care centre. These activities will be primarily undertaken by vans and smaller trucks and can be accommodated within the on-site car parking spaces outside the peak periods. Alternatively loading activities could also be undertaken within the on-street parking spaces along Anthony Drive, if required.

Accordingly, it is considered that loading and unloading associated with the proposal can suitably be undertaken.

### **8.2 Waste Collection**

A Waste Management Plan (WMP) has been prepared Ratio Consultants. Waste is proposed to be stored within the bin storage room provided within the basement of the development.

It is understood that waste will be collected on-site, outside the proposed operating hours of the childcare centre by a private contractor via a 6.4-metre-long Mini Rear Loader Truck.

A swept path assessment demonstrates the ability for this vehicle to enter the site in a forward direction, collect waste and depart the site onto Anthony Drive in a forwards direction.

This is considered to be an acceptable arrangement from a traffic engineering perspective.

The swept path assessment for the waste collection truck has been provided within Appendix C.

## 9 Conclusion:

It is proposed to construct a mixed-use development including a Child Care Centre and a café on land at 444-454 Waverley Road, in Mount Waverley. The Child Care Centre will have a capacity to accommodate a total of 184 children. The café will have a floor area of 148 sqm. The development will provide a total of 46 car parking spaces and 22 bicycle parking spaces.

Based on the above assessment, it is considered that:

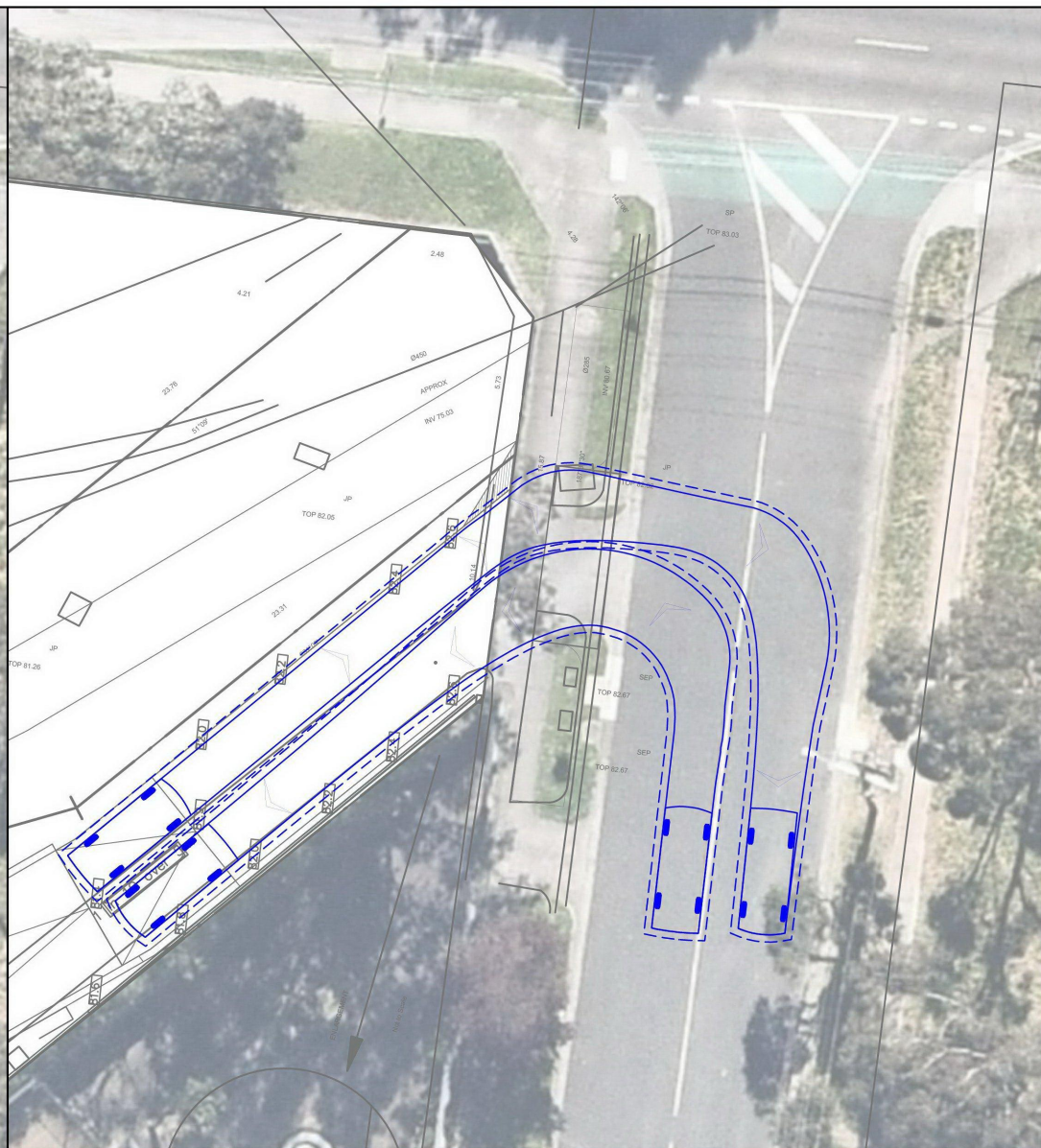
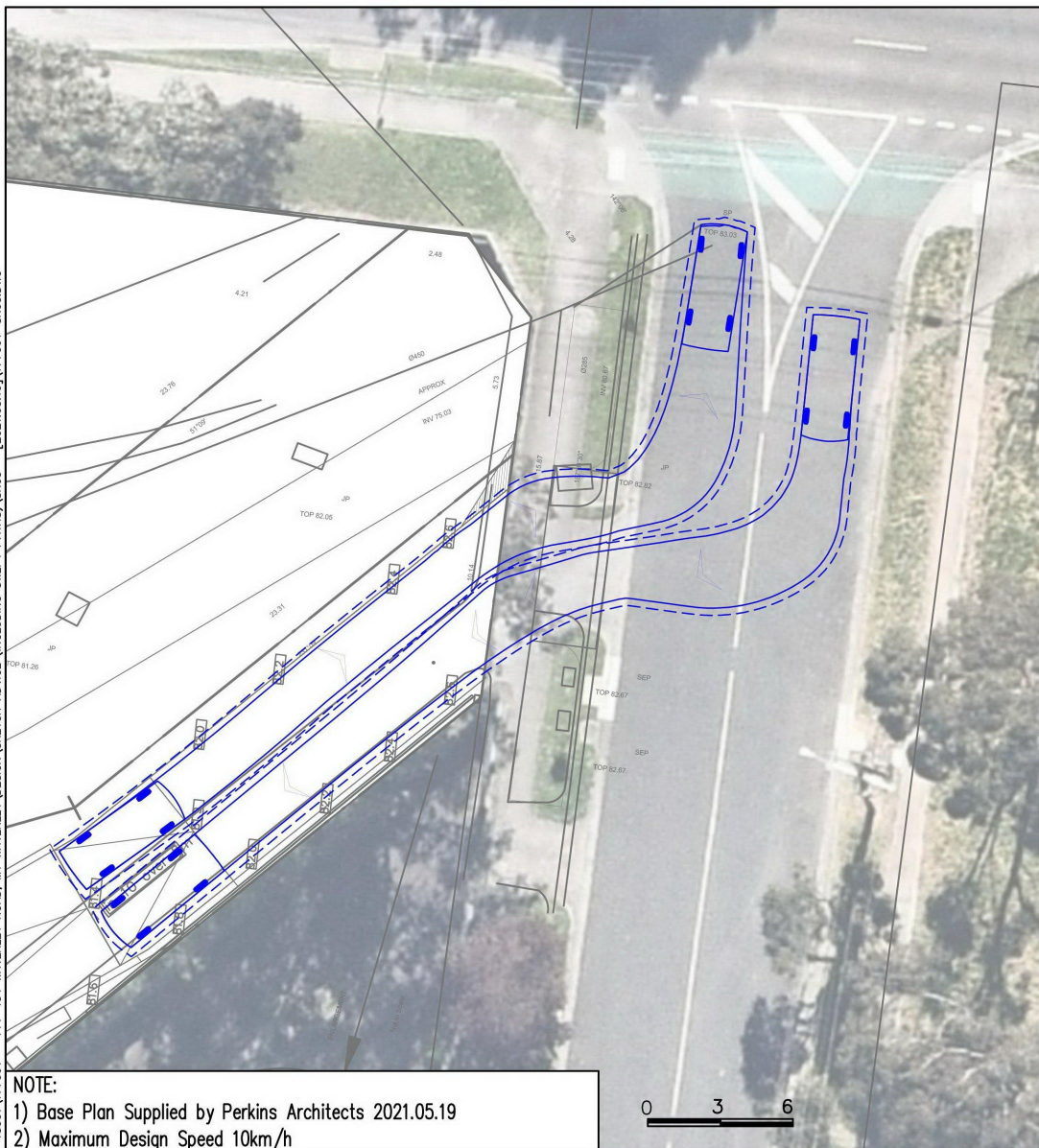
- The proposed 46 car parking spaces (40 spaces for the Child Care Centre, five (5) spaces to the café use and a shared DDA space) exceeds the parking requirements of Clause 52.06 of the Monash Planning Scheme and is therefore considered acceptable.
- The development does not trigger a requirement for bicycle parking provision. Nevertheless, a total of 22 bicycle parking spaces are proposed to be provided throughout the site which will comfortably cater for the demand generated by users of the development.
- The proposed access arrangements, car/bicycle parking layout have been designed in general accordance with the dimensional requirements of Clause 52.06 of the Monash Planning Scheme and the relevant sections of Australian Standard AS2890 series.
- The level of traffic generated by the proposed development can be accommodated by the adjacent road network without creating adverse traffic safety or capacity impacts.

Overall, the proposed development has been suitably designed and is not expected to create adverse traffic or parking impacts in the precinct.

# Appendix A Swept Path Assessment



Y:\75500-18001\17706T - 444-454 WAVERLEY ROAD, MT WAVERLEY\DESIGN\SKETCH ADVISE (INCLUDING SWEPT PATHS)\SK05 - [2021.05.19]\17706T-SK05.DWG



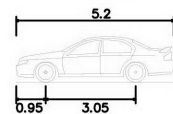
**NOTE:**

- 1) Base Plan Supplied by Perkins Architects 2021.05.19
- 2) Maximum Design Speed 10km/h

# ratio:

RATIO CONSULTANTS PTY LTD  
 ABN 005 422 104  
 8 GWYNNE STREET  
 CREMORNE, VICTORIA 3121  
 TELEPHONE (03)9429 3111  
 FACSIMILE (03)9429 3011

B99 Vehicle (AS/NZS2890.1:2004)



Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	2.200m
Min Body Ground Clearance	0.312m
Track Width	1.840m
Lock to Lock Time	4.00 sec
Curb to Curb Turning Radius	6.30m

VEHICLE ENVELOPE (FORWARD)  
300mm CLEARANCE (FORWARD)  
VEHICLE ENVELOPE (REVERSE)  
300mm CLEARANCE (REVERSE)

Proposed Residential Development  
 452-454 Waverley Road, Mount Waverley  
 Swept Path Assessment



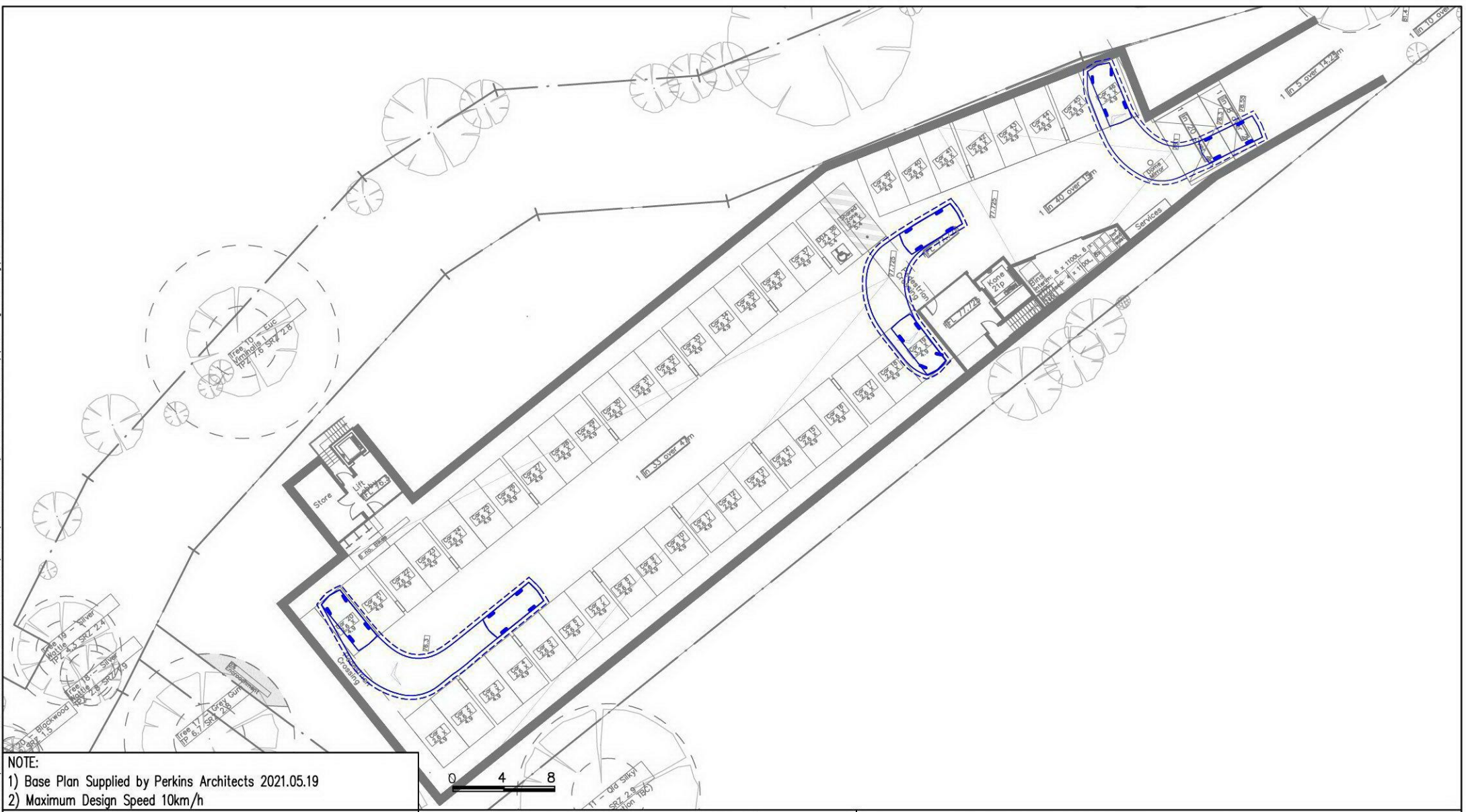
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DATE  
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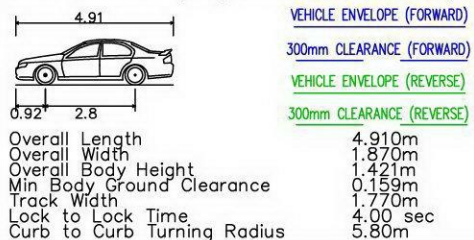


**NOTE:**  
 1) Base Plan Supplied by Perkins Architects 2021.05.19  
 2) Maximum Design Speed 10km/h



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B85 Vehicle (AS/NZS2890.1:2004)

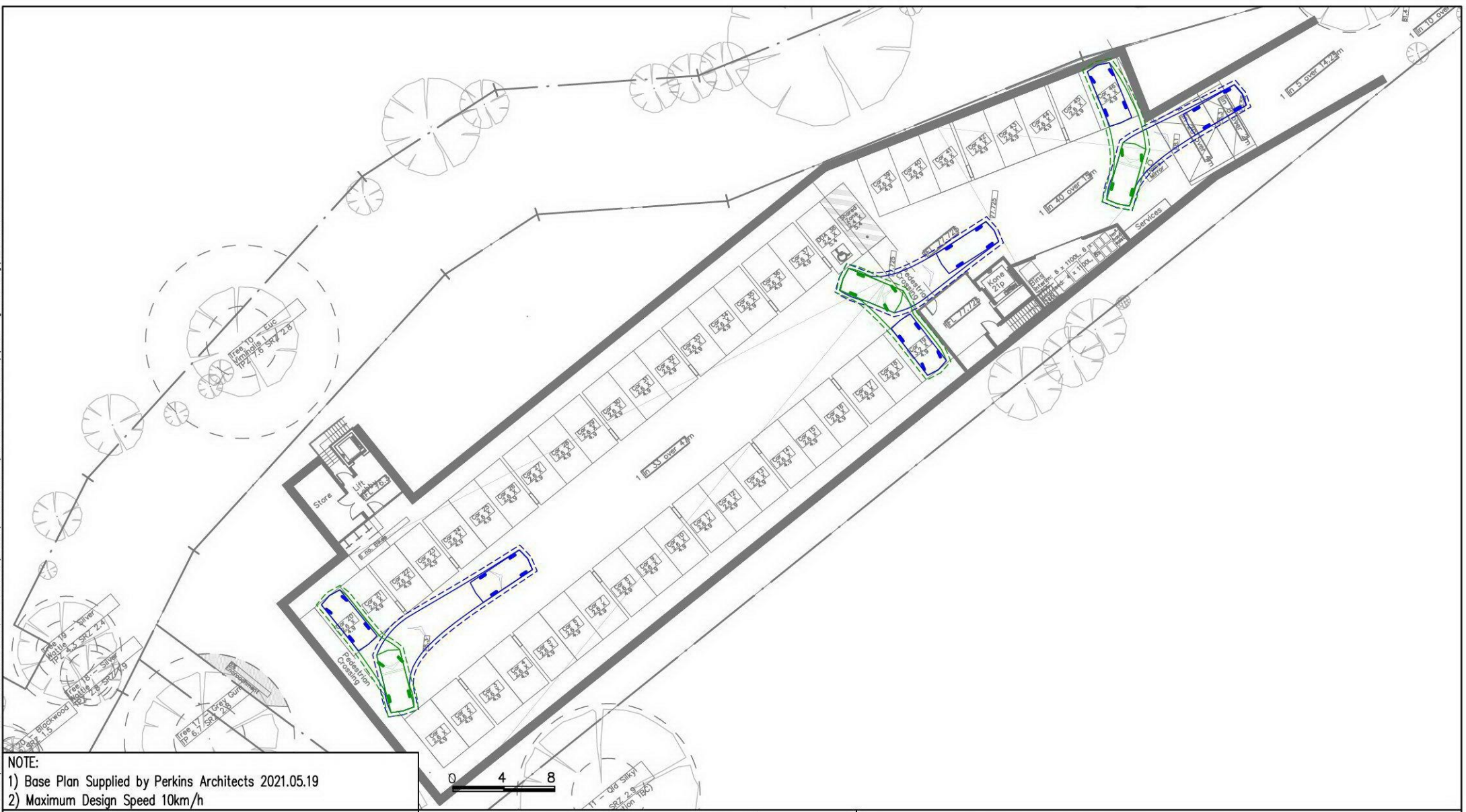


Proposed Residential Development  
 452-454 Waverley Road, Mount Waverley  
 Swept Path Assessment



RATIO REFERENCE	SHEET No.	SCALE	DATE
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**NOTE:**  
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 2) Maximum Design Speed 10km/h

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 CREMORNE, VICTORIA 3121  
 TELEPHONE (03)9429 3111  
 FACSIMILE (03)9429 3011

**B85 Vehicle (AS/NZS2890.1:2004)**

VEHICLE ENVELOPE (FORWARD)  
 300mm CLEARANCE (FORWARD)  
VEHICLE ENVELOPE (REVERSE)  
 300mm CLEARANCE (REVERSE)

Overall Length	4.910m
Overall Width	1.870m
Overall Body Height	1.421m
Min Body Ground Clearance	0.159m
Track Width	1.770m
Lock to Lock Time	4.00 sec
Curb to Curb Turning Radius	5.80m

Proposed Residential Development  
 452-454 Waverley Road, Mount Waverley  
 Swept Path Assessment

RATIO REFERENCE	SHEET No.	SCALE	DATE
17706T-SK05/JM	3 of 5	1:400@A4	19/05/2021

# Appendix B Bicycle Parking Specifications



# CORA BIKE RACK

## PRODUCT SPECIFICATION SHEET



## CVR SERIES

### CVR2N VERTICAL WALL MOUNTED BIKE RACKS

The Cora CVR Series provide space efficient vertical wall mounted bike parking spaces. The CVR2N rack is an improved design to hold 2 bikes in a very compact manner supporting each bike by it's frame. Best suited to indoor or covered areas such as car parks and bike rooms.

#### Capacity

- Single side access - 1 bike
- Double sided access - 2 bikes

#### Construction

- Heavy duty high quality steel or 304 stainless
- 28mm CHS x 2.5mm

#### Fixings

- 3 x M8 x 40mm pin head torx security screws with tool, washers and nylon wall plugs included

#### Finishes

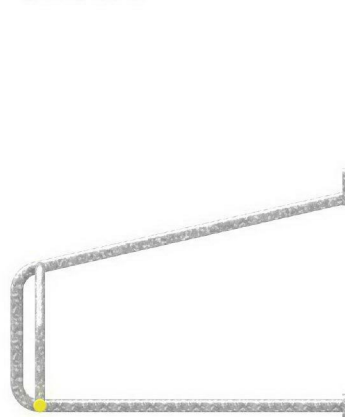
- In stock - Galvanised
- Option - 304 Stainless Steel
- Option - Colour Powder Coat (Cora standard colour range)

#### Assembly

- Supplied partially assembled for assembly and mounting on site

#### Compliance

- Rack is AS2890.3 (2015) compliant

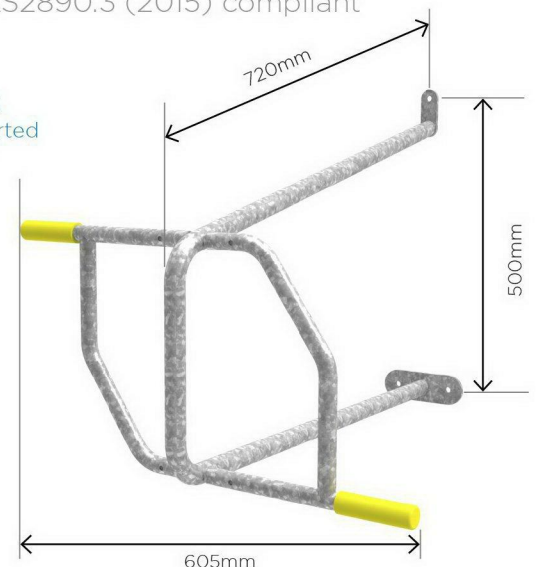


SIDE VIEW



ISOMETRIC VIEW

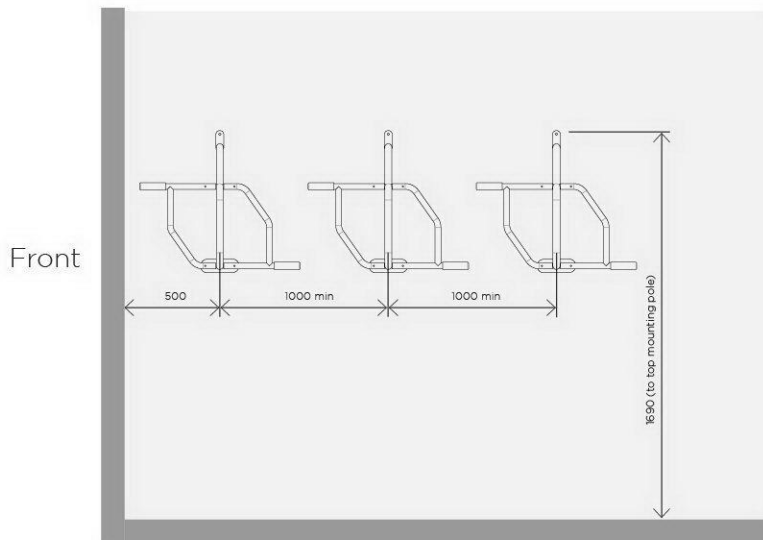
CVR2N  
2 bike capacity,  
bicycles supported  
by bike frame





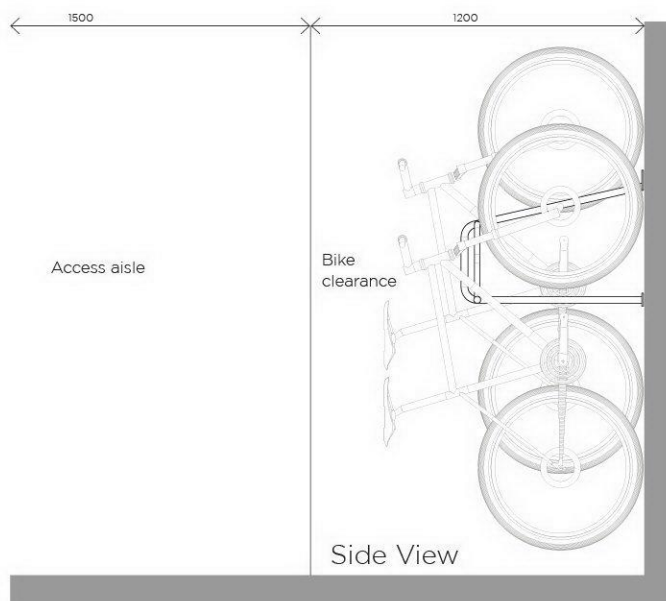
# CORA BIKE RACK

## PRODUCT SPECIFICATION SHEET



Note: Racks must be mounted at the same height. They must be spaced at 1000mm centres with 500mm from any obstruction.

\* Minimum ceiling height 2200mm



### CVR2N LAYOUT GUIDE

To comply with AS2890.3 (2015),  
1000mm spacings are shown.

For specific assembly and installation instructions relating to CVR Series racks, please refer to individual instruction information sheets.

Racks should not be installed, based on the information on this sheet alone.



**CORA**  
BIKERACK

PH 1800 249 878

sales@cora.com.au

www.cora.com.au

# CORA BIKE RACK

## PRODUCT SPECIFICATION SHEET



## CBR SERIES

### CBR1'B' AND CBR1'F' BIKE RACKS

The Cora CBR Series offer a wide range of attractive bike rail designs that can be installed as single units or in clusters to accommodate 1 to 100's of bikes in an unlimited variety of configurations and in challenging spaces. CBR Series bike rails are designed to support the entire bike frame and each unit can accommodate up to 2 bikes, with 1 bike on each side.



#### Capacity

- Single side access - 1 bike
- Double sided access - 2 bikes

#### Construction

- Heavy duty high quality steel or 316 stainless steel
- 48.3 OD x 2.77 MD

#### Fixings

- 'B' 4 x M10 x 80mm stainless steel anchor bolts with tamper resistant fasteners supplied. 150mm x 6mm round base plate
- 'F' Concrete fix in-situ bike rail ends include spigots for a secure fix

#### Finishes

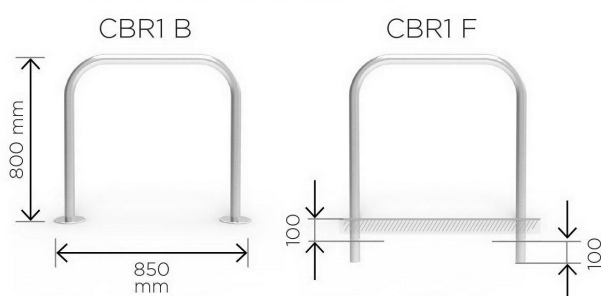
- In Stock - Galvanised
- In Stock - 316 Stainless Steel with Electropolish
- Option - 304 Stainless Steel
- Option - Colour Powder Coat (Cora standard colour range)

#### Assembly

- Supplied fully welded and assembled

#### Compliance

- Rack is AS2890.3 (2015) compliant



# CORA BIKE RACK

## PRODUCT SPECIFICATION SHEET

### CBR LAYOUT GUIDE

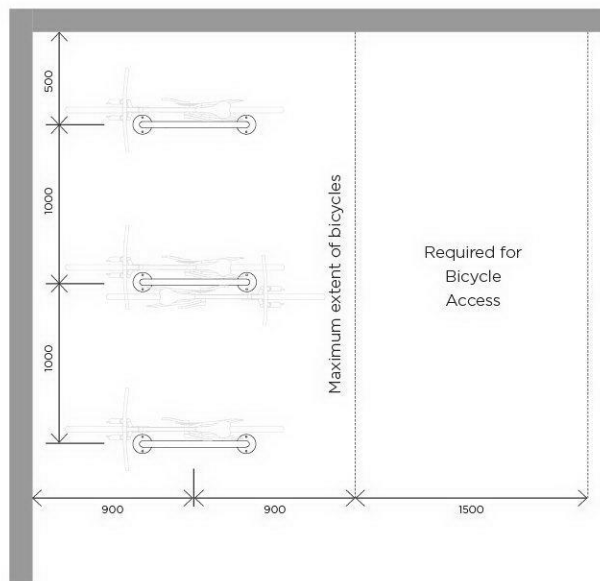
To comply with AS2890.3 (2015)

**CBR Series racks should be mounted with the spacings shown.**

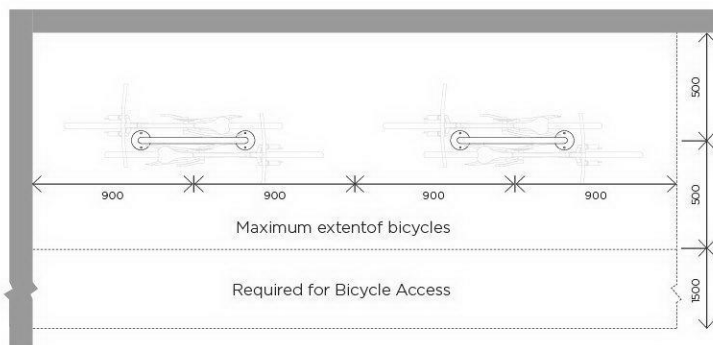
For specific assembly and installation instructions relating to CBR Series racks, please refer to individual instruction information sheets.

Racks should not be installed, based on the information on this sheet alone.

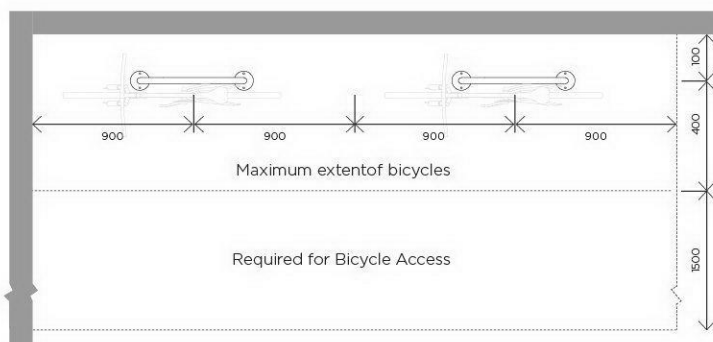
Parallel  
Double  
Side



In- Line  
Double  
Side

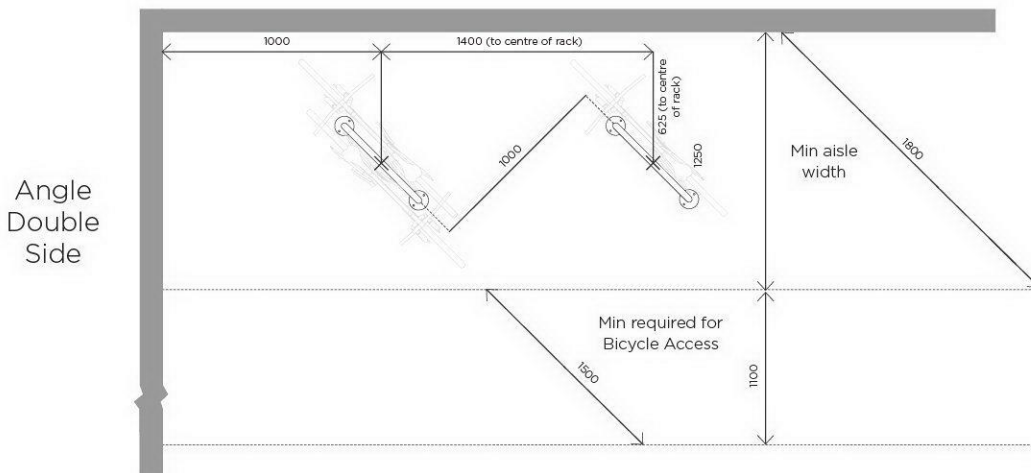
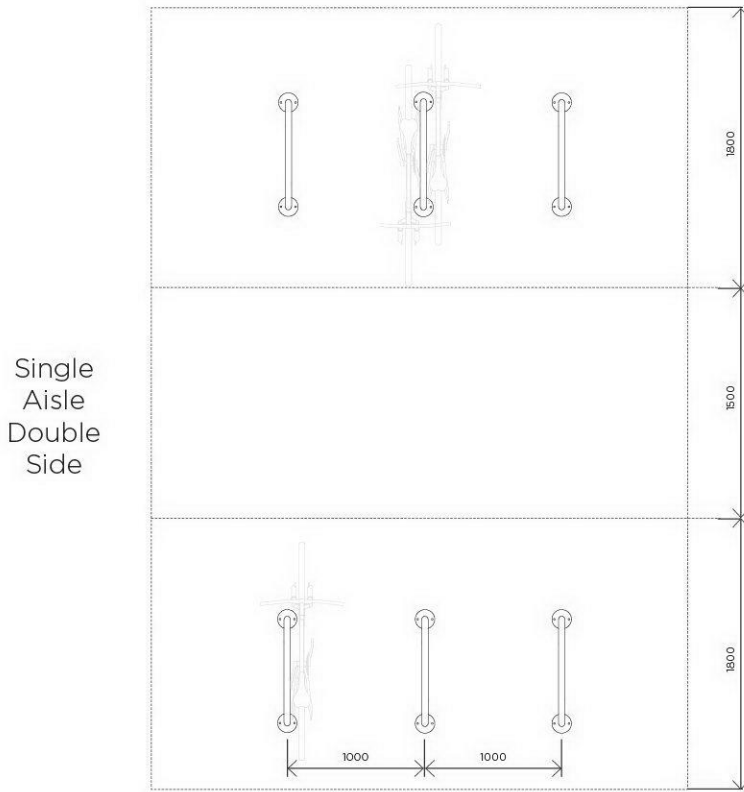


In- Line  
Single  
Side



# CORA BIKE RACK

## PRODUCT SPECIFICATION SHEET



### CBR LAYOUT GUIDE

To comply with AS2890.3 (2015)  
**CBR Series racks should be mounted with the spacings shown.**

For specific assembly and installation instructions relating to CBR Series racks, please refer to individual instruction information sheets.

Racks should not be installed, based on the information on this sheet alone.



PH 1800 249 878

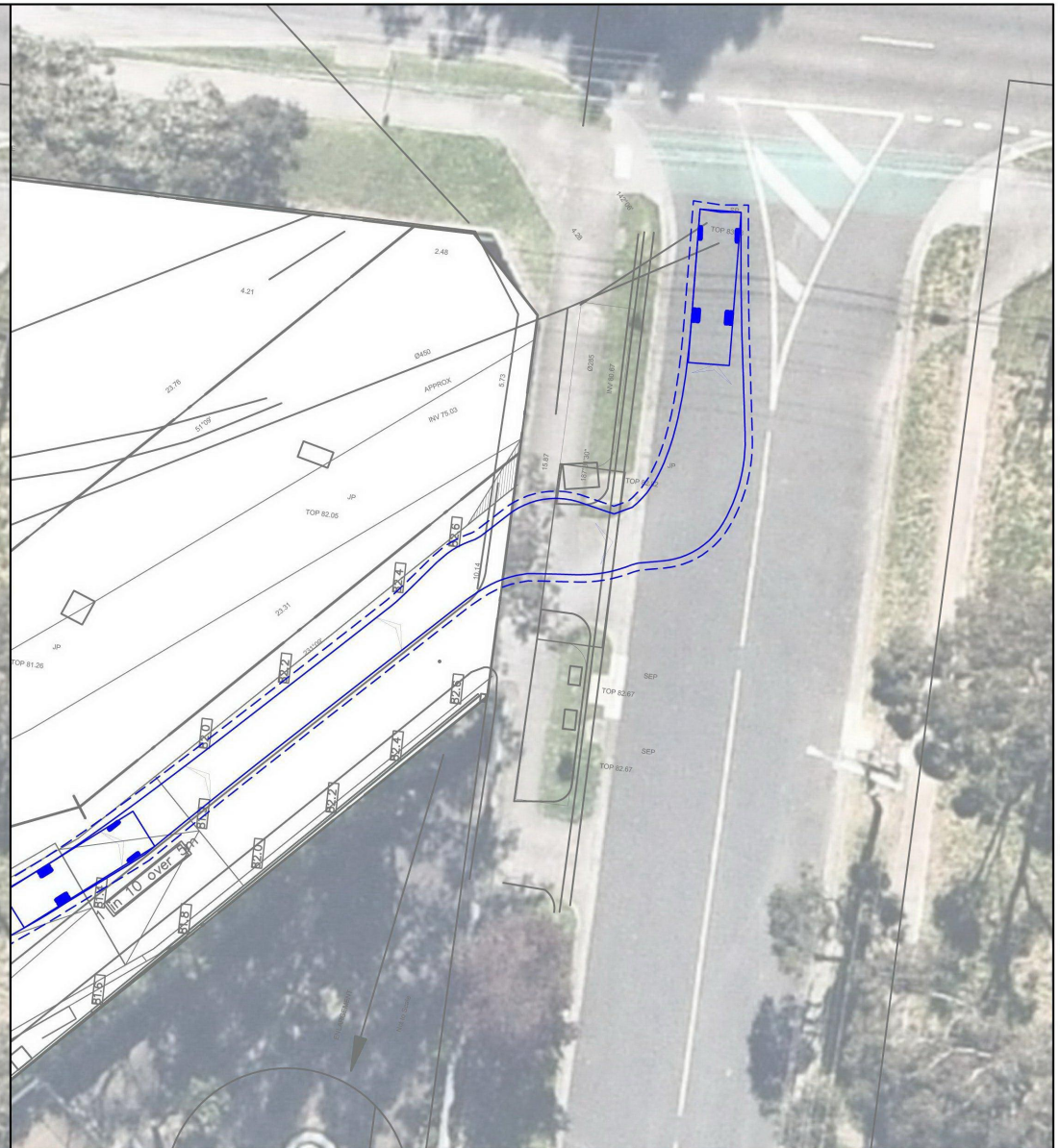
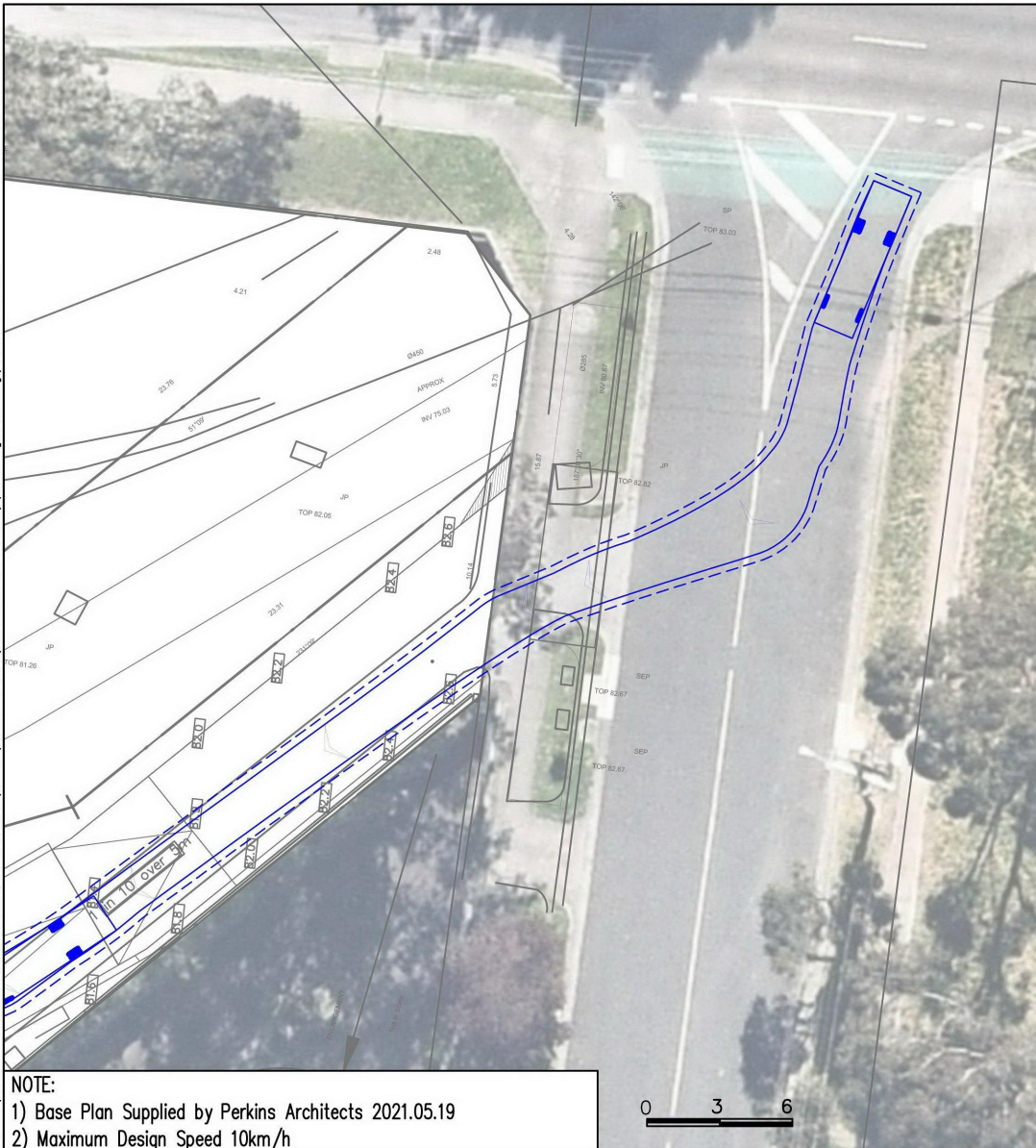
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# Appendix C Waste Truck Swept Path Assessment



Y:\75500-18001\17706T - 444-454 WAVERLEY ROAD, MT WAVERLEY\DESIGN\SKETCH ADVICE (INCLUDING SWEPT PATHS)\SK05 - [2021.05.19]\17706T-SK05.DWG  
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NOTE:  
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 2) Maximum Design Speed 10km/h

**ratio:**

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 8 GWYNNE STREET  
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 FACSIMILE (03)9429 3011

Mini-Rear Loader Waste Collection Vehicle

VEHICLE ENVELOPE (FORWARD)  
300mm CLEARANCE (FORWARD)  
VEHICLE ENVELOPE (REVERSE)  
300mm CLEARANCE (REVERSE)

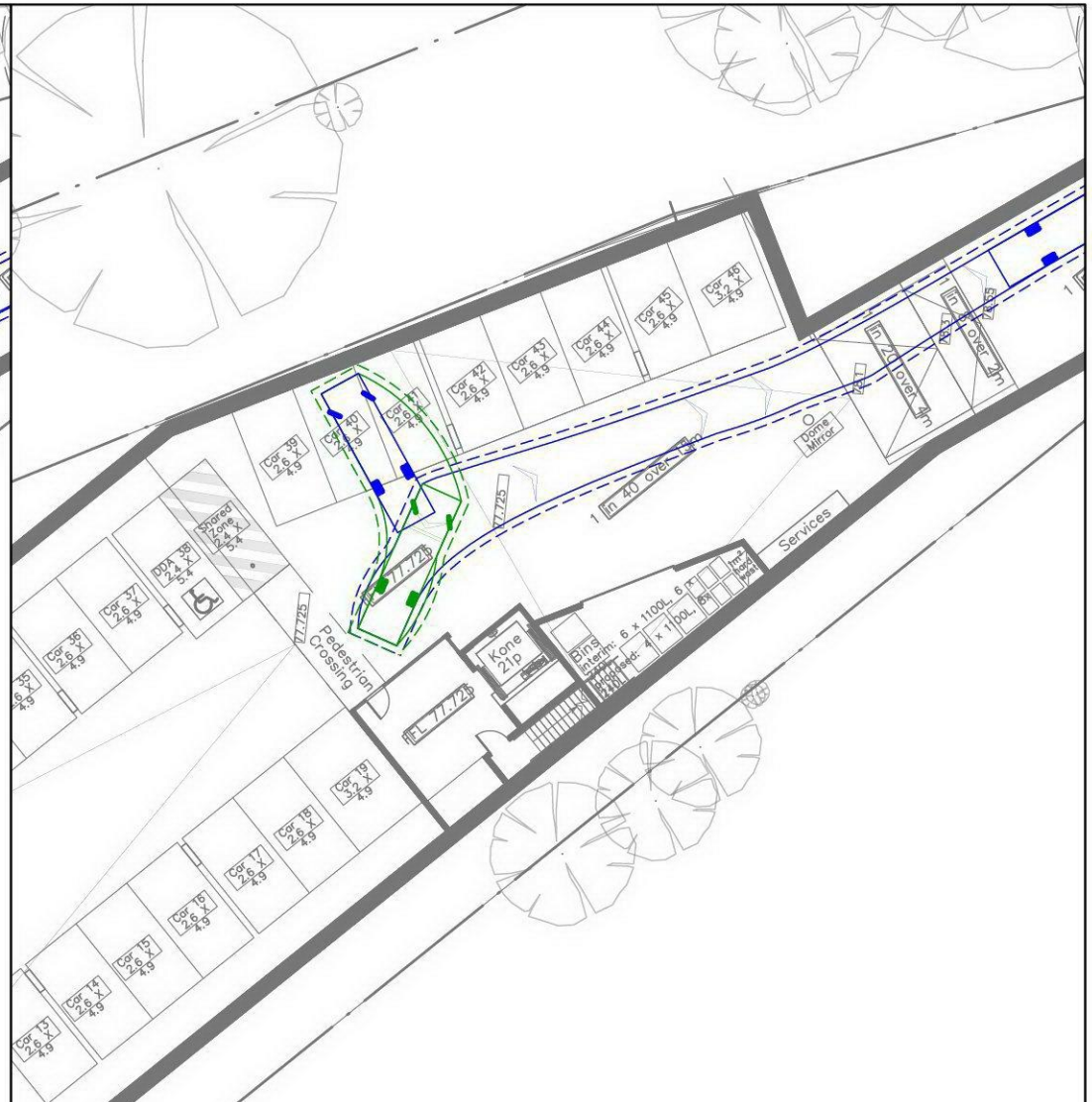
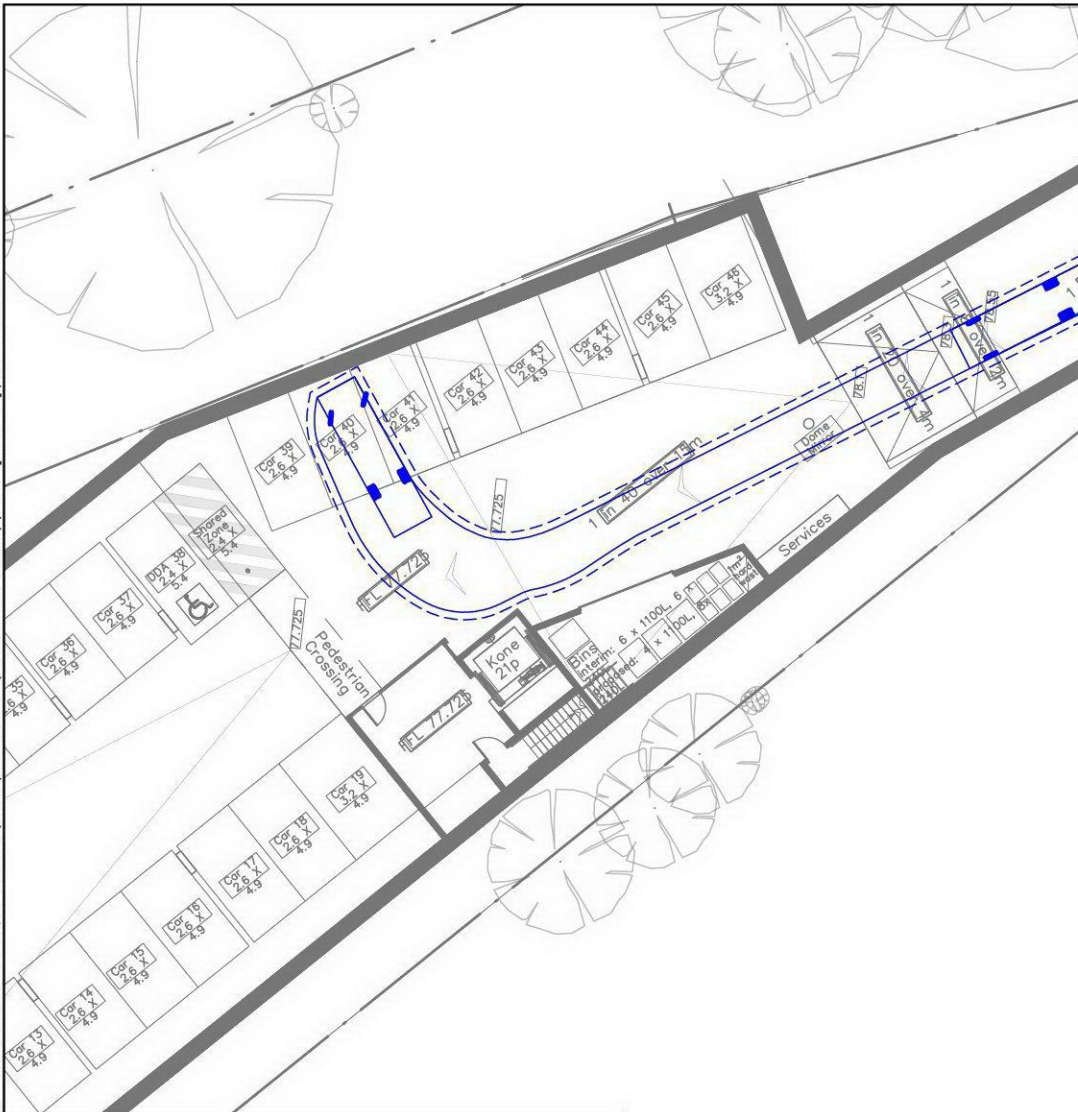
Overall Length	6.345m
Body Width	1.700m
Overall Body Height	2.080m
Min Body Ground Clearance	0.205m
Track Width	1.670m
Lock to Lock Time	4.00 sec
Curb to Curb Turning Radius	6.450m

Proposed Residential Development  
 452-454 Waverley Road, Mount Waverley  
 Swept Path Assessment

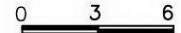


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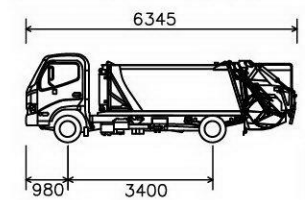
**NOTE:**  
 1) Base Plan Supplied by Perkins Architects 2021.05.19  
 2) Maximum Design Speed 10km/h



**ratio:**

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 ABN 005 422 104  
 8 GWYNNE STREET  
 CREMORNE, VICTORIA 3121  
 TELEPHONE (03)9429 3111  
 FACSIMILE (03)9429 3011

Mini-Rear Loader Waste Collection Vehicle



**VEHICLE ENVELOPE (FORWARD)**  
 300mm CLEARANCE (FORWARD)  
**VEHICLE ENVELOPE (REVERSE)**  
 300mm CLEARANCE (REVERSE)

Overall Length 6.345m  
 Body Width 1.700m  
 Overall Body Height 2.080m  
 Min Body Ground Clearance 0.205m  
 Track Width 1.670m  
 Lock to Lock Time 4.00 sec  
 Curb to Curb Turning Radius 6.450m

Proposed Residential Development  
 452-454 Waverley Road, Mount Waverley  
 Swept Path Assessment



RATIO REFERENCE	SHEET No.	SCALE	DATE
17706T-SK05/JM	5 of 5	1:300@A4	19/05/2021