Traffix Group

ADVERTISED PLAN

Traffic Engineering Assessment

Proposed Mixed Use Development

Northcote Village

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Prepared for
T&P Northcote Development Pty Ltd

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Level 28, 459 Collins St
MELBOURNE VIC 3000

Office 38, L4/60 Moorabool St
GEELONG VIC 3220

Traffix Group Pty Ltd
ABN: 32 100 481 570

T: 03 9822 2888
traffixgroup.com.au

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Appendix A Swept Paths

1. Introduction

1.1. Preamble

Traffix Group has been engaged by T&P Northcote Development Pty Ltd to prepare a Traffic Engineering Assessment for the proposed Northcote Village development.

In the course of preparing this assessment, we inspected the subject site, reviewed development plans and background material, and assessed the car parking and traffic impacts of the proposal.

1.2. Previous Permit

On 19 May 2025, the City of Darebin issued a Planning Permit (D/474/2020/A) at the discretion of the VCAT for the redevelopment of the southern portion of Northcote Plaza, subject to a number of conditions.

The existing permit allows for the redevelopment of the southern portion of the site, specifically the land held by Lots 79, 100, 101, 102 & Common Property, for the purposes of a mixed use development, including:

- A refurbished and redeveloped retail offering at the lower levels, including a total of 7,649m^2 of general mixed retail use, including a major supermarket tenant and a number of smaller mini-major tenants, plus specialty retail;
- 587 residential apartments, provided in a number of towers above the main retail/mixed use areas; and
- A standalone office tower located in the car parking area, at the western entry to the Plaza, providing 3,100m^2

In relation to access and external works, the Permit allows/requires:

- Vehicle access from Separation Street for a multi-level basement car parking, providing residential and retail parking;
- A widening of Separation Street to provide for additional turn lanes, and upgrades to the public realm and streetscape along the boundary of the site;
- Vehicle access from the Council Car Park (via Breavington Way) serving a mixed loading dock, serving separate supermarket, mixed retail and residential loading docks.

In relation to parking, the permit includes:

- 696 car parking spaces, including 190 public/retail spaces, 31 commercial staff spaces, and 475 residential spaces.
- 749 bike spaces, provided as a mixture of residential, commercial staff and visitor spaces.
- 49 motorcycle spaces.

1.3. This Application

A new proposal has been prepared as part of an Application through the Development Facilitation Pathway (DFP) which has been through multiple rounds of advice and workshops with the Office of the Victorian Government Architect (OVGA).

New Application Plans have been prepared by Wardle, dated June 2026 which show a staged, mixed use development, including a full line supermarket, 670 apartments, and other retail/mixed use spaces.

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

In undertaking the assessment we have had regard to the previously approved development.

We have also collected updated traffic and parking data, and undertaken additional updated traffic analysis and reporting.

Our assessment is as follows.

2. Existing Conditions

2.1. Site Context (Northcote Plaza)

Northcote Plaza is a shopping centre located on the northern side of Separation Street, approximately 150 metres east of its intersection with High Street in Northcote.

The shopping centre site is irregular in shape and has a total area of approximately 63,000 square metres. It is generally bound by Breavington Way and the All Nations Park to the east, Dennis Street at the north, Separation Street at the south and Robbs Parade/Hunter Street at the west.

The existing shopping centre site is understood to have approximately 21,000 square metres of retail space, including two Coles supermarkets, a Kmart, and specialty retail, and a residential tower approximately mid-block to the site.

The shopping centre is unique in that retail tenancies are held in multiple, individual titles. The car parking and access on the western side of the Plaza is generally common property (some areas of parking are individually titled). The eastern car parking is understood to be Council owned and leased to the shopping centre.

2.2. Application Site

The site is addressed as Lots 100, 101 and 102 of 25 Separation Street, Northcote.

The application site is located at the southern end of the Shopping Centre site and is most easily described as the existing Coles and Kmart tenancies and a small portion of the car park which is located immediately north-west of the Plaza's western entry.

A locality plan, aerial photo and excerpt of the relevant Title Plans are provided at Figure 1, Figure 2 and Figure 3 respectively.

It is noted that the Title Plan refers to the subject lots as Lots 50, 51 and 76 at Figure 3.

A summary of the existing floor areas and parking provisions for the Application Lots is provided below:

Lot 100 (50) and 101 (51) includes:

- 3,000 square metre supermarket
- 47 car spaces in the north-western at-grade parking area

Lot 102 (76) includes

- 6,200 square metre existing retail tenancy (KMART)
- 44 car spaces at the at-grade car parking at the south (accessed from the Council car park).

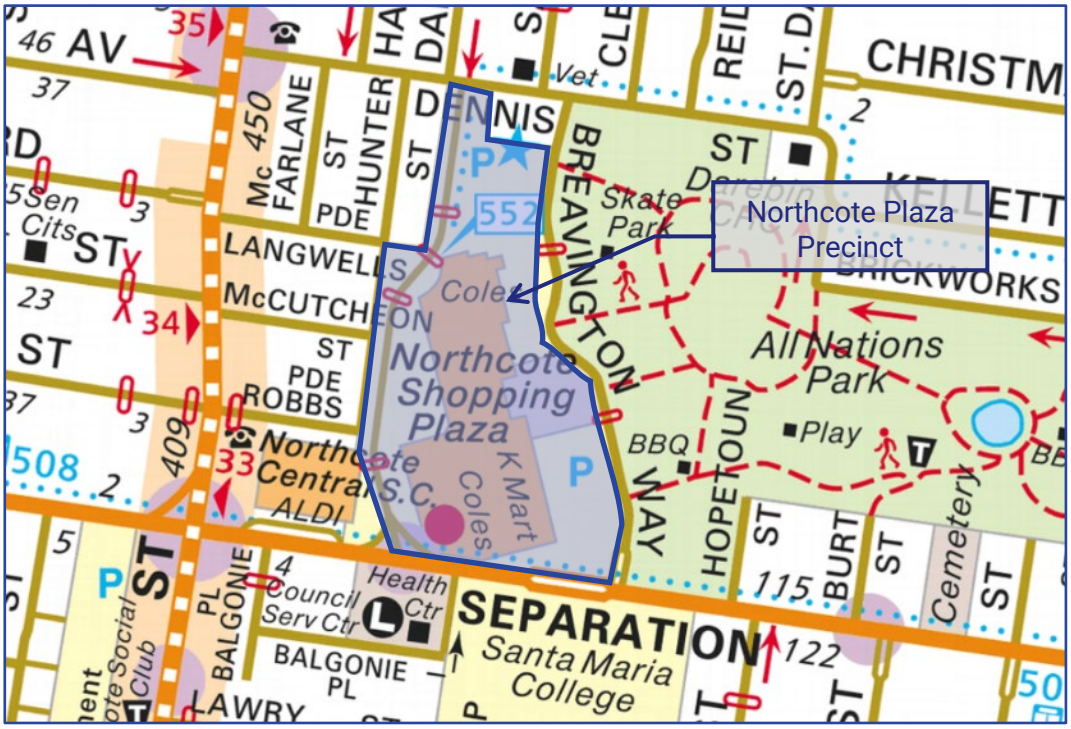


Figure 1: Locality Plan



Figure 2: Aerial View of Shopping Centre Site.

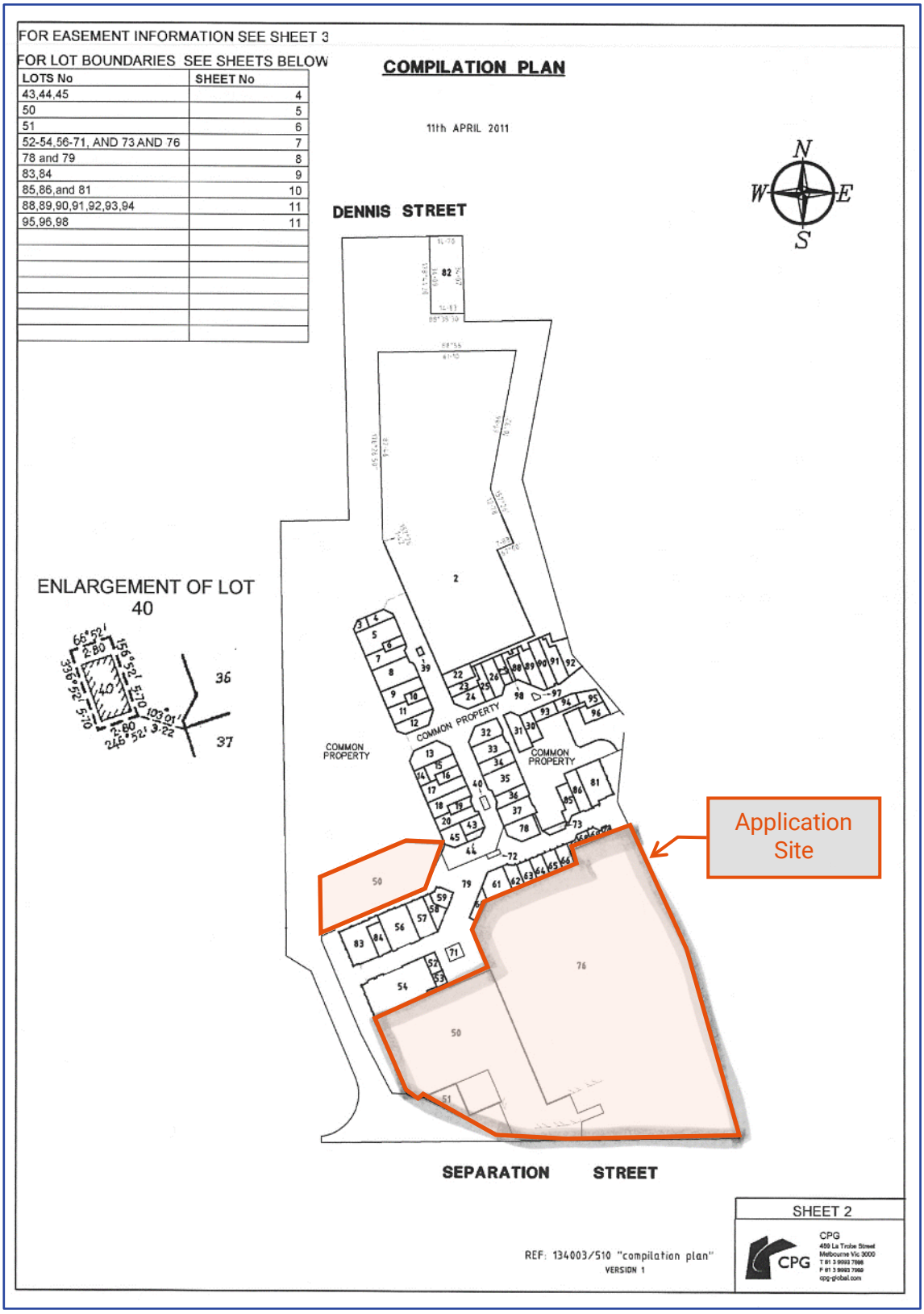


Figure 3: Title Plan

2.3. Planning Scheme Zones & Surrounding Uses

The subject site is zoned as a Commercial Zone – Schedule 1 (C1Z) under the Darebin Planning Scheme. A planning zone map is provided at Figure 4.

Land uses in the immediate vicinity of the subject site are mixed, including Public Park and Recreation Zone to the east, Residential Zoning to the immediate west north and south, as well as Commercial Zoning abutting High Street.

Separation Street is within Road Zone 2.

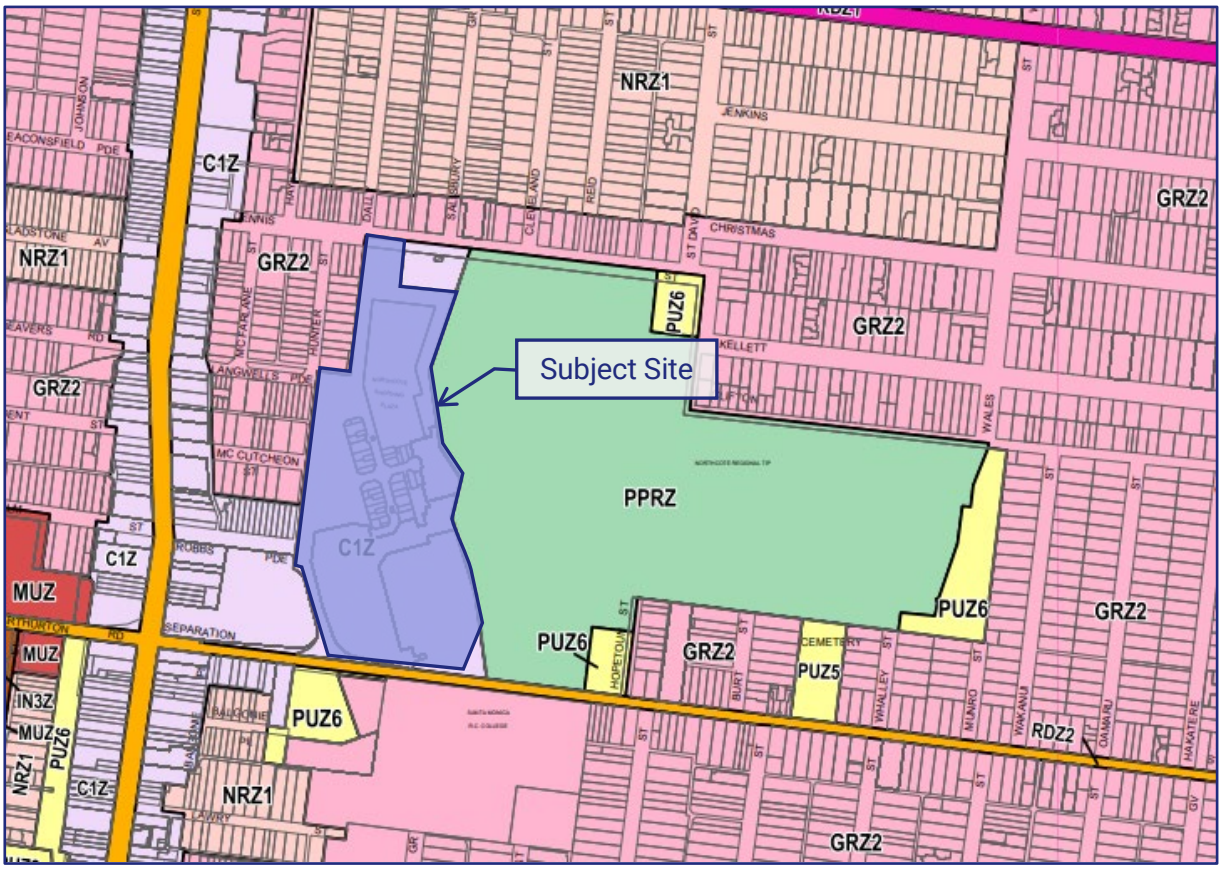


Figure 4: Land Use Zoning Map

The site is situated within the Northcote Activity Centre, which accommodates a mixture of land uses including food and drink premises, supermarkets, a mixture of residential density and other commercial uses.

Northcote Central Shopping Centre, is located immediately south-west of the site (west of the signalised access) and provides for an ALDI and specialty retail, a bank and some office floor area. We understand the site has a gross commercial floor area of approximately 9,200 square metres.

Other significant land uses in the vicinity of the subject site include Santa Maria College and Northcote Library which are both located immediately south of Separation Street.

Northcote Railway station situated approximately 550 metres south-west of the site.

Figure 5 illustrates the site location in this context, including 400 metre and 800 metre radii.

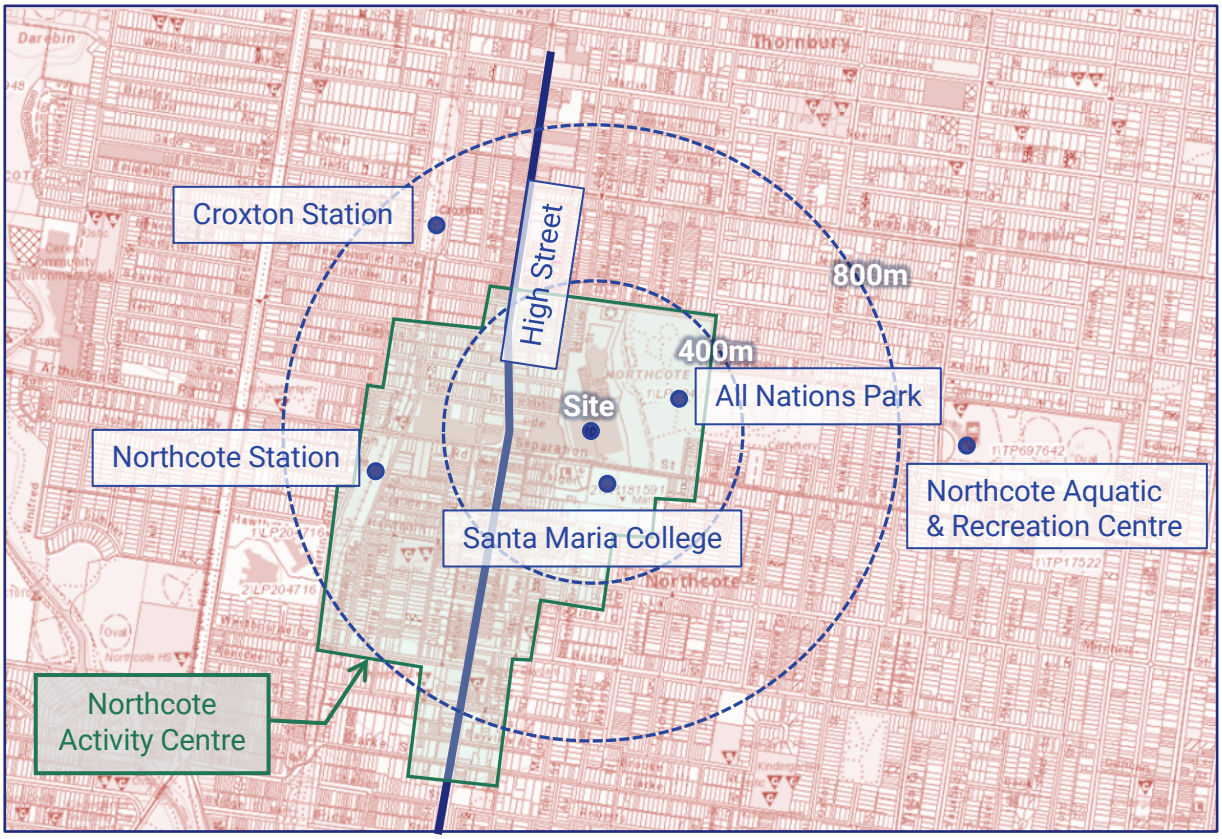


Figure 5: Surrounding Uses

2.4. Road Network

2.4.1. Separation Street

Separation Street is a major Council Road within a Road Zone Category 2 (RDZ2) generally aligned in an east-west direction.

In the vicinity of the site, Separation Street has a carriageway of approximately 8.3 metres, accommodating a single traffic lane in each direction, widening to provide for separate turn lanes at the Shopping Centre access points and an indented bus stop at the site's southern boundary.

Separation Street is typically No Stopping restricted. A posted speed of 40km/h applies to Separation Street along the site's frontage.

Turn restrictions apply to the properties along the southern side of Separation Street along the site frontage including peak hour 'No Right Turn' restrictions into the school on the southern side of Separation Street.

The Darebin Cycling Strategy 2013-2018 identifies Separation Street as an "Other Cycling Route" and has identified it as a location for "improvement in community consultation" as shown in Figure 6.



Figure 6: Darebin Cycling Strategy

We understand that Council has desires to provide improvements to cycle infrastructure along Separation Street, but it is important to note that part of the existing Separation Street pavement and northern footpath sits within the applicant's land. The existing road reserve along the site boundary, and to the east of the site (and also west of High Street) is constrained and insufficient to provide dedicated cycle lanes or pathways.

It should also be noted that Northcote Activity Centre Structure Plan (2007) identifies Separation Street as a key vehicle access road that supports the Activity Centre. It encourages improvements to pedestrian amenity and connections along Separation Street, particularly the northern side of the road.

2.4.2. Dennis Street

Dennis Street is a local Council Street which extends east from High Street, splitting into Kellett Street and Brickworks Lane further to its eastern end. It runs along the northern side of Northcote Plaza.

In the vicinity of the site, Dennis Street has a 13.0 metre wide carriageway, accommodating a single lane of through traffic, a bicycle lane and kerbside parallel parking in each direction.

A default speed limit of 50 km/h applies to Dennis Street.

2.4.3. Breavington Way

Breavington Way runs along the eastern boundary of the shopping centre site.

Part of Breavington Way is public land and within Council's Road Register (the section running south from Dennis Street and connecting to the residential tower approximately central to the site). The southern section of Breavington Way, linking to Separation Street is on Council car park title but is not listed on the Road Register.

Breavington Way generally has a width of approximately 7.0 metres, accommodating a single traffic lane in both directions.

2.4.4. Robbs Parade

Robbs Parade extends east from High Street for approximately 110 metres before aligning north abutting the site's western boundary towards Langwells Parade.

The east-west section (between High Street and the site) provides for two-way traffic and kerbside parallel parking and has footpaths on both sides.

The north-south section (adjacent to the Northcote Plaza boundary) operates as a Right of Way with a trafficable width of approximately 3.0 metres.

2.4.5. Western Internal Accessway

The western internal accessway is a private road aligned north-south connecting Separation Street and Dennis Street at the western portion of the site. It is in common land shown on the Northcote Plaza Title.

The site accessway has a typical width of approximately 7.0 metres accommodating for two-way traffic throughout the car parking areas. Speed humps and pedestrian crossings are provided along the road to manage traffic and pedestrian accessibility.

At its southern end, it widens to provide for an indented parking area on its eastern side (abutting the subject site) and access to the underground car park for the Northcote Central Shopping Centre on its western side.

Photographs of the surrounding road network are provided at Figure 7 to Figure 10.



Figure 7: Separation Street – View West



Figure 8: Separation Street – View East



Figure 9: Dennis Street – View West



Figure 10: Dennis Street – View East



Figure 11: Breavington Way – View North



Figure 12: Breavington Way – View South



Figure 13: Robbs Parade – View West (Road Section)



Figure 14: Robbs Parade – View South (RoW Section)



Figure 15: Western Accessway – View North



Figure 16: Western Accessway – View South

2.5. Crash Statistics

A review of the crash history has been undertaken for the past 5 years of available data (last updated to 31 July 2025) for the area immediately surrounding the subject site and the intersection of North Road/East Boundary Road as shown in Figure 17.

The data recorded three crashes on Separation Street within the review area. While two of the crashes are similar in nature, we do not believe that there is any safety risk to the road network along Separation Street. The details of the crashes are provided in Table 1.

Table 1: CrashStats Crash History

Location	Date	Time	Severity	Condition	DCA Code
Separation Street 94m West of Hopetoun Street	27/03/2022	6:30pm	Other	Day, Clear, Dry	121 – Right Through
Separation Street 10m East of Arthurton Road	28/01/2023	5:30pm	Serious	Day, Clear, Dry	100 – Pedestrian near side. Pedestrian hit by vehicle from the right
Separation Street 7m East of Arthurton Road	28/08/2023	12:15pm	Other	Day, Clear, Dry	100 – Pedestrian near side. Pedestrian hit by vehicle from the right

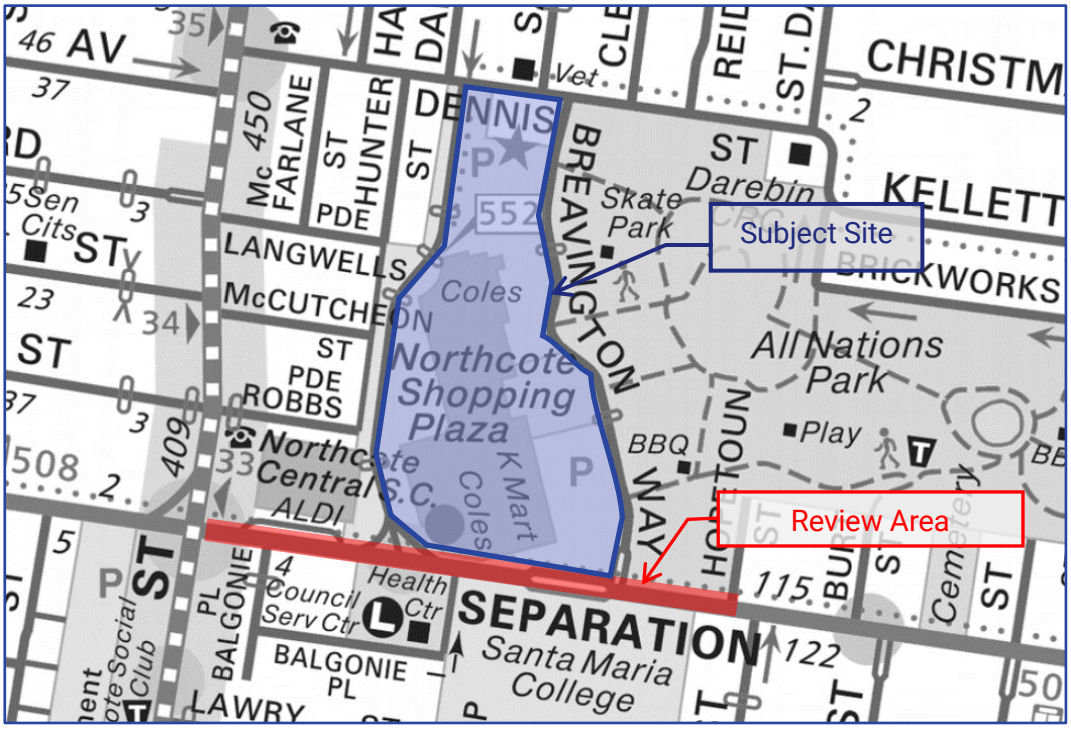


Figure 17: CrashStats Review Area

2.6. Sustainable Transport

The site has excellent access to sustainable transport modes as detailed below.

2.6.1. Pedestrian Accessibility

The site is well located to promote walking to everyday services, being situated within the Northcote Activity Centre and forming part of an existing (and proposed to be improved) Shopping Centre.

This area provides access to a variety of services such as supermarkets, restaurants, specialty shops, and other essential services, without the need for a car.

The proposal includes significant improvements to pedestrian accessibility and amenity surrounding the site to take advantage of the existing infrastructure in the area.

2.6.2. Bicycle Accessibility

The City of Darebin is very bicycle friendly municipality and the suburb of Northcote provides for access to multiple on and off-road bike lanes, paths and routes in proximity to the site.

The subject site has access to bicycle infrastructure with on-road bicycle lanes and informal bicycle routes on many roads in the immediate vicinity of the subject site, including Dennis Street, Darebin Road and Arthurton Road. An off-road shared path is also provided on St. Georges Road, west of the site.

The proposal includes a generous provision of bicycle parking on-site with convenient cyclist / pedestrian access. This will actively encourage the use of bicycle for future residents and employees.

2.6.3. Public Transport Services

The site is well served by public transport with train, tram and bus services accessible within walking distance. The available services in the vicinity of the site include:

- Train services on the Mernda line accessible from Northcote Railway Station, 550 metres to the west of the site.
- Tram Route 86 operates between Bundoora RMIT and Waterfront City Docklands, with stops provided within approximately 200 metres to the west of the site on High Street.
- Bus Route 508 operates between Alphington and Moonee Ponds, with stops provided along the site boundary on Separation Street.
- Bus Route 552 operates between North East Reservoir and Northcote Shopping Plaza, with stops provided in the site at the northern boundary.

Figure 18 shows the Public Transport Victoria (PTV) map of the City of Darebin in the context of the subject site, whilst a map showing the site location in this context, including 400 metre and 800 metre radii to demonstrate how easily the site can access these services.

The proposal includes convenient pedestrian linkages across the site and to existing pedestrian infrastructure on Separation Street and Robbs Parade that will link with existing tram and bus stops.

The relocation of the bus stop at the site frontage will conveniently link with the future plaza through the redeveloped site allowing convenient and immediate access to public transport services.



Figure 18: Public Transport Victoria (PTV) Map - City of Darebin

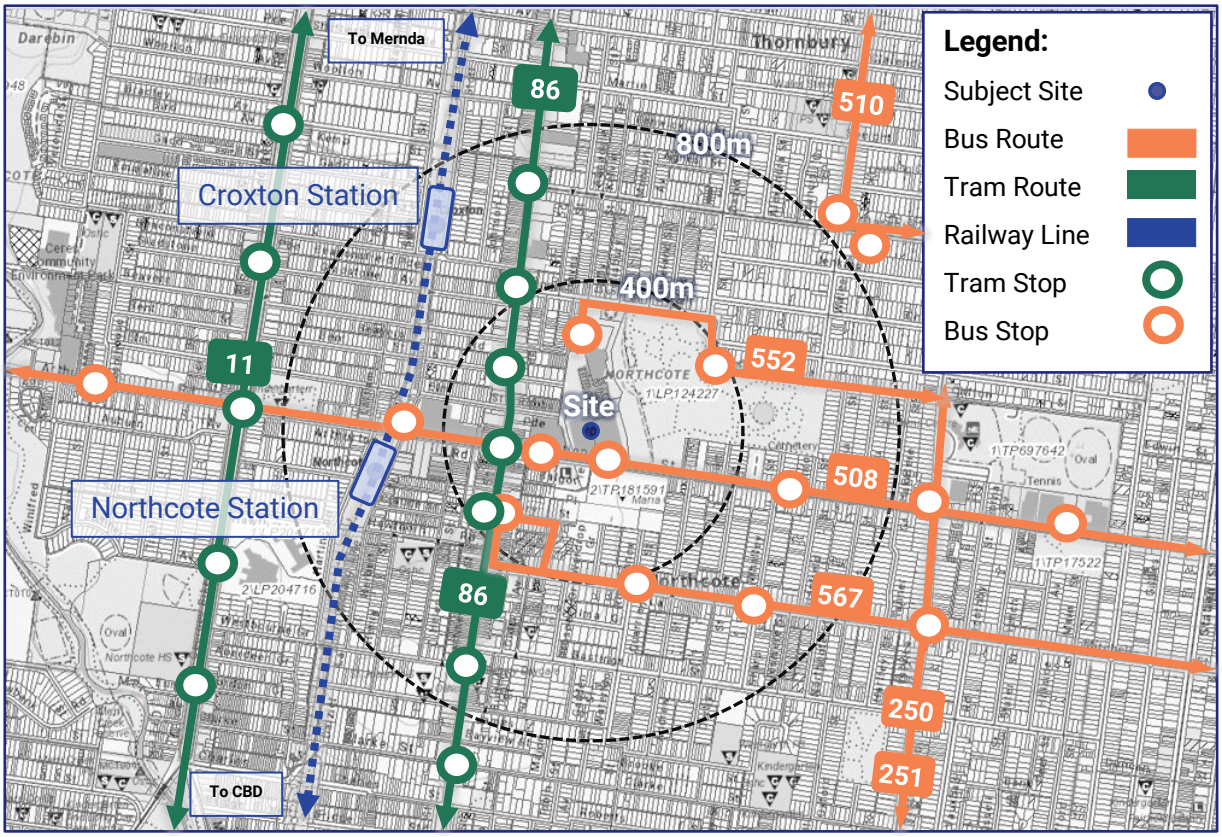


Figure 19: Public Transport Services in the Vicinity of the Site

2.6.4. Car Share Facilities

Car share schemes operate within the City of Darebin, in line with the Council's Transport Strategy, which sets the Council's broader vision to improve accessibility and provide alternative and sustainable ways of moving people and goods across the municipality.

Car share schemes provide access to a motor vehicle for the limited number of trips where a car may be required. This opportunity to access a car is both convenient and cost-effective as motor vehicles can be hired on an hourly or daily basis.

The availability of a car share scheme provides a suitable alternative to a private vehicle as it allows commuters to make smarter travel choices and actively encourages them to seek alternate transport modes for the majority of trips.

A number of commercially operated car share pods which are available in the vicinity of the subject site are shown in Figure 20, with the following two most closely located:

- Elm Street/High Street (GoGet) – approximately 150 metres to the west of the site
- Little Eastment Street/Arthurton Road (Flexicar) – approximately 250 metres to the west of the site

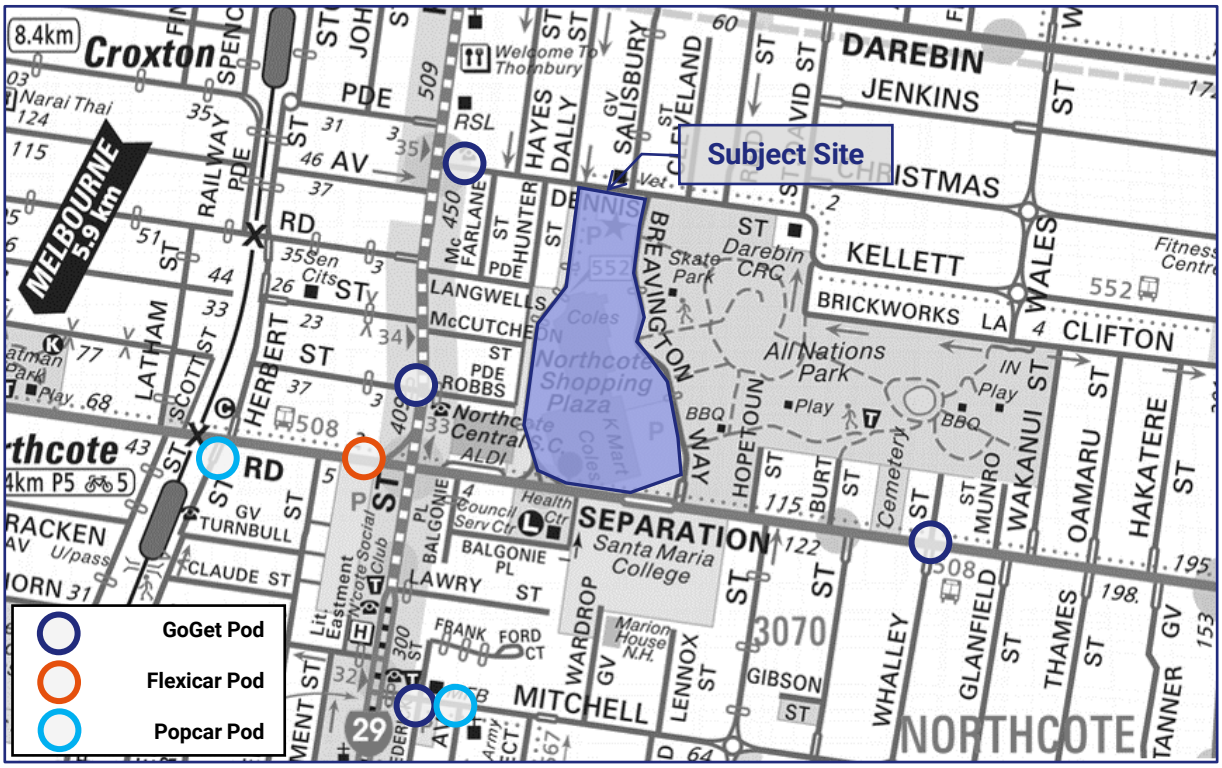


Figure 20: Proximate Car Share Pod Locations

3. Northcote Plaza

3.1. Existing Operation

The existing Northcote Plaza Shopping Centre site has historically operated with approximately 21,000 square metres of retail space, including two Coles supermarkets, a Kmart, and specialty retail, and a residential tower approximately mid-block to the site.

3.2. Existing Shopping Centre Car Parking & Access

Vehicle access is provided via four access points to the adjacent roads, being two to Separation Street (one signalised and one unsignalised) and two to Dennis Street (both unsignalised) as detailed below and as illustrated in Figure 21.

There is no access to Robbs Parade to the west for Northcote Plaza, however the Northcote Central basement car park does provide access to Robbs Parade.

Separation Street

- The south-eastern access is unsignalised and allows ingress/egress movements in all directions. It provides access to the Council Car Park which allows connections to the on-site loading area and on-site parking area at the southern and northern portion of the site.
- The south-western access is a signalised intersection which provides access to the car park at the western and northern portion of the site. It is noted that it also provides for access to the Northcote Central Shopping Centre underground car park which is located to the west and serves additional retail uses including an ALDI (and which links to Robbs Parade).

Dennis Street

- Both the north-western and north-eastern access are unsignalised intersections which allow ingress/egress movements in all directions. They are mainly used to access the car park at the northern portion of the site.

A further 233 car parking spaces are provided within a basement beneath the Northcote Central Shopping Centre building, which are restricted 2P.



Figure 21: Existing Access Arrangements

3.3. Existing Car Parking

Parking for the Northcote Plaza Shopping Centre is predominantly provided within at-grade parking.

The centre provides some 900+ car parking spaces for the public (excluding loading, mail and taxi zones) generally split as follows:

- Northern Car Park – 244 car spaces;
- Southern Car Park within Lot 102 – 44 car spaces;
- Council Car Park – 240 car spaces (including 7 DDA spaces);
- Western Car Park within Lot 100– 47 car spaces;
- Western Car Park – 258 car spaces (including 7 DDA spaces); and
- Eastern Car Park – 100 car spaces (including 2 DDA spaces).

The current on-site car parking is illustrated in Figure 2.

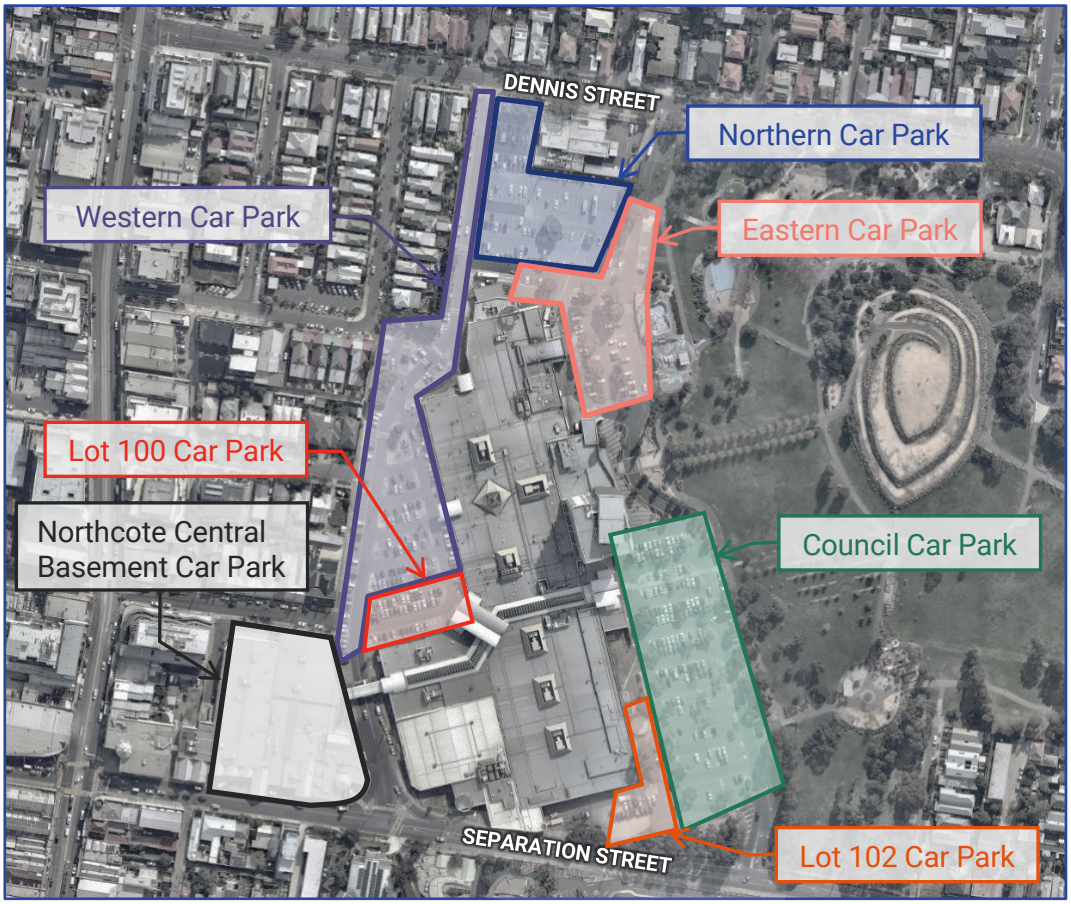


Figure 22: Existing Car Parking

3.4. Existing Traffic and Parking Conditions

3.4.1. General

To understand the existing traffic and parking conditions, Traffix Group commissioned Trans Traffic Survey to undertake traffic movement and parking occupancy surveys of the existing Northcote Plaza Shopping Centre.

Parking surveys were undertaken on Friday 28th, Saturday 29th and Sunday 30th March 2025 at hourly intervals between 7am to 10pm.

The traffic surveys recorded all turning movements at each access intersection and the parking occupancy between 7am to 7pm on Friday 13th March 2026 within the shopping centre car parks.

We also make reference throughout this report to historical traffic data collected in 2019 and 2020 that was collected as part of the original permit application, and included an assessment of the historical traffic generation of the precinct.

3.4.2. Car Parking Demands

The survey results identified that:

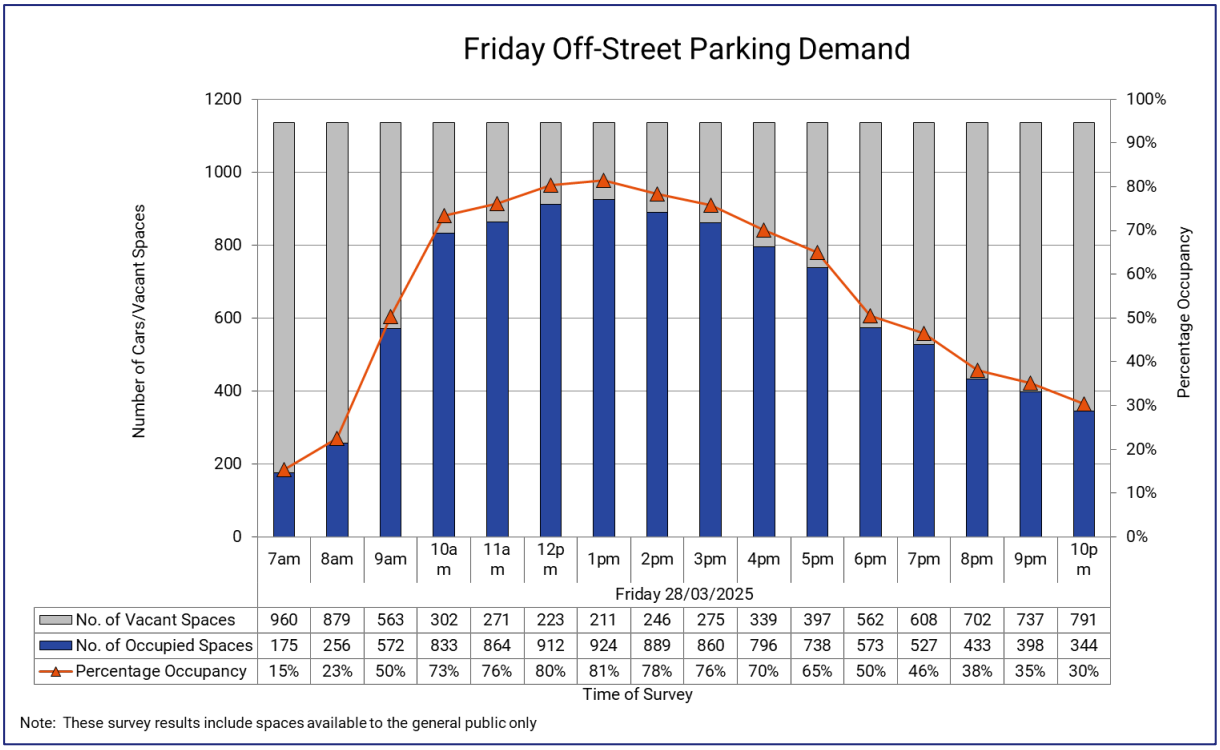
- Parking in the area surrounding the site continues to be predominantly controlled by short term parking restrictions (1P and 2P) with very limited long term parking available in the area.
- Parking is actively managed by Council to restrict long term (non permit) parking and protect existing residents who are eligible for permits.
- On-street, there is a parking supply of around 293 car parking spaces which varies dependent on time of day due to restrictions, but is generally short term restricted.
- Off-Street, there is a parking supply of around 1,135 spaces, excluding loading, mail and taxi zones, a significant proportion of this is short term parking.
- It is noted that these supplies are the same to those recorded in the 2024 surveys.

Specifically looking at the results of the surveys, we note the following:

- On the Friday:
  - On-street parking demand remained relatively moderate across the day, with a peak occupancy of only 65%, when 191 spaces were occupied and 101 spaces were available in the precinct. On-street demands were seen to be relatively consistent, with a higher peak during the lunchtime period, and a secondary peak in the evening.
  - Off-street parking was also well utilised during the lunchtime period, when 924 spaces were occupied and 211 were available, representing a peak occupancy of 81%. In the evening period, parking demands fell substantially to be less than 50% occupied from 5pm onward.
  - In total, in the peak period, there was never fewer than 312 parking spaces available both on and off-street during the daytime period. In the evening period, there was never fewer than 715 parking spaces available on and off-street combined. This occurred at 6pm, and demands eased into the evening
- On the Saturday:
  - On-street parking followed a similar trend to the Friday, where parking demands were relatively constant across the day with peaks at lunchtime and in the evening. On the Saturday, evening demands were marginally higher than the lunchtime, however parking remained readily available. A peak occupancy of 61% was recorded and 7pm, when 179 spaces were occupied and 114 spaces available in the precinct.
  - Off-street parking also followed a similar profile to the Friday, with the peak occurring of a lunchtime and demands easing of an afternoon and into the evening. A peak occupancy of 77% was recorded during the lunchtime period, when 871 spaces were occupied and 264 were available.
  - In total, in the peak period, there was never fewer than 379 parking spaces available both on and off-street during the daytime period. In the evening period, there was never fewer than 677 parking spaces available on and off-street combined. This occurred at 6pm, and demands eased into the evening.

- On the Sunday:
  - On-street parking demands were observed to be marginally higher on the Sunday compared to the Friday and Saturday during the lunchtime period. A peak occupancy during the day of 67% was recorded, when 197 spaces were occupied and 96 spaces available in the precinct. Unlike the Friday and Saturday, demands on the Sunday evening were lower.
  - Off-street parking demands were lower of the Sunday compared with the Friday and Saturday, with a peak occupancy during the day of 74% around the lunchtime period when 835 were occupied and 300 spaces were available.
  - In total, in the peak period, there was never fewer than 399 parking spaces available both on and off-street during the daytime period. These demands eased in to the evening.

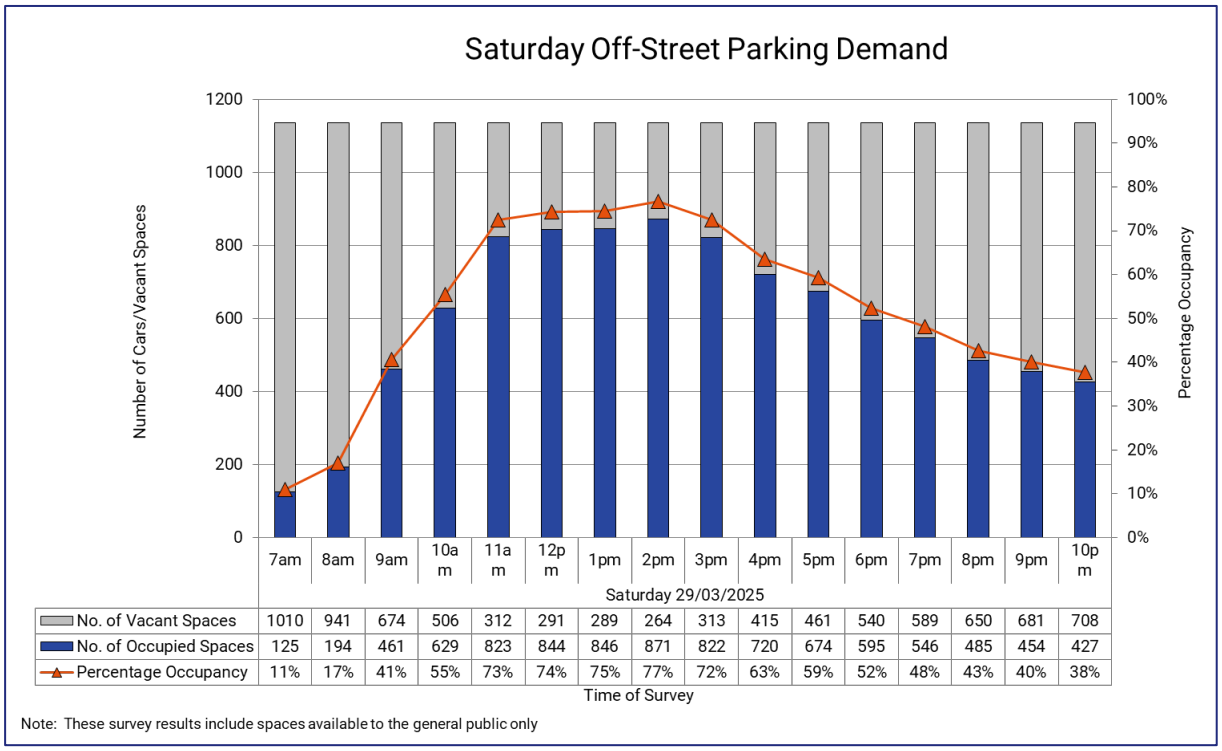
Charts showing the profiles of car parking occupancy is provided in Figure 23 to Figure 25 for the Friday, Saturday, and Sunday, respectively.



	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm
No. of Vacant Spaces	960	879	563	302	271	223	211	246	275	339	397	562	608	702	737	791
No. of Occupied Spaces	175	256	572	833	864	912	924	889	860	796	738	573	527	433	398	344
Percentage Occupancy	15%	23%	50%	73%	76%	80%	81%	78%	76%	70%	65%	50%	46%	38%	35%	30%

Note: These survey results include spaces available to the general public only

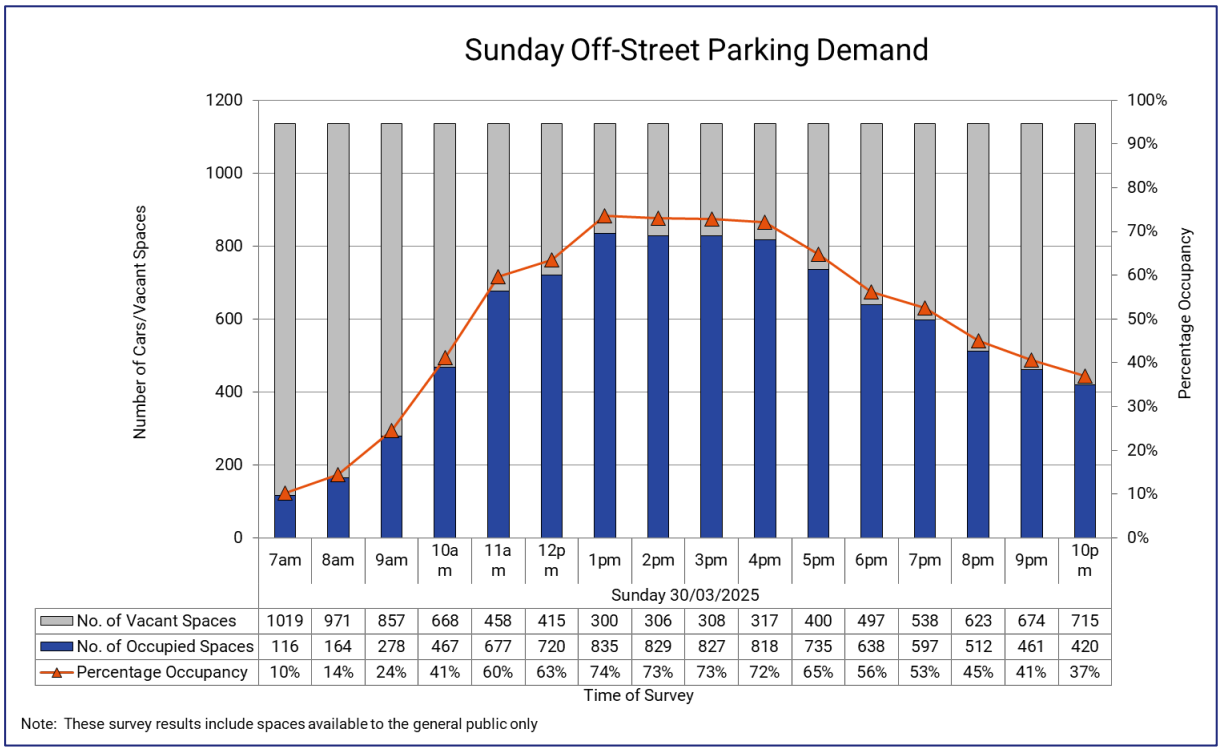
Figure 23: Friday Off-Street Survey Parking Occupancies



	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm
No. of Vacant Spaces	1010	941	674	506	312	291	289	264	313	415	461	540	589	650	681	708
No. of Occupied Spaces	125	194	461	629	823	844	846	871	822	720	674	595	546	485	454	427
Percentage Occupancy	11%	17%	41%	55%	73%	74%	75%	77%	72%	63%	59%	52%	48%	43%	40%	38%

Note: These survey results include spaces available to the general public only

Figure 24: Saturday Off-Street Survey Parking Occupancies



	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm
No. of Vacant Spaces	1019	971	857	668	458	415	300	306	308	317	400	497	538	623	674	715
No. of Occupied Spaces	116	164	278	467	677	720	835	829	827	818	735	638	597	512	461	420
Percentage Occupancy	10%	14%	24%	41%	60%	63%	74%	73%	73%	72%	65%	56%	53%	45%	41%	37%

Note: These survey results include spaces available to the general public only

Figure 25: Sunday Survey Parking Occupancies

3.4.3. Existing Traffic Generation

Based on traffic surveys undertaken in 2019 and 2020, peak hour traffic volumes were utilised to establish a 'per space' traffic generation rate for the historical Northcote Plaza use.

The rates are summarised in Table 2 below.

Table 2: Peak Hour Volumes & Traffic Generation – 2019/2020 Traffic Surveys

Peak Hour	Time	Traffic Volume			Rate per space[1]
		In	Out	Total VPH	
AM	8:15am - 9:15am	850 vph	492 vph	1342 vph	1.15 vph/space
PM	3:00pm - 4:00pm	885 vph	1073 vph	1958 vph	1.68 vph/space
Saturday	11:30am - 12:30pm	1159 vph	1132 vph	2291 vph	1.96 vph/space

[1] Based on a provision of 1,166 spaces across both Northcote Plaza and Northcote Central car parks.

4. Proposal

4.1. The Proposed Redevelopment

Application plans have been prepared by Wardle.

They detail a staged redevelopment of the site for the purposes of a mixed-use precinct comprising a new full line supermarket, a number of retail tenancies and food and drink premises and three new residential towers.

The proposal seeks to integrate the new retail tenancies with the existing Northcote Plaza mall, whilst also providing a new public realm frontage to the Council Car Park to the east.

The car spaces located on-title at the west of the site (formerly the proposed Office Tower) are proposed to be developed as a Public Open Space offering, with new landscaping and public realm provisions.

4.2. Staging

The proposal is to be staged in 2 proposals.

Stage 1 will include the delivery of the new supermarket and associated loading and basement car park, and podium parking serving the eastern residential towers. Stage 1 will deliver the new podium residential parking access to Separation Street (and streetscape upgrades) with the retail loading and basement parking accessed from the Council car park.

Stage 2 will be the remaining western portion of the site, which will be developed for a residential tower, with podium car parking, accessed from a shared access via Stage 1.

4.3. Development Schedule

A summary of the proposed floor areas and development schedule is provided in Table 3.

Table 3: Proposed Development Schedule

Use		Stage 1	Stage 2	Total
Supermarket		4,498 m^2	-	4,498 m^2
General Retail/Shop		1,017 m^2	81 m^2	1,098 m^2
Total Commercial		***5,515 m^2***	***81 m^2***	***5,596 m^2***
Residential	Studio	38 no.	26 no.	64 no.
	1 Bedroom	152 no.	94 no.	246 no.
	2 Bedroom	228 no.	90 no.	318 no.
	3 Bedroom	34 no.	8 no.	42 no.
	Total	***452 no.***	***218 no.***	***670 no.***

4.4. Access

4.4.1. General

A summary of the proposed access arrangements is provided in Figure 26.

Discussions of access for each mode is provided in the following sections.

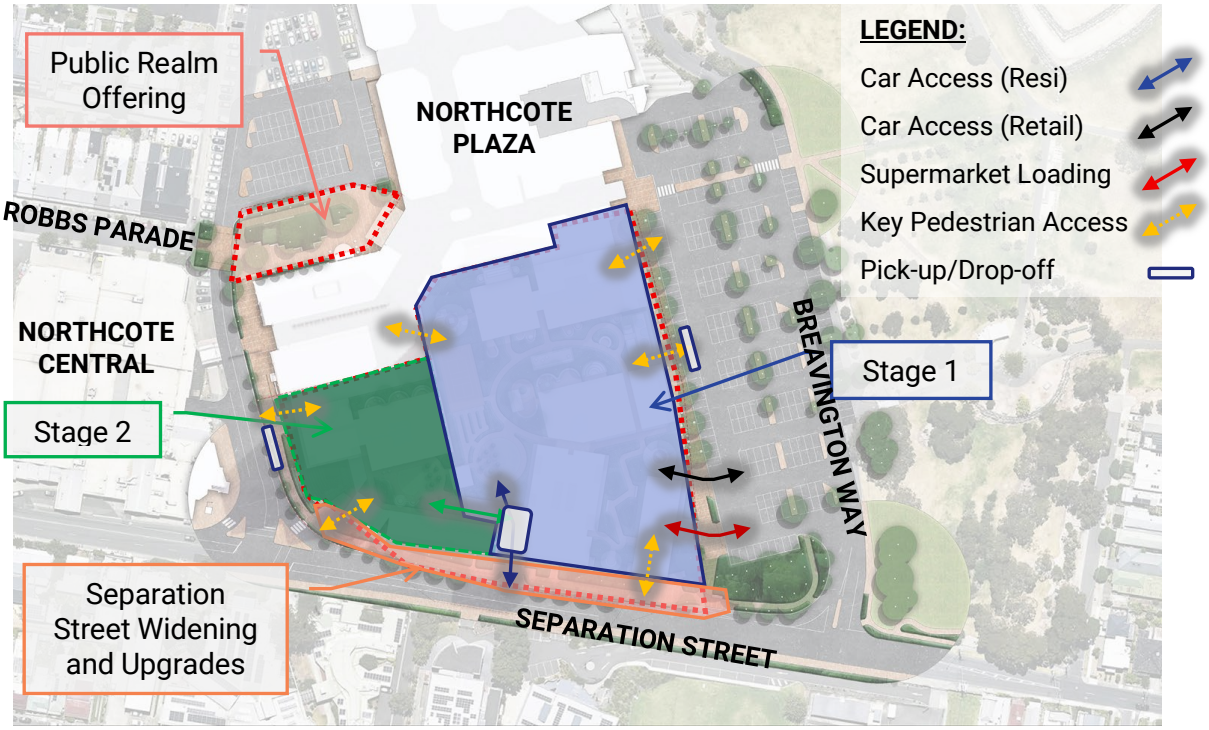


Figure 26: Proposed Development & Staging & Access

4.4.2. Vehicle Access

All existing shopping centre access will be retained.

Access to the retail basement car park will be provided via a new two-way access via the Council car park to the east of the site.

Residents of the development will access their podium parking levels via a new access proposed along Separation Street. This access will be delivered in Stage 1, and will also facilitate the future Stage 2 access.

The plans include a number of pick-up/drop-off areas as described below:

- Stage 1 will provide an internal porte cochere area, accessed from Separation Street, providing internal access and drop of parking for residents/visitors and uber/uber east. This access will also serve the podium parking areas for Stages 1 and 2.
- At the eastern side of the site, modifications to the Council car park interface will improve the streetscape interface, and this will include angled parking as well as an indented parking area for pick up drop-off.

- At the western site (Stage 2), it is proposed to retain the existing drop off parking area from the Common Road, but modified to improve and presentation to the redevelopment.

4.4.3. Pedestrian & Cyclist Access

Because of the topography of the site, the site has multiple "ground level" access points.

Key pedestrian access will be provided via the existing Northcote Plaza shopping centre internal mall. Pedestrian crossing and public realm upgrades will improve the linkage to/from Robbs Parade and High Street.

The Separation Street footpath along the southern side of the site will be widened to provide for improved pedestrian amenity and accessibility along the site boundary.

Residential Lobbies fronting Separation Street and some individual dwellings with direct abuttal to Separation Street will take direct access and provide activation to the street.

A new footpath will be provided along the eastern side of the site (abutting the Council car park) and connecting between Separation Street and the new east-west retail plaza. Abutting retail tenancies and residential lobbies will take access and activate the new pathway.

Parts of the existing footpath along the western common road will also be improved for pedestrian amenity and accessibility along the site boundary.

Bicycle parking for residents and staff will be in secure stores within basement, ground and podium areas strategically located near to the relevant cores/access points.

Bicycle parking for visitors will be facilitated through the open space areas at each of the main entry points to the new development. This will allow cyclists will ride up to the site boundary and each access point, dismount and then access bike parking direct.

There is also additional visitor bikes allocated in basement, over and above the minimum statutory requirements. These will be accessible from the adjacent lift lobbies.

4.4.4. Bus Stop Relocation & Separation Street External Works

The changes to Separation Street and new access arrangements will require the relocation of the existing bus stop which is currently located on the northern side of Separation Street.

The location of the bus stop will be subject to DTP and Council discussions, but is proposed in a location just east of its existing location. This location aligns with the future pedestrian circulation and desire lines that are created by the new eastern retail interface and connections.

A widening of Separation Street to the north is also proposed to provide for:

- A dedicated right turn lane from Separation Street into the resident car park access.
- Relocation of the existing bus bay, to be closer to Breavington Way.
- A wider footpath and verge along the northern side of Separation Street.

The Separation Street/Breavington Way intersection will continue to operate as an unsignalised intersection as part of this application.

An assessment of the traffic impact of the proposal, including assessment of this intersection and confirmation that signals are not required at this point in time to accommodate the future traffic generation, is provided later in this report.

Importantly, the proposal will not preclude the signalisation of the intersection in the future by Council (or others).

4.5. Parking Provisions & Allocations

4.5.1. Car Parking

The proposal intends to provide 536 car parking spaces on-site split across both stages.

Car parking is provided within one basement level for the retail use and podium parking for residents, and is to be allocated as:

- 180 spaces in the retail/publicly accessible area on basement 1 (Stage 1) including:
  - 4 DDA accessible spaces,
  - 6 'direct to boot' parking bays, and
  - The remaining 170 spaces for public use by the supermarket and retail users (including 1 small car bay).
- 245 residential car spaces allocated to the dwellings in Stage 1, including 2 car share spaces and 16 tandem bays, and
- 111 residential car spaces allocated to the dwellings in Stage 2, including 1 car share space.

The proposal will include 10 spaces as Electric Car Charging spaces. These spaces will be dedicated as shared spaces for visitors, staff and residents to utilise. There will be 4 located in the Basement 1 commercial car park, 4 spaces within the Stage 1 residential car park, and 2 located within the Stage 2 residential car park.

Having regard to the existing parking provisions within Lot 100 (47 spaces) and Lot 102 (44 spaces), and the loss of three spaces for the future pedestrian connection to Robbs Parade this is an increase of 442 car spaces on-site (536 basement – 94 existing relocated).

Depending on the ultimate design of the public realm interface, there is likely to be a reduction in the external parking within the council car park. This is discussed in the following sections and will be subject to the ultimate agreed design with Council.

4.5.2. Bicycle Parking

The proposal includes the provision of 795 bicycle spaces throughout the site which will be comprised of:

- 689 spaces for residents of the apartments (1 space per apartment)
- 28 spaces for staff of the retail tenancies (1 space per 200m^2),
- 78 spaces for visitors available mixed within the public realm and at ground floor (1 space per 10 apartments, plus 1 space per 500m^2 retail floor area).

The proposal also includes End of Trip facilities with 3 shower changerooms provided.

4.5.3. Motorcycle Parking

The application will include 12 motorcycle parking spaces for residents.

4.5.4. Removed External Car Parking

The proposal includes works to the external public realm. These works will upgrade footpaths and pedestrian connections and landscaping.

It will also result in the removal of some existing car parking within the common property car parking areas within the Council Car Park to the east. We are advised that the loss of parking in the Council car park will be in the order of 15 spaces.

That said, it could be considered that this parking will essentially be replaced within the publicly accessible basement car parking area, and the net increase in retail/publicly available car parking for the shopping centre.

4.5.5. Parking Summary

A summary of the parking provisions is provided in Table 4.

Table 4: Proposed Parking Provisions

Use			Stage 1	Stage 2	Total
Car Parking	Publicly Available Retail/ Supermarket	Standard	170 spaces (including 4 EV)	0 spaces	170 spaces (including 4 EV)
		Click & Collect	6 spaces	0 spaces	6 spaces
		DDA	4 spaces	0 spaces	4 spaces
		Subtotal	***180 spaces***	***0 spaces***	***180 spaces***
	Residents	Standard	245 spaces (including 4 EV)	111 spaces (including 2 EV)	358 spaces (including 6 EV)
		Car Share	Inc. 2 space	Inc. 1 space	Inc. 3 spaces
		Subtotal	***245 spaces***	***111 spaces***	***356 spaces***
Bike Parking	Resident		459 spaces	230 spaces	689 spaces
	Staff		28 spaces	-	28 spaces
	Visitor		56 spaces	22 spaces	78 spaces
	Subtotal		***543 spaces***	***252 spaces***	***795 spaces***
Motorcycle Parking			8 spaces	4 spaces	12 spaces

4.6. Loading & Waste Collection

4.6.1. Supermarket

An on-site loading dock is proposed at lower ground level with access via Separation Street. The loading dock will serve supermarket deliveries and waste collection via vehicles up to a 14.5m semi-trailer.

4.6.2. Shared Retail

A further two loading bays are provided within the retail basement car park which will service loading and waste collection for the remaining retail tenancies. These bays have been designed for vehicles up to a 6.4-metre-long Small Rigid Vehicle (SRV).

4.6.3. Residential

Residential loading is generally related to residents moving in and out and is anticipated to occur relatively infrequently and can be managed from smaller vans and passenger cars.

Nominated loading areas are shown in Residential Podium parking areas.

Waste collection for residents will occur via private collection utilising a 6.4-metre mini Hino vehicle, which will circulate through the podium parking and collect waste from outside the dedicated waste rooms.

4.7. Changes from Previous Approved Permit

It is noted that the plans differ in some areas from the approved permit application. The key amendments from a traffic and parking perspective are described as follows:

- Removal of the second supermarket and office uses, and replacing the former office building offering with a new public open space offering.
- Replacing the three-level basement car park with one level of basement car parking available to the public and two levels of podium parking for resident and staff use.
- The retail basement car park is now accessible via the Council car park to the east of the building, while residents will continue to take access via Separation Street, in the approximate location of the previous loading access.
- Car parking provisions across the proposal have been reduced for all uses, commensurate with more contemporary parking requirements for inner urban developments.
- Reconfiguration of the loading arrangements, to separate the supermarket tenancy from the other land uses, and have the residential land uses utilise smaller areas in podium car parking zones.
- Refiguring and reconsidering of the on-site bicycle parking access and storage areas.

5. Parking Considerations

5.1. Car Parking

5.1.1. Clause 52.06 – Car Parking

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

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

Clause 52.06-5 states that:

> *"Table 1 of this clause sets out the minimum and maximum car parking requirements that apply to a use specified in the table based on the land category identified in the Car Parking Requirement Maps (Department of Transport and Planning, 2025) (CPR maps).*
>
> *If the land is shown in two or more categories on the CPR maps, the car parking requirements for the higher category applies to all of the land."*

An excerpt of the Car Parking Requirement Map is provided at Figure 2.

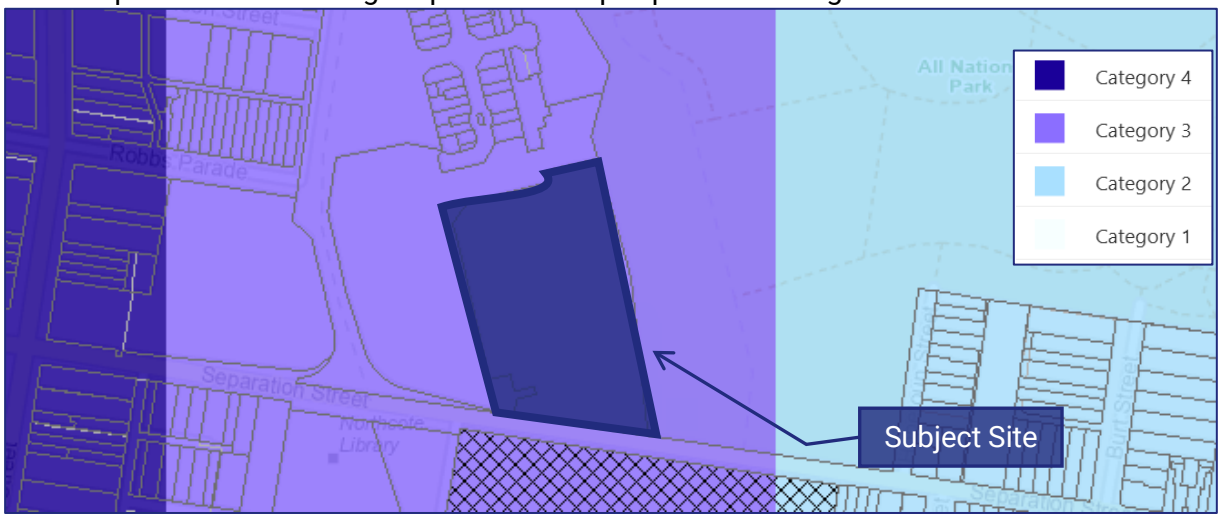


Figure 27: City of Darebin – Car Parking Requirement Maps

The subject site falls within Category 3 of the Car Parking Requirement Maps therefore minimum and maximum rates apply to the site.

Clause 52.06-05 also specifies that:

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

Historically, minimum parking requirements applied to the site and the proposal sought to consider how existing parking was to be maintained and retained to support the redevelopment.

Since the change to Clause 52.06, the assessment of the parking requirements has simplified, however we will continue to consider the net change in car parking numbers.

Applicable rates under Clause 52.06 are provided at Table 5.

Table 5: Statutory Car Parking Requirements (Clause 52.06)

Use	Statutory Requirement
Supermarket	Minimum: 0 spaces to each 100 sqm Maximum: 2.5 spaces to each 100 sqm
Specialty Retail (Food & Drink, Restaurant, Shop etc)	Minimum: 0 spaces to each 100 sqm Maximum: 2 spaces to each 100 sqm
Residential Apartments	Minimum: 0 spaces to each dwelling Maximum: 2 spaces to each dwelling

Application of the above rates to the proposed dwelling numbers and commercial floor areas identifies the following parking requirements shown at Table 6.

Table 6: Statutory Car Parking Requirements (Clause 52.06)

Use	Stage 1		Stage 2		Total
	Size/No.	Requirement	Size/No.	Requirement	
Supermarket	4,498 m^2	Min: 0 spaces Max: 112 spaces	-	-	Min: 0 spaces Max: 112 spaces
Specialty Retail	1,017 m^2	Min: 0 spaces Max: 20 spaces	81 m^2	Min: 0 spaces Max: 1 space	Min: 0 spaces Max: 21 spaces
Residential Apartments	452 no.	Min: 0 spaces Max: 904 spaces	218 no.	Min: 0 spaces Max: 436 spaces	Min: 0 spaces Max: 1,340 spaces
Total	**Minimum: 0 spaces Maximum: 1,036 spaces**		**Minimum: 0 spaces Maximum: 437 spaces**		**Min: 0 spaces Max: 1,473 spaces**

Based on the table, the development has a statutory requirement to provide a maximum of:

- 1,036 spaces in Stage 1, including:
  - 132 spaces for the retail component, and
  - 904 spaces for residents.
- 437 spaces in Stage 2, including:
  - 1 space for the retail component, and
  - 436 spaces for residents.

Overall, the proposal must not provide more than 1,473 spaces.

The plans propose a total provision of 180 car spaces allocated to the commercial use in Stage 1 which exceeds the maximum commercial requirement under the Planning Scheme and therefore a permit would be required to provide parking at a rate above the maximum requirement for Stage 1 of the application.

The provisions for the residential apartments do not exceed the maximum requirements in either stage.

An assessment of the appropriateness of increasing the car parking provision above the statutory requirements is set out as follows, specifically focussing on the retail car parking.

5.1.2. Appropriateness of Supermarket/Retail/Public Car Parking Provisions

Clause 52.06-7 of the Planning Scheme allows a permit to be granted to vary the statutory car parking.

Specifically, it requires the following:

> ***For applications to provide more than the maximum car parking provision***
>
> *An application to provide more than the maximum parking provision specified in clause 52.06-5 or a schedule to the Parking Overlay must be accompanied by a Car Parking Demand Assessment.*
>
> *The Car Parking Demand Assessment must assess the car parking demand likely to be generated by the proposed use or increase to the existing use.*
>
> *The Car Parking Demand Assessment must address the following matters, to the satisfaction of the responsible authority:*
>
> - *The likelihood of multi-purpose trips within the locality which are likely to be combined with a trip to the land in connection with the proposed use.*
> - *The variation of car parking demand likely to be generated by the proposed use over time.*
> - *The short-stay and long-stay car parking demand likely to be generated by the proposed use.*
> - *The availability of public transport in the locality of the land.*
> - *The convenience of pedestrian and cyclist access to the land.*

- *The provision of bicycle parking and end of trip facilities for cyclists in the locality of the land.*
- *The anticipated car ownership rates of likely or proposed visitors to or occupants (residents or employees) of the land.*
- *Any empirical assessment or case study.*

Before granting a permit to provide more than the maximum car parking spaces specified under clause 52.06-5 or in a schedule to the Parking Overlay, the responsible authority must consider the following, as appropriate:

- *The Car Parking Demand Assessment.*
- *Any relevant local planning policy or incorporated plan.*
- *Whether additional car parking is required for disability parking.*
- *Any adverse economic impact a shortfall of parking may have on the economic viability of any nearby activity centre.*
- *The future growth and development of any nearby activity centre.*
- *Local traffic management in the locality of the land.*
- *The impact of additional car parking spaces on local amenity, including pedestrian amenity and the amenity of nearby residential areas.*
- *The need to create safe, functional and attractive parking areas.*
- *Access to, or provision of, alternative modes of transport to and from the land.*
- *The character of the surrounding area and whether increasing the car parking provision would result in a quality/positive urban design outcome.*
- *Any other matter specified in a schedule to the Parking Overlay.*
- *Any other relevant consideration.*

In considering the appropriateness of the car parking provisions for the proposal, we have had specific regard to a number of key considerations, being:

- The loss of existing parking on the land and in the precinct as a result of the works;
- The likely parking demands associated with the proposed use; and
- The proposed nature of the retail parking to operate as publicly available parking that can support the precinct and future development scenarios in the area.

Consideration of loss of existing parking

The proposal includes works to the external public realm and will impact on existing car parking within the common property car parking areas, the existing site's property boundary, and also within the Council Car Park to the east.

We estimate that there will be up to 111 car spaces removed from the existing publicly accessible parking areas (both on-title and in public land), comprised of:

- A loss of approximately 47-55 car spaces in the north-west corner of the site, accessed from the Common Shopping Centre Car Park to accommodate the new Public Open Space

and connection to Robbs Parade. This parking is in the subject land's property boundary and also in the shopping centre common property.

- A reduction of approximately 15 car spaces within the Council Car Parking area from the existing conditions to allow for an improved public realm interface and outcome. This parking is within Council's land and subject to Council acceptance.
- A reduction of approximately 41 car spaces within the site's boundary in the southern portion of the site. This parking is in the subject land's property boundary.

This parking will essentially be replaced within the publicly accessible basement car parking area, and the net increase in retail/publicly available car parking for the shopping centre and precinct will be equal to at least 69 spaces over and above the existing conditions.

Potential parking demands

Supermarkets can generate car parking demands at varying scales based on their size, their catchment, their branding and the surrounding uses.

Case study data held by Traffix Group and other traffic engineering firms suggests that parking demands can range between in the order of 1.3-5 car spaces per 100m^2 where the higher end of the range is experienced in outer suburban and rural areas where the supermarket catchment is extensive and there are limited other shopping alternatives in the immediate vicinity.

The proposal includes the provision of 180 car parking spaces. Allowing for the potential loss of parking in the Council Car Park, this will equate to 165 spaces associated purely with the proposed retail/commercial use.

At full development, this will be a supply for approximately 5,500 m^2 of commercial use, and also facilitate visitor parking for the development and surrounding precinct.

This rate (approximately 3.5 spaces per 100m^2) is within the range of expected demand provisions, and in our view provides for a positive contribution to the precinct and area, allowing for a mixture of use by the customers of the supermarket/retail use as well as visitors to other parts of the precinct.

Publicly Available Parking as a Future Resource

Whilst it may be the case that the proposal will generate lower demands than this provision, the provision of parking is in part a function of the practical provisions on-site (ie a single level of basement). We do not believe that the provision of parking, at this rate, will adversely result in higher parking demands than could be expected in another location.

Rather, and most importantly, this car parking will not be provided as the sole car park for the supermarket and retail uses on the site, but will be made available as a public resource.

The proposal also offers generous bicycle and sustainable transport offerings that will continue to support reduced car reliance.

The existing shopping centre is heavily reliant on the Council Car Park to meet its parking demands and whilst this continues to be fit for purpose, it limits the potential for future works to the car park by Council to reduce the overall provision.

The proposed public car parking will be operated as a precinct car park, which will be used across the day and across the week for different types of uses and will offer an opportunity to offset potential future works to the Council Car Park which might result in fewer parking spaces being available in the precinct.

In our view, the proposed parking provisions provide for a positive contribution to the precinct and area, allowing for a mixture of use by the customers of the supermarket/retail use as well as visitors to other parts of the precinct, and this benefit far outweighs any potential (and likely marginal) results in increasing car usage in the precinct.

We are of view that the provision of parking for the retail uses, above the maximums, is appropriate and can be accepted.

5.2. Car Parking Layout & Access Arrangements

Plans have been prepared by Wardle which apply the following general principles of the Darebin Planning Scheme and where applicable, the Australian Standard for Off-Street Parking (AS2890.1:2004).

Plans continue to be developed, and we are confident that through the next phase of design, compliance with the relevant standards can be achieved.

The following provides the general approach to the design provisions that support this provision. Conditions of permit could be included on the permit to ensure that the designs achieve the minimum relevant compliances with the Planning Scheme.

5.2.1. Mixed-Use Precinct

General Car Parking Layout

- Car spaces within the private car park are to be designed in accordance with the table at Clause 52.06, and plans nominate general spaces with dimensions of 2.6 metres width and 4.9 metres length, accessible from minimum 6.4-metre-wide aisles.
- Car spaces within the public basement car park are to be dimensioned in accordance with AS2890.1:2004 for User Class 3A, with dimensions of 2.6 metres width, 5.5 metres length, accessible from minimum 6.5-metre-wide aisles.
- Car spaces adjacent to walls are to be widened to provide appropriate clearances to allow for satisfactory car door opening, including to 2.7 metres for residents and staff and 2.9 metres for public parking as per AS2890.1:2004.
- Columns are sited to accord with the Planning Scheme car parking envelope to allow for access into and out of spaces.
- Parallel parking spaces are dimensioned as 2.3 metres wide and 6.7 metres long as per Clause 52.06.
- Appropriate blind aisle extensions are to be provided to end of aisle spaces.
- A minimum head clearance of 2.2 metres is to be provided within all trafficable areas of the car parking area.

- DDA parking is provided in accordance with the requirements of AS2890.6:2009, allowing for a dedicated bay and shared area dimensioned at a minimum width of 2.4 metres and length of 5.4m, and are provided with a minimum headroom clearance of 2.5 metres.

Key Access Provisions

- The proposal intends to take access a new crossover to Separation Street, located centrally at the south boundary of the site. The location of this crossover is generally in accordance with the previous permit approval (the loading access). Appropriate sight lines are provided and works to Separation Street will be provided to facilitate appropriate access. This access has been designed for mini-waste vehicle access, residential car parking, and also potential infrequent substation access (MRV).
- The car park access to the Council Car Park is located in the approximate location of the existing parking aisles, and will provide access via the car parking aisles. Swept paths have been prepared showing appropriate vehicle accessibility. This access has been designed for SRV access for retail loading and public parking.
- The loading dock access from the Council Car Park is located in the approximate location of the existing supermarket loading area, and designed for a 14.5m semi trailer.
- All movements to/from the site's key accesses will be in forward directions.

Internal Ramp and Accessway Designs

- The access ramp to the basement car park and access controls in basement are provided with dimensions that meet or exceed the requirements of AS2890.1:2004, including:
  - a single entry lane of minimum 3.6 metres width between walls;
  - 2 separate exit lanes, with a total width of 6.6 metres between walls; and
  - Internal access controls at basement that allow for SRV and B99 vehicle swept paths and turning.
- The podium ramps have been designed with widths exceeding the minimum requirements of AS2890.1 and swept paths will be checked to confirm appropriate passing is provided on ramps and/or at landings, commensurate with a residential private car park.
- A minimum headroom clearance of 3.5 metres is to be provided along the car parking ramp in accordance with AS2890.2:2022 for the retail ramp, and access to the retail loading area.
- Minimum headroom clearances of 2.2m are provided throughout the podium parking areas.
- The grading of the access ramps are intended to be provided as follows:
  - The retail car park ramp has been designed to comply with AS2890.2 for an SRV, accommodating a maximum grade of 1 in 6.5 with 1 in 12 transitions of at least 4m.
  - The residential car park ramps have been designed to comply with AS2890.1 and Clause 52.06 for a private car park, with maximum grades of 1 in 5 and transitions of 1 in 8.
  - The Separation Street entry will have softer grades from street to accommodate substation access and Services Authority requirements.

- Full sight triangles of 2.0 metres W by 2.5 metres L can be achieved on the exit side of the access ramps, in accordance with the requirements of the Planning Scheme.

In this regard, the above access arrangements, grades, transitions and clearances have been assessed and, in our view, meet the intent of the relevant standards.

Swept paths demonstrating access to the site and critical parking spaces have been prepared and attached at Appendix C.

5.3. Bicycle Considerations

5.3.1. Clause 52.34 Bike Parking

Clause 52.34 of the Planning Scheme specifies the bicycle parking requirement for new developments. The relevant requirements are summarised in Table 7.

Table 7: Statutory Bicycle Parking Requirements

Use	Staff/Resident	Visitor/Customer
Dwellings	1 space per 5 dwellings for residents	1 space per 10 dwellings for visitors
Supermarket	1 space per 600 m^2 for staff	1 space per 500 m^2 for customers
Retail (other than listed)	**1 space per 300 m^2 for staff**	**1 space per 500 m^2 for visitors**

These rates have been applied to the proposal in Table 8.

Table 8: Statutory Bike Parking Requirements (Clause 52.34)

Use	Stage 1		Stage 2		Total
	Size/No.	Requirement	Size/No.	Requirement	
Supermarket	4,498 m^2	Staff: 7 spaces Visitor: 9 spaces	-	Staff: 0 spaces Visitor: 0 spaces	Staff: 7 spaces Visitor: 9 spaces
Specialty Retail	1,017 m^2	Staff: 3 spaces Visitor: 1 spaces	81 m^2	Staff: 0 spaces Visitor: 0 spaces	Staff: 3 spaces Visitor: 2 spaces
Residential Apartments	452 no.	Resident: 90 spaces Visitor: 45 spaces	218 no.	Resident: 44 spaces Visitor: 22 spaces	Resident: 134 spaces Visitor: 67 spaces
Total	**Staff: 10 spaces Resident: 90 spaces Visitor: 55 spaces**		**Staff: 0 spaces Resident: 44 spaces Visitor: 22 spaces**		**Staff: 10 spaces Resident: 134 spaces Visitor: 77 spaces**

Based on the above assessment, the development is required to provide a total of 221 bicycle spaces, comprised of 134 resident spaces, 10 staff spaces and 77 visitor spaces.

5.3.2. Adequacy of Proposed Bike Parking Provisions

The proposal includes the provision of 795 bicycle spaces throughout the site which will be comprised of:

- 689 spaces for residents of the apartments (1 space per apartment)
- 28 spaces for staff of the retail tenancies (1 space per 200m^2),
- 78 spaces for visitors available mixed within the public realm and at ground floor (1 space per 10 apartments, plus 1 space per 500m^2 retail floor area).

The above provisions significantly exceed the minimum requirements under Clause 52.34 of the Planning Scheme and a permit is not required.

A minimum of 20% of bicycle parking is provided as horizontal rails therefore meeting the requirements of AS2890.3.2015.

Clause 52.34 also requires that shower and changeroom facilities be provided at a rate of one for the first 5 staff spaces, and one per 10 spaces thereafter.

The proposal will also provide 4 shower/changeroom facilities (2 male and 2 female) for retail staff parking, satisfying the minimum statutory requirements under Clause 52.34.

Cyclists will also have alternative access via each of the residential lobbies and through the use of the passenger lifts.

Bicycle parking for visitors will be facilitated through the open space areas at each of the main entry points to the new development. This will allow cyclists will ride up to the site boundary and each access point, dismount and then access bike parking direct. Additional visitor bikes are likely to be provided within the site.

These access arrangements and provisions are considered acceptable.

5.4. Loading & Waste Collection

5.4.1. Clause 65.01

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

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

A discussion of the relevant components is provided as follows.

5.4.2. Supermarket Provisions

An on-site loading dock is proposed at lower ground level with access via the Council Car Park. The loading dock will serve supermarket deliveries and waste collection via vehicles up to a 14.5m semi-trailer.

Access to and from this loading dock in a forward direction utilising a turntable with diameter 16.5 metres, and has been demonstrated in Appendix C.

5.4.3. Shared Retail

A further two loading bays are provided within the retail basement car park which will service loading and waste collection for the remaining retail tenancies. These bays have been designed for vehicles up to a 6.4-metre-long Small Rigid Vehicle (SRV).

5.4.4. Residential

Residential loading is generally related to residents moving in and out and is anticipated to occur relatively infrequently, and this can be accommodated within dedicated loading bays provided at each core by passenger vehicles and vans.

Waste collection for residents will occur via private collection utilising a 6.4-metre mini Hino vehicle, which will circulate through the podium parking and collect waste from outside the dedicated waste rooms.

Based on the above, we consider the loading and waste arrangements for the proposal to be appropriate.

6. Traffic Considerations

6.1. Existing Separation Street Volumes

To understand the existing traffic conditions along Separation Street, Traffix Group commissioned Trans Traffic Survey to undertake vehicle movement counts at the intersections of the existing Council car park access and the signals to Separation Street as part of the original application report.

The surveys were undertaken between 7:00am and 7:00pm on Friday 2nd August and Saturday 3rd August, 2019.

To further understand traffic conditions adjacent to the proposed site access a supplementary traffic survey was undertaken between 7:00am and 7:00pm on Thursday, 13th February 2020 at the intersection of Separation Street and Santa Maria College site access opposite the proposed site access.

To supplement this data, Traffix Group has commissioned Trans Traffic Survey to reconduct these vehicle movement counts at the intersections of the existing Council car park access and the signals to Separation Street.

The updated surveys were undertaken between 7:00am and 7:00pm on Friday 13th March, 2026 and Saturday 21st March 2026.

The peak times for the network in the most recent surveys were recorded to be:

- AM Peak – 8:15am-9:15am
- PM Peak – 3:45pm-4:45pm
- Saturday Peak – 11:30am-12:30pm

A summary of the combined available turning movement counts is provided in Figure 28, focussing specifically on Separation Street.

The surveys also included Gap Surveys at the intersection of Separation Street / Breavington Way to observe actual capacity in the network as well. A summary of the recorded gap capacities is provided in Table 9. It is noted that we have assumed that the theoretical capacity of the movements is 85% of the actual recorded gap capacity.

The data shows that there is significant existing capacity along Separation Street for movements into and out of Breavington Way.

This is expected to be due to heavily platooned traffic movements on Separation Street due to signals at intersections to the east and west, and a relatively constrained road cross-section and access for this part of the network.

The gap surveys suggest a maximum utilisation ratio for any of the critical movements is 20%, which shows that there is significant spare capacity available for all movements at ths intersection.

Table 9: Theoretical Gap Capacities for Relevant Movements

Movement	AM			PM			Sat		
	Capacity (vph)	Existing Volume	Existing Util.	Capacity (vph)	Existing Volume	Existing Util.	Capacity (vph)	Existing Volume	Existing Util.
Left-Out of Breavington Way	771	59	9%	727	105	14%	694	139	20%
Right-In to Breavington Way	1168	86	8%	1126	149	13%	1057	154	15%
Right-Out From Breavington Way	557	39	7%	424	43	10%	359	36	10%

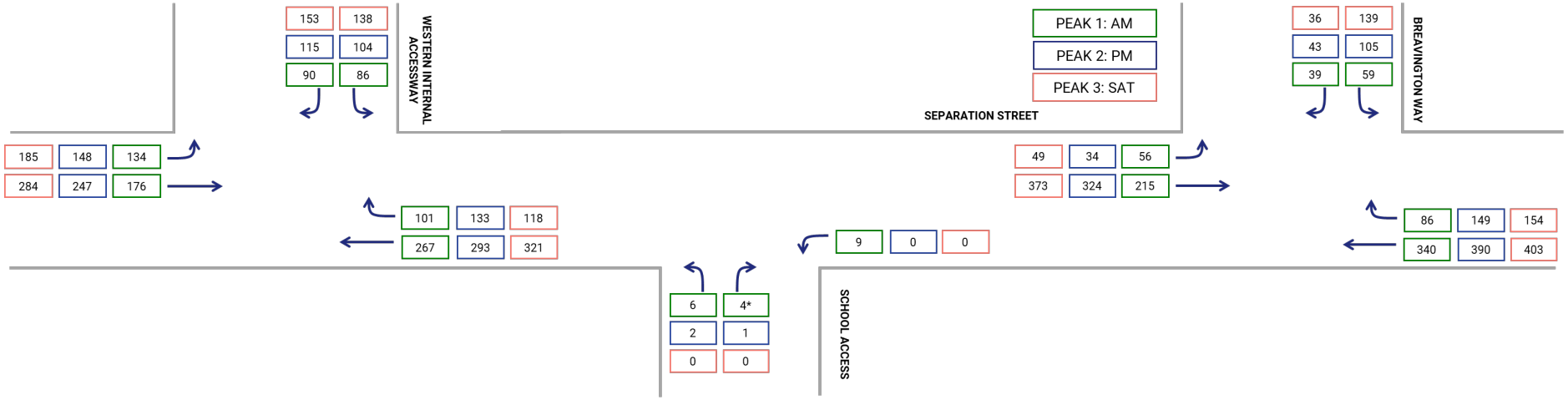


Figure 28: Existing Separation Street Traffic Volumes (Combined Data Sets)

6.2. Existing Network Operations

To determine the existing operation of the site accesses, SIDRA Analysis has been undertaken for the existing shopping centre access intersections.

SIDRA is a computer program originally developed by the Australian Road Research Board, which can be used to analyse the operation of intersections. SIDRA provides information about the capacity of an intersection in terms of a range of parameters, as described below:

Degree of Saturation (D.O.S.) *is the ratio of the volume of traffic observed making a particular movement compared to the maximum capacity for that movement. Various values of degree of saturation and their rating are shown below.*

Level of Service		Intersection Degree of Saturation	
		Unsignalised Intersection	Signalised Intersection
A	Excellent	≤ 0.60	≤ 0.60
B	Very Good	0.60 – 0.70	0.60 – 0.70
C	Good	0.70 – 0.80	0.70 – 0.90
D	Acceptable	0.80 – 0.90	0.90 – 0.95
E	Poor	0.90 – 1.00	0.95 – 1.00
F	Very Poor	≥ 1.0	≥ 1.0

*The **95th Percentile** Queue represents the maximum queue length, in metres, that can be expected in 95% of observed queue lengths in the peak hour.*

Average Delay *(seconds) is the average delay time that can be expected for all vehicles making a particular movement in the peak hour.*

A summary of the Degress of Satuartion by lane for the Existing Conditions Network models is provide dbwlo.

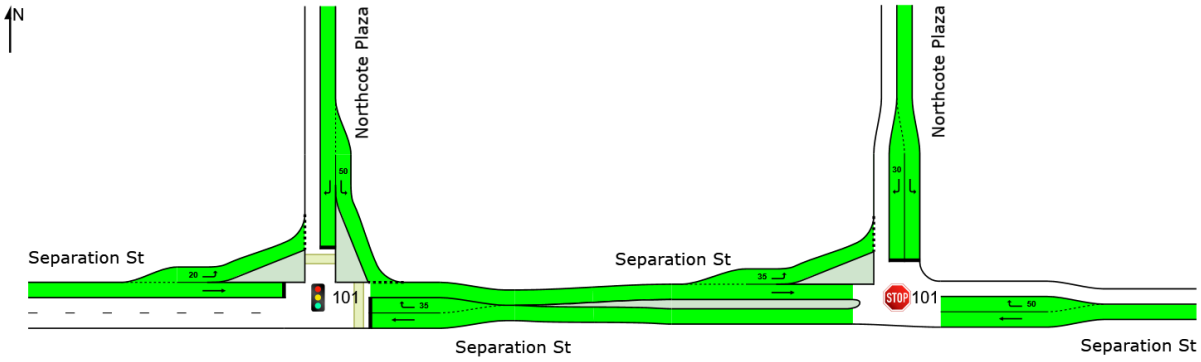


Figure 29: Existing Conditions Network Model DoS - AM Peak

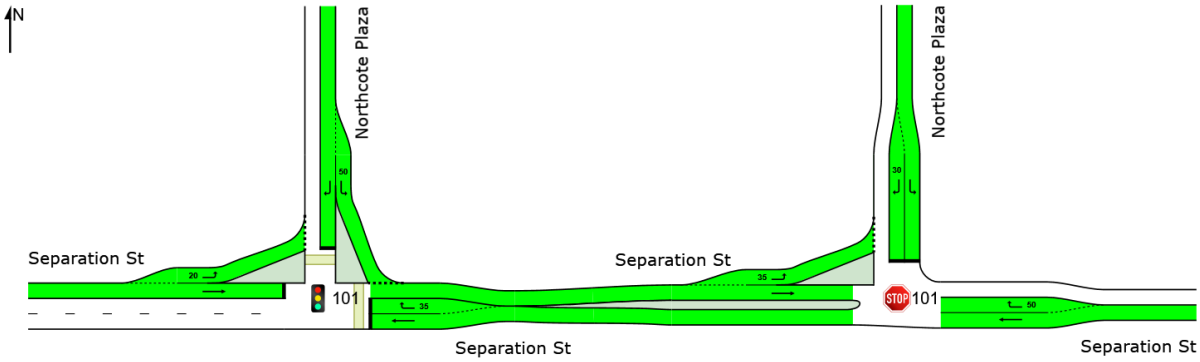


Figure 30: Existing Conditions Network Model DoS - PM Peak

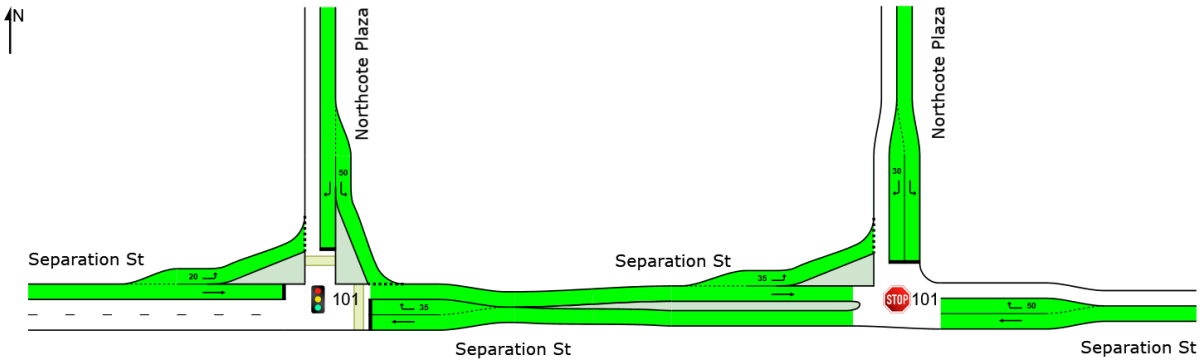


Figure 31: Existing Conditions Network Model DoS - Sat Peak

6.3. Traffic Generation

6.3.1. Residential

In consideration of the location of the site and accessibility to alternate modes of transport, it is projected that each dwelling with a car space will generate up to 3 movements per day, inclusive of 0.3 movements in peak hours.

The proposal is expected to include up to a total of 356 car parking spaces for residents.

Application of this rate to the assumed 356 apartments with parking equates to a projected traffic generation of 107 movements during each peak hour.

It is typical to adopt a residential distribution comprising 20% arrivals and 80% departures in the weekday morning peak hour and 60% arrivals and 40% departures during the weekday afternoon peak hour. For the Saturday peak hour, a distribution of 50% arrivals and 50% departure has been adopted. This equates to peak hour traffic volume and distribution of:

- AM PEAK: 21 arrivals and 86 departures
- PM PEAK: 64 arrivals and 43 departures
- SAT Peak: 54 arrivals and 53 departures

6.3.2. Supermarket/Retail Parking

Supermarket traffic generation typically varies based on catchment, proximity to public transport and the supply of parking. Based on case study data held by Traffix Group and a range of other firms, and allowing for the mixture of uses on the site, we would expect that a new supermarket would have the following likely traffic generation rates:

- Weekday AM Peak - 2 vehicle movements per 100m^2
- Weekday PM Peak – 5 vehicle movements per 100m^2
- Weekend Midday Peak – 6.5 vehicle movements per 100m^2

If these rates were adopted, the supermarket alone may be expected to generate some 90 vph in the AM, 225 vehicle movements in the PM and 292 vehicle movements in the PM peak hour.

We note that there is already a level of retail and supermarket use on the site, and the proposal would not necessarily add this level of traffic to the existing traffic generation as these uses would be essentially replaced.

For comparison, survey results of the previous application found a traffic generation rate of 1.15 and 1.68 vehicles movements per parking space in the weekday morning and afternoon peak hours, respectively. For a Saturday, a peak traffic generation rate of 1.96 vehicles movements per space was identified in the previous traffic report.

Whilst residential parking will be entirely 'new' to the network, there is already a component of existing retail traffic that is on the network, as the proposal replaces existing publicly accessible car parking. In this regard, we will consider only the additional traffic generated by the net increase of parking to this access, which is estimated to be a net increase of 124 spaces (equal to 180 proposed basement spaces – 41 existing on-site – 15 existing Council spaces).

Application of the above rates to the 124 new retail/public parking spaces equates to:

- a weekday morning peak hour traffic generation of 143 vehicle movements,
- a weekday afternoon peak hour traffic generation of 208 vehicle movements, and
- a Saturday peak hour traffic generation of 243 vehicle movements.

It is assumed that traffic will be split evenly between in and outbound movements in all peaks.

Of note, these rates are higher than what could be expected for a new supermarket use, when, as discussed above, there is already a level of supermarket and retail traffic generated to/from the site.

In any case, for the purposes of this assessment, and to be consistent with historical application reports, we will adopt the higher per space rates and presume they also coincide with the road network peak hour.

These rates will also account for any potential traffic generation associated with the other retail uses and public parking usage.

6.3.3. Projected Access Traffic Volumes

Overall, the project is expected to generate some 350 new vehicle movements to the road network during the Saturday peak hour, 315 new vehicle movements in the PM peak hour and 250 vehicle movements in the AM peak hour.

These movements will be split between the Separation Street access and also the Breavington Way/Separation Street intersection.

We note that the total new traffic estimated does not account for the reduction in car parking that will take place via the Common Property Road due to the new public open space area. It is also expected to be a conservative assumption when considering the existing uses on the site that are being replaced.

A summary of the future site access traffic generation is provided in Table 10.

Table 10: Projected Future Traffic Generation at the Proposed Access

Use	AM Peak			PM Peak			Sat Peak		
	In	Out	Total	In	Out	Total	In	Out	Total
Residential	21	86	107	64	43	107	54	53	107
Supermarket/Retail	72	71	143	104	104	208	122	121	243
Total	**93**	**157**	**250**	**168**	**147**	**315**	**176**	**174**	**350**

6.3.4. Comparison to Historical Approvals

It is important to note that the existing approval contemplated a total of 187 retail parking spaces on-site, and resulted in a lesser reduction in the existing on-site publicly available parking. It also provided 478 residential parking spaces, which is over 100 car parking spaces more than proposed in this scheme.

Based on the preceding rates, the existing approval would have been expected to generate more traffic than the current proposal. The residential parking alone would have generated an additional 30 movements to the road network over that proposed by this scheme.

On this basis, the proposed scheme would have a lesser impact on the overall wider road network than the existing approval.

That said, the proposed changes to the access arrangements, and splitting of the residential and retail parking access points (and reliance on Breavington Way for retail access) will result in changes in the traffic outcomes.

The following sections assess the impact and operation of the section of Separation Street that serves the shopping centre (and proposed car parking).

6.4. Traffic Distribution & Network Volumes

The proposed residential access will all be from Separation Street. Therefore all residential traffic will be generated to/from Separation Street, meaning that in the order of 107 vehicle movements will be generated to/from the site via this access in all peaks.

Based on existing traffic flows and also likely origins and destinations, we will presume that residential traffic will be split 70% to/from the west and 30% to/from the east.

In relation to the retail car parking, the majority of the parking is likely to be accessed from the Separation Street/Breavington Way intersection. We will presume that 90% of the traffic is generated to/from this intersection.

Whilst there will be a proportion of new retail trips which will already be on the road network as 'passing trade' trips, we will ignore this as part of our assessment. This will result in a conservatively high assessment.

We will also conservatively assume that there is no discount to the existing volumes at the other Shopping Centre access points.

We will presume that commercial traffic will be split 40% to/from the west and 60% to/from the east based on the overall weighting of existing centre based traffic, particularly in the afternoon and weekend peak hours.

Based on the preceding, Figure 32 has been prepared to model the projected traffic generation for the proposed site access to Separation Street, at the Breavington Way intersection, and additional traffic generated to the east and west.

These volumes have been superimposed on the existing through traffic volumes on Separation Street to identify the post development traffic volume at the intersection as shown in Figure 33.

In relation to the projected and future volumes, we note the following:

- The proposed residential access will experience up to 107 vehicle movements in a peak hour, with the more important movement, the right turn out, experiencing not more than 60 exit movements in the AM peak, with lesser exiting volumes in the afternoon and Saturday peak hours. The number of vehicles generating to any one movement entering or exiting the residential access equates to an average of less than 1 vehicle per minute in a peak hour. This is considered moderate in traffic engineering terms, and, having regard to the Gap Surveys recorded at the Breavington Way intersection, is expected to be readily accommodated on the network.
- The Breavington Way access will experience higher traffic volumes than the residential access and the existing conditions, however they remain of a level which is expected to be easily accommodated, particularly considering the existing capacity at the intersection. The majority of traffic will arrive and depart to the/from the east, with the most important movement, the right turn out, experiencing only 44 additional movements in any one peak hour. This is an average of less than 1 vehicle movement per minute during the peak hours and is unlikely to result in significant impacts on the operation of the intersection.

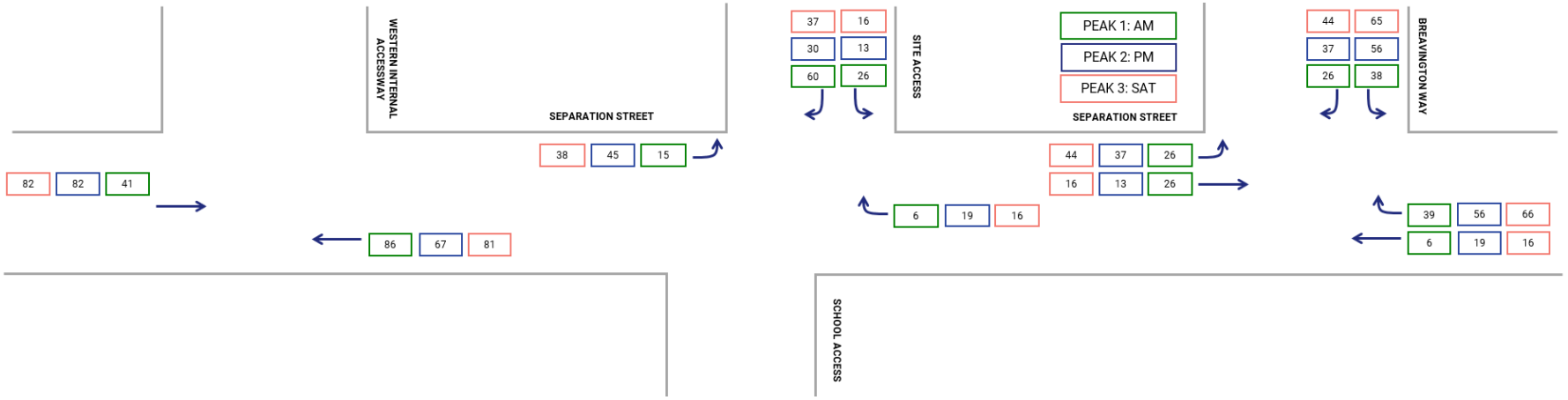


Figure 32: Projected Traffic Generation

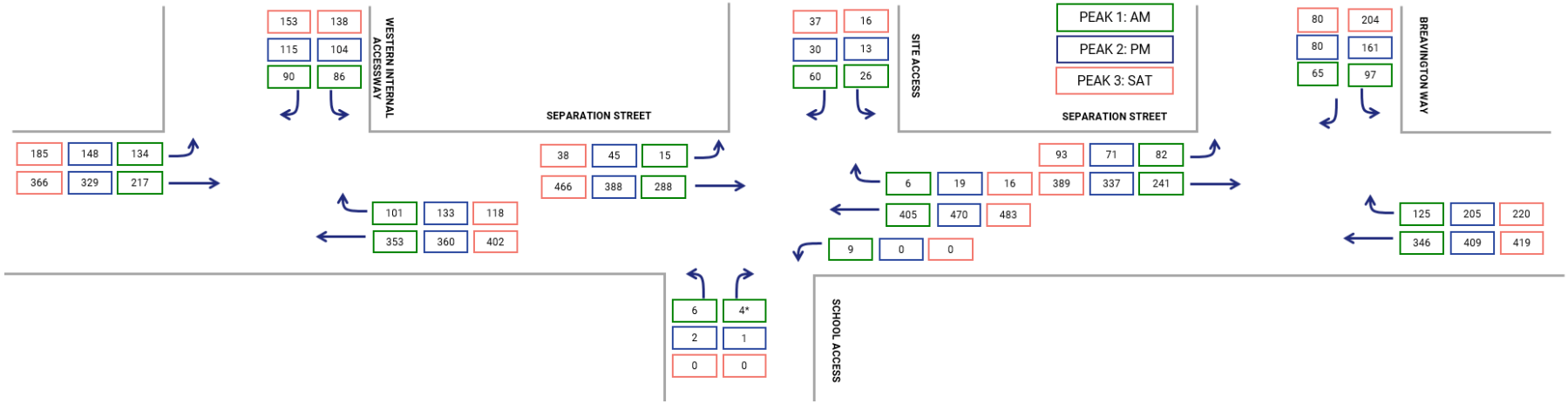


Figure 33: Post Development Traffic Volume – Proposed Site Access

6.5. Traffic Impact

As noted previously, the existing intersections operate under excellent conditions, with significant spare capacity for all movements. Volumes on Separation Street are relatively moderate and suggest that the proposed residential access and the additional traffic generated to the Breavington Way intersection can adequately operate in the peak hours.

We have further undertaken an assessment of the gap surveys and actual existing capacity on Separation Street as recorded in our surveys.

For the purposes of this estimation, we note that the capacities for left out, right in and right out movements at the Breavington Way intersection would be of a similar value to those at the proposed residential access.

A simple comparison of the additional movements to each of the critical movements in each of the peaks with the existing remaining capacity suggests that the additional traffic generated to any one movement will not take up more than 14% of the remaining capacity. This is not expected to result in material impacts to the operation of the intersections on Separation Street when considering the existing utilisation ratios for each of the intersections.

This comparison is provided in Table 11.

Whilst the additional traffic generated to the network will reduce the overall gaps available on Separation Street, we have provided a simple comparison of the existing capacities and additional traffic volumes for the critical movements at the Breavington Way intersection.

Table 11: Comparison of Remaining Gap Capacities for Relevant Critical Movements against Additional Traffic.

	Movement	Capacity (vph)	Existing Volume	Existing Util.	Remaining Capacity	Additional Movements (Max of both accesses)	% of additional movements vs spare remaining capacity
AM Peak	Left-Out onto Separation St	771	59	8%	712	41	6%
	Right-In from Separation St	1168	86	7%	1082	41	4%
	Right-Out onto Separation St	557	39	7%	518	27	5%
PM Peak	Left-Out onto Separation St	727	105	14%	622	60	10%
	Right-In from Separation St	1126	149	13%	977	60	6%
	Right-Out onto Separation St	424	43	10%	381	40	10%
Sat Peak	Left-Out onto Separation St	694	139	20%	555	70	13%
	Right-In from Separation St	1057	154	15%	903	66	7%
	Right-Out onto Separation St	359	36	10%	323	44	14%

On the basis of the above, it is clear that there is sufficient capacity in the existing network to adequately accommodate the additional traffic and the modified access arrangements.

That is, the proposed development will not trigger the need for signalisation of the intersection of Separation Street/Breavington Way, and it will continue to operate under acceptable condition as an unsignalised intersection.

Notwithstanding this, and to further demonstrate the traffic impact of the proposed development, and the appropriateness of the site access design, SIDRA Analysis has been undertaken for the proposed site access and future network volumes.

The proposed Separation Street access has been modelled as a T-intersection, as the turn bans at the school will essentially mean that the interaction of school movements with the proposed access in the peak hours will be immaterial.

The existing Separation Street/Beavington Way intersection has been modelled as an unsignalised intersection, consistent with the existing conditions.

The Network DoS by Lane outputs are shown in Figure 34 to Figure 36.

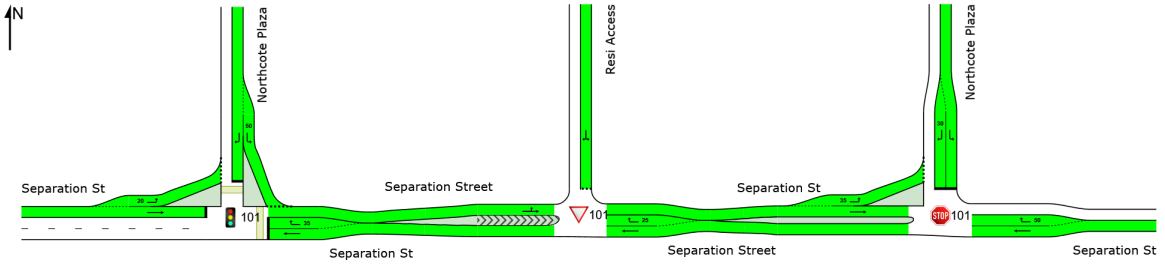


Figure 34: Future Conditions Network Model DoS - AM Peak

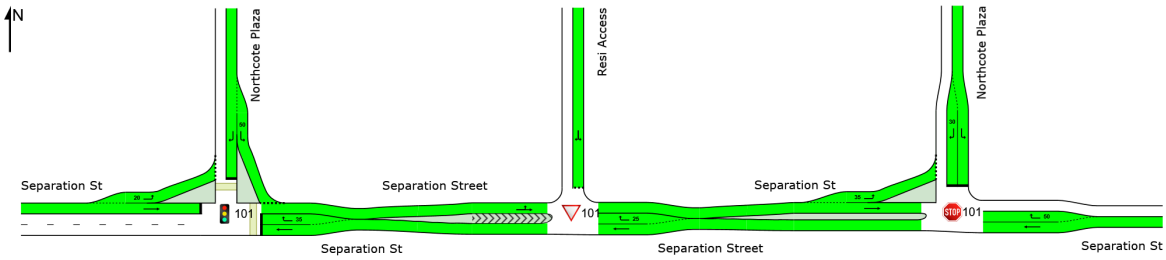


Figure 35: Future Conditions Network Model DoS - PM Peak

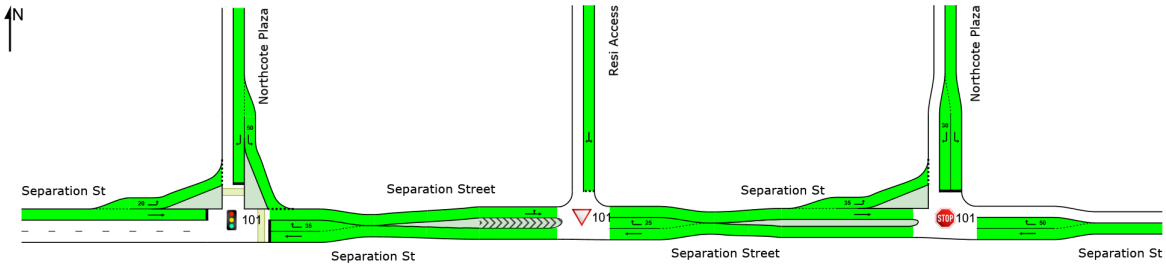


Figure 36: Future Conditions Network Model DoS - Sat Peak

The preceding shows that the additional traffic can continue to be accommodated within the existing road network without material impact on the operation of the individual intersections.

The above analysis demonstrates that the site access and intersections in the vicinity operates under 'very good' or 'excellent' conditions during all peak hours.

Queues are manageable and acceptable in the context of the existing and proposed operations.

Most importantly, there are no further mitigating works that are required, and the intersection of Separation Street/Breavington Way can continue to operated acceptably as an unsignalised intersection.

6.5.1. Summary, Conclusions and Considering Signals

The preceding analysis show that each of the movements along the network will continue to operate well within acceptable conditions.

With the exception of the proposed works to Separation Street (to widen along the frontage and provide for the proposed turn lane into the site), there are no further mitigating works required to support the proposal.

Simply put, signals are not required to support the proposal.

The proposal does not preclude signals from being provided at the intersection in the future by Council/others, however there is no need for signals to be provided to support the additional traffic generated by the proposal.

It is acknowledged that further development of the Shopping Centre and/or Council's land may generate additional traffic to the intersection, and/or there may be other benefits in relation to pedestrian accessibility crossing Separation Street that may warrant signalisation in the future.

However in relation to this development, and the works required to support this proposal, it is not the case that signals are required at Breavington Way at this point in time.

This is consistent with the findings of the previous analysis undertaken by this office in relation to the previous development schemes, and whilst there will be some changes to traffic distribution to access points along Separation Street due to this scheme, they are not of a significant nature to change the overall outcomes for works on the network.

6.6. Traffic Calming and Pedestrian Safety & Access

The existing centre is provided with a number of existing traffic calming devices, including speed humps, raised zebra crossings and slow points.

There are no vehicular connections to the local road network to the immediate west, with the only vehicular access points to the centre via the Separation Street and Dennis Street.

Pedestrian access to the west and east is facilitated by a number of existing connections and crossing points.

The signals at the south-west corner of the site offer safe pedestrian crossing opportunities for Separation Street and at the car park access road.

A key pedestrian access between the shopping centre to the west and the existing plaza is provided via a raised pedestrian crossing and a secondary zebra crossing within the car park is provided in the north-west of the site.

On the eastern side of the centre, the footpath along Separation Street links to a footpath which runs along the eastern side of Breavington Way and connects to All Nations Park.

There are existing zebra and raised pedestrian crossings connecting the existing plaza entries with All Nations Park.

The proposal provide new east-west pedestrian links and utilise the existing zebra crossing (to All Nations Park) via a new footpath along the eastern side of the building (currently this is the KMART loading area).

The new public space offerings and upgrades to crossings and pathways around the proposed buildings will provide for significant upgrades to pedestrian facilities and have been designed with traffic calming and management in mind.

7. Conclusions

Having undertaken a detailed traffic engineering assessment of the proposed mixed use development at Northcote Village, we are of the opinion that:

a. The proposed development has a statutory car parking requirement to provide not more than 1,473 car spaces under Clause 52.06-5 of the Planning Scheme, split as 133 retail parking spaces and 1,340 residential spaces.

b. The residential parking provisions do not exceed the maximums, and therefore a permit is not sought in relation to the residential parking

c. The retail parking provisions are proposed in excess of the maximum provisions, and this is considered acceptable on the basis that:

   i) Once considering the loss of existing parking on the land and in the precinct as a result of the works, the overall provision is not considered excessive;

   ii) The likely parking demands associated with the proposed use align with the proposed provision, and generous sustainable transport offerings will not adversely affect a desire to reduce car usage; and

   iii) The proposed nature of the retail parking is such that it will operate as publicly available parking that can support the precinct and future development scenarios in the area.

d. Bicycle parking is provided well in excess of the requirements set out at Clause 52.34 of the Planning Scheme, and in line with the existing permit provisions and rates.

e. The on-site loading areas have been designed to meet the objectives of Clause 65.01 of the Planning Scheme,

f. The design of the proposal, including the car parking layout and access arrangements, bicycle parking and access, and loading arrangements accord with the requirements of the Planning Scheme and the AS2890 Series (where relevant) and current practice and/or can be made to comply through conditions of permit,

g. The level of traffic generated as a result of this proposal is acceptable and, once distributed to the multiple access routes, will not have a detrimental impact on the surrounding road network,

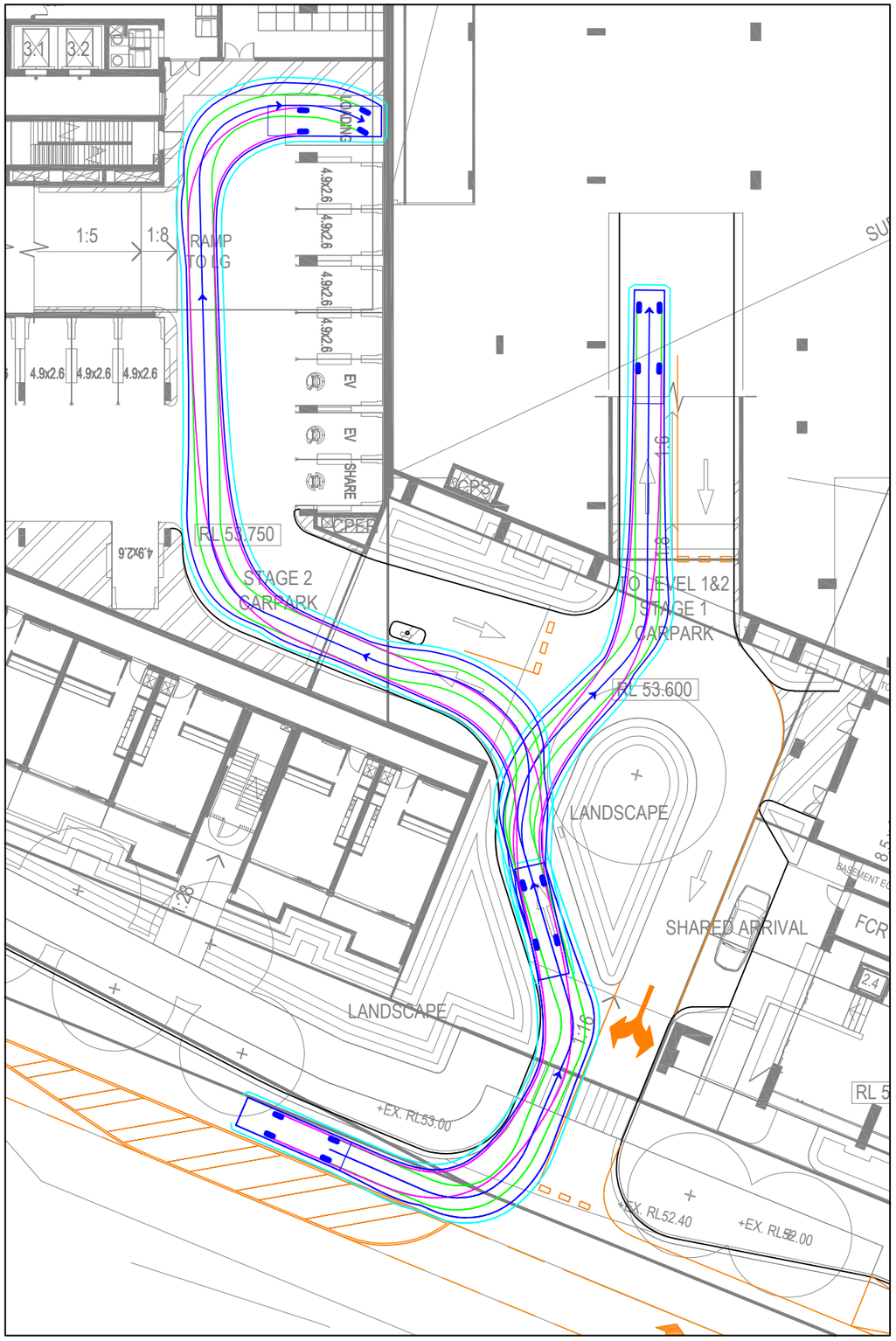
h. The level of traffic generated by the proposal is comparable, and in fact less, than that currently approved for the site, and whilst there will be some redistribution of traffic, it is not to the level that it requires further mitigating works (i.e. signals) to manage the traffic demands.

i. With the exception of the proposed works to Separation Street (to widen along the frontage and provide for the proposed turn lane into the site), there are no further mitigating works required to support the proposal and signalisation of the intersection of Separation Street/Breavington Way is not required to support the proposal.

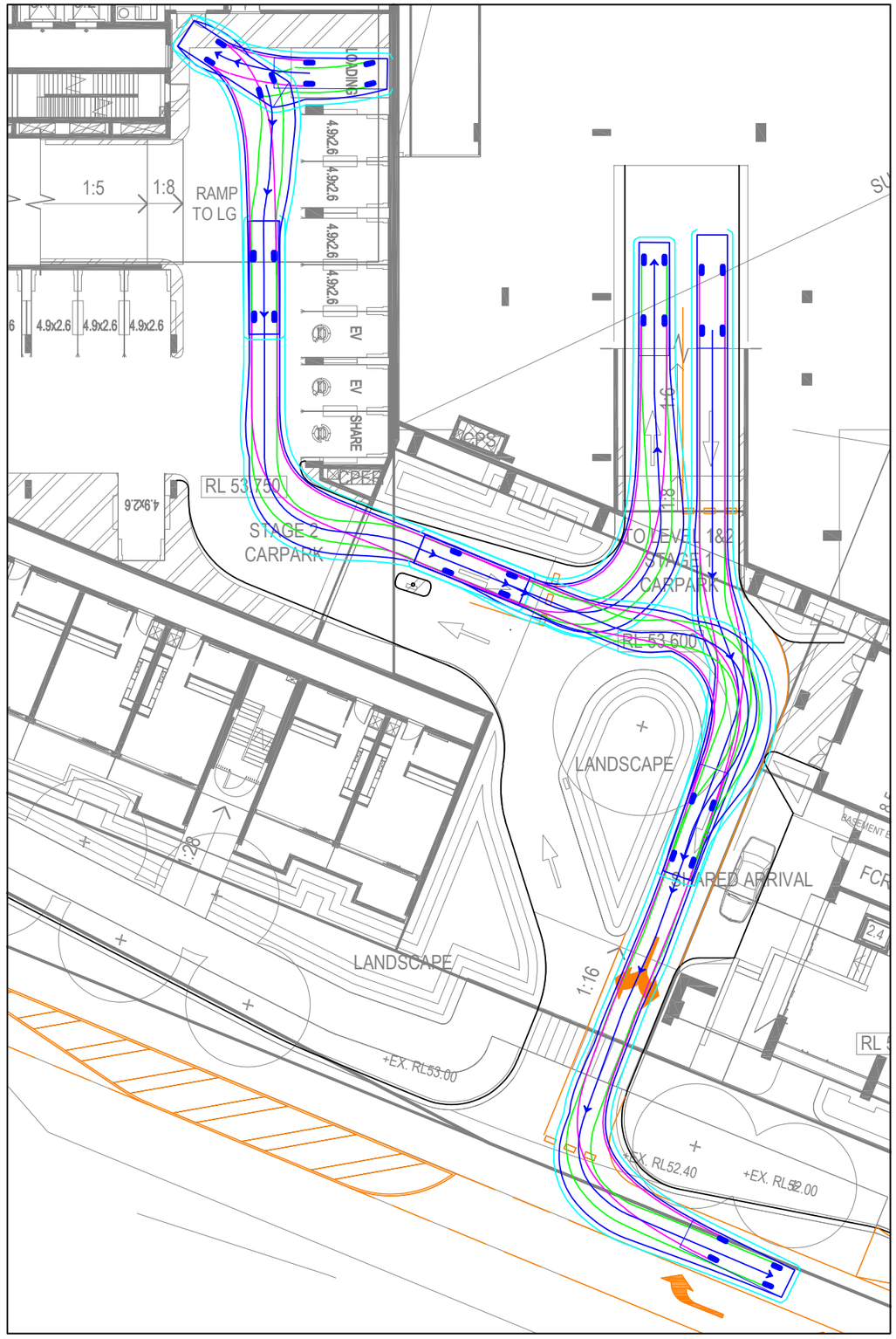
j. There are no traffic engineering reasons why a planning permit for the proposed mixed use development at Northcote Village, should be refused, subject to appropriate conditions.

Appendix A
Swept Paths

RESIDENTIAL WASTE COLLECTION - SITE ENTRY & STAGE 2 INGRESS



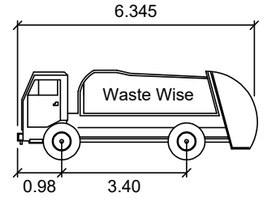
RESIDENTIAL WASTE COLLECTION - SITE EXIT & STAGE 2 EGRESS



VEHICLE PROFILE

VEHICLE USED IN SIMULATION

(VEHICLE SPEED - 5KM/H)



Waste Wise Mini (Hino 300)

Width	:	1.7m
Front Track	:	1.4m
Rear Track	:	1.44m
Kerb to Kerb Radius	:	6.2m

LEGEND

REAR WHEELS — VEHICLE BODY

FRONT WHEELS — BODY CLEARANCE

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	02/06/2026	INITIAL ISSUE	J. LEWIS	C. MORELLO (RPE7781)
B	15/06/2026	FINAL	J. LEWIS	C. MORELLO (RPE7781)

NORTHCOTE VILLAGE

PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:

BASED ON PLANS PREPARED BY WARDLE DATED JUNE 2026

FILE NAME: G27176-07

SHEET NO.: 01

N

SCALE: 1:300 (A3)

0 3 6

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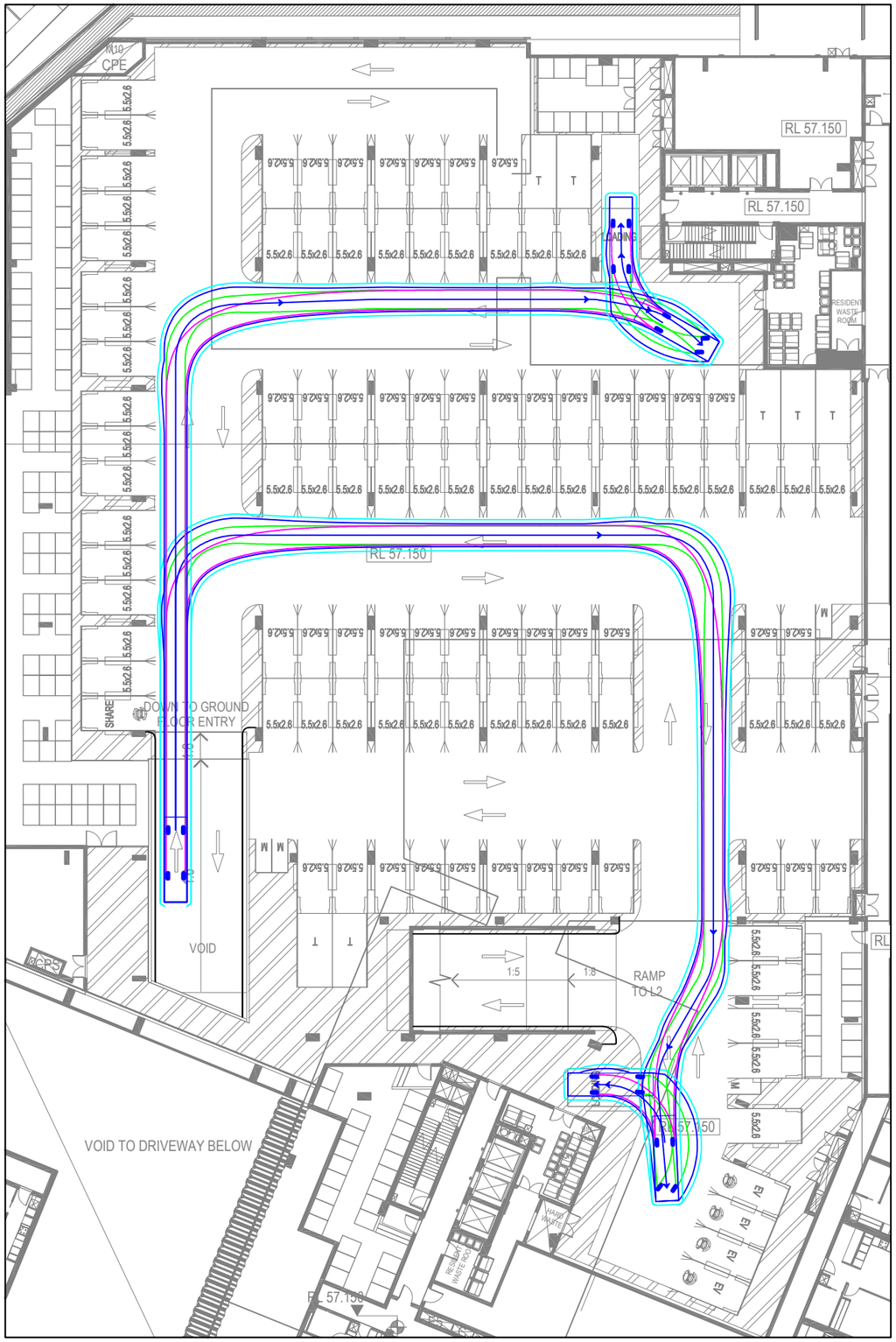
Traffix Group

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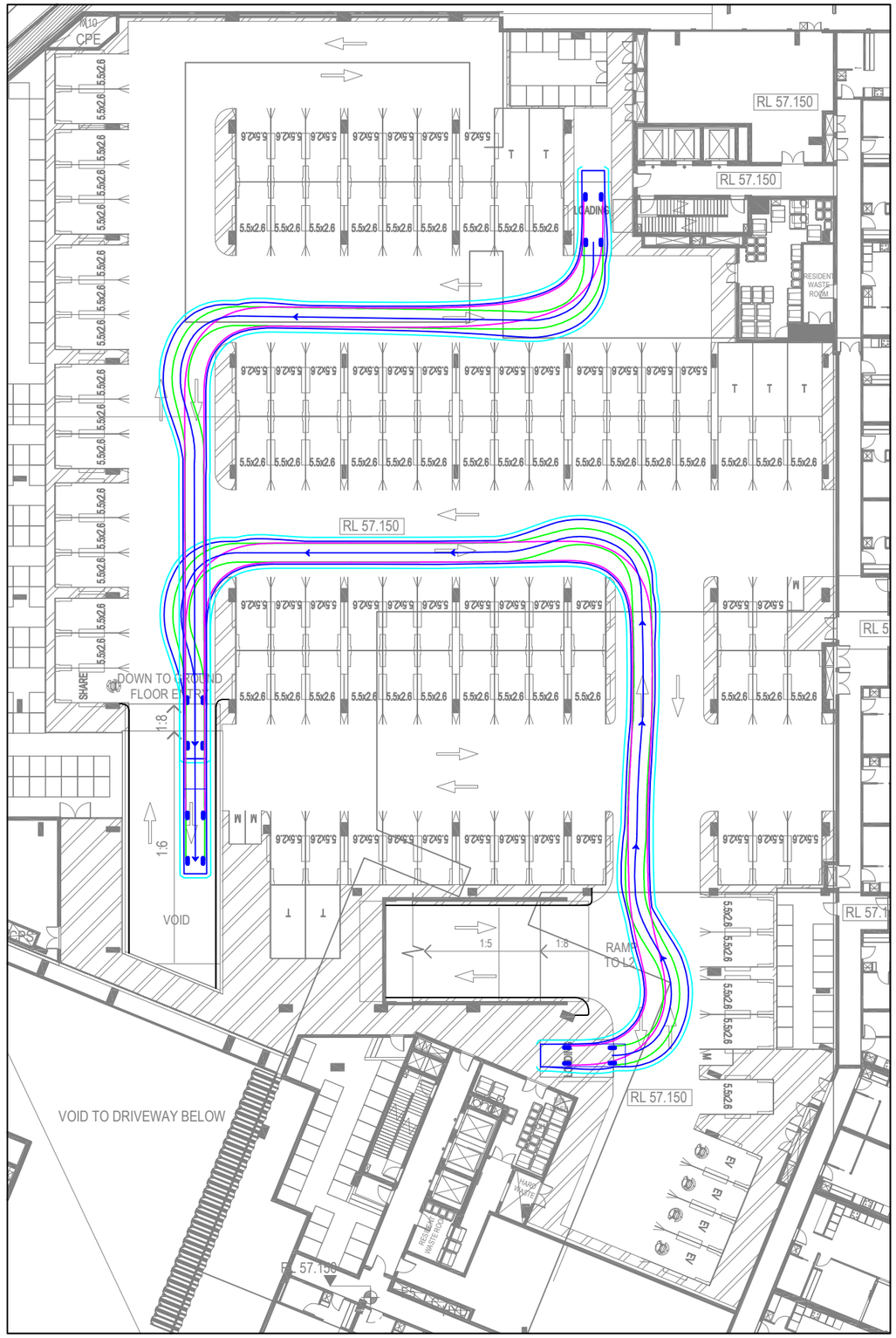
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STAGE 1 RESIDENTIAL WASTE COLLECTION - LOADING BAY INGRESS



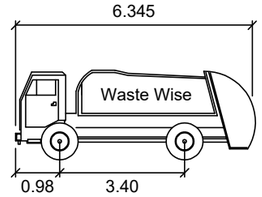
STAGE 1 RESIDENTIAL WASTE COLLECTION - LOADING BAY EGRESS



VEHICLE PROFILE

VEHICLE USED IN SIMULATION

(VEHICLE SPEED - 5KM/H)



Waste Wise Mini (Hino 300)

Width	:	1.7m
Front Track	:	1.4m
Rear Track	:	1.44m
Kerb to Kerb Radius	:	6.2m

LEGEND

REAR WHEELS — VEHICLE BODY

FRONT WHEELS — BODY CLEARANCE

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
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B	15/06/2026	FINAL	J. LEWIS	C. MORELLO (RPE7781)

NORTHCOTE VILLAGE

PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:

BASED ON PLANS PREPARED BY WARDLE DATED JUNE 2026

FILE NAME: G27176-07

SHEET NO.: 02

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SCALE: 1:400 (A3)

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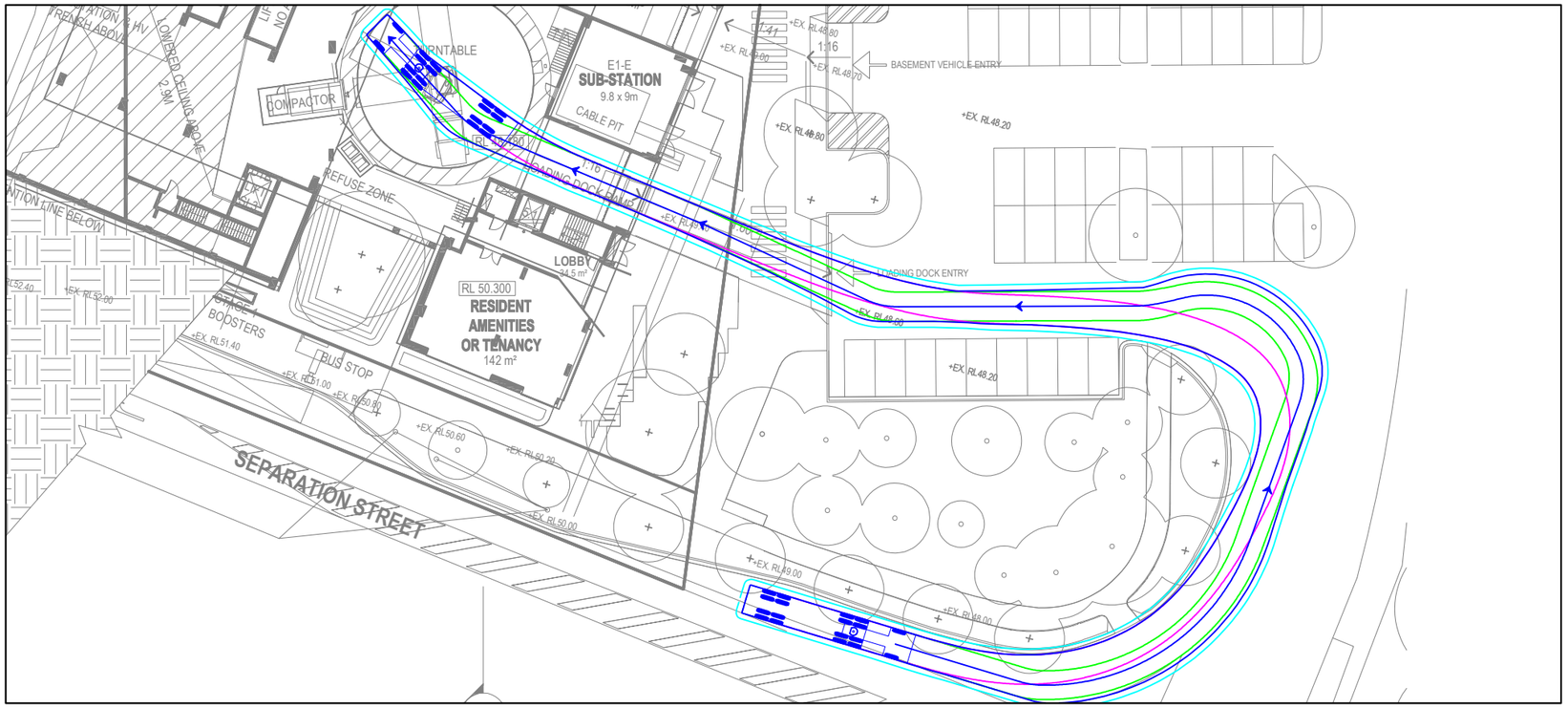
Traffix Group

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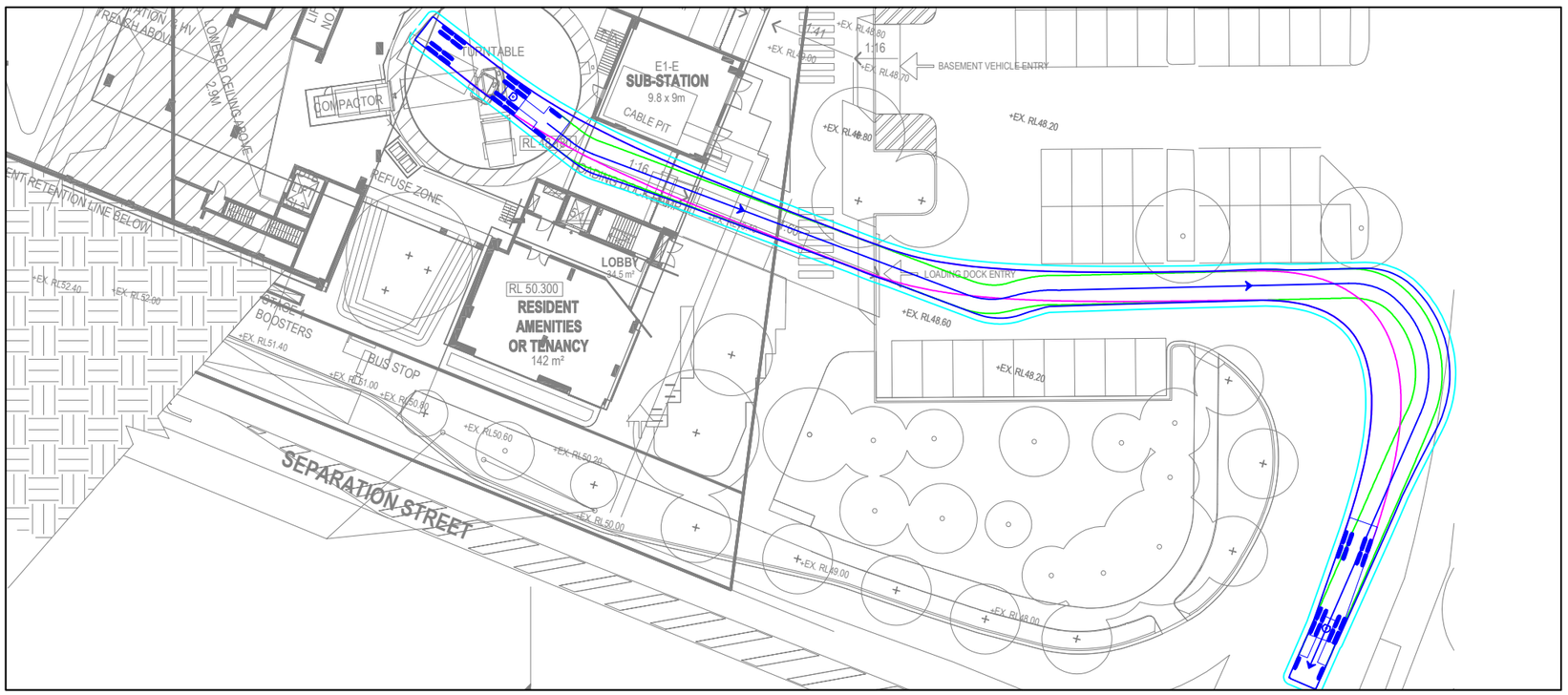
T: (03) 9822 2888

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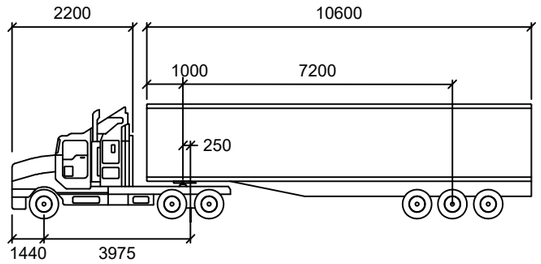
14.5m SEMI RETAIL LOADING - INGRESS



14.5m SEMI RETAIL LOADING - EGRESS



VEHICLE PROFILE



14.5m Semi Trailer

	mm		
Tractor Width	: 2500	Lock to Lock Time	: 6.0
Trailer Width	: 2500	Steering Angle	: 27.7
Tractor Track	: 2500	Articulating Angle	: 70.0
Trailer Track	: 2500		

LEGEND

REAR WHEELS — VEHICLE BODY — FRONT WHEELS — BODY CLEARANCE

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	02/06/2026	INITIAL ISSUE	J. LEWIS	C. MORELLO (RPE7781)
B	15/06/2026	FINAL	J. LEWIS	C. MORELLO (RPE7781)

NORTHCOTE VILLAGE
PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:

BASED ON PLANS PREPARED BY WARDLE DATED JUNE 2026

FILE NAME: G27176-07
SHEET NO.: 03

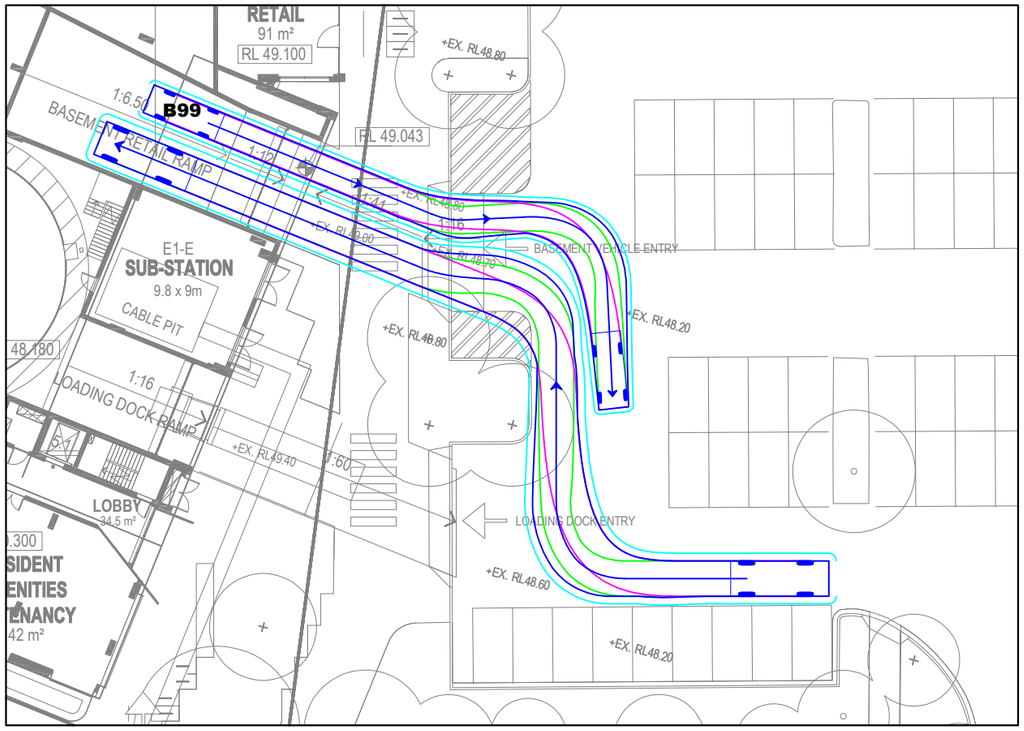
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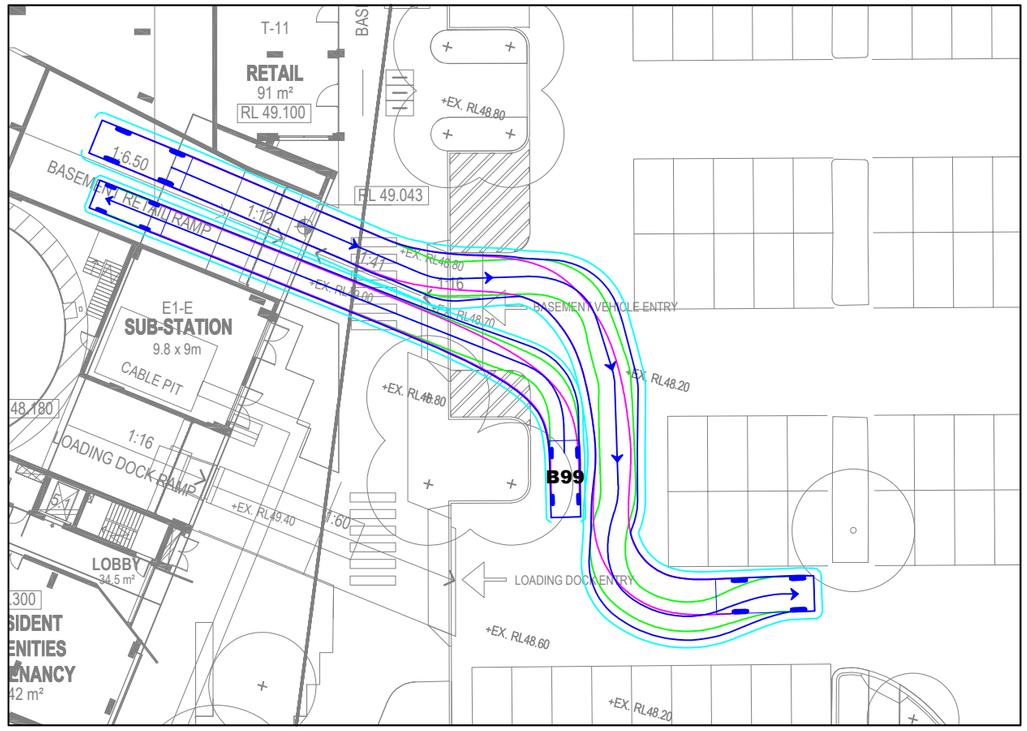
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SRV BASEMENT RAMP - INGRESS



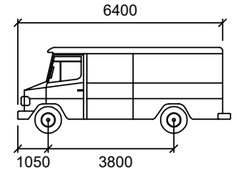
SRV BASEMENT RAMP - EGRESS



VEHICLE PROFILE

VEHICLE USED IN SIMULATION

(VEHICLE SPEED - 5KM/H)



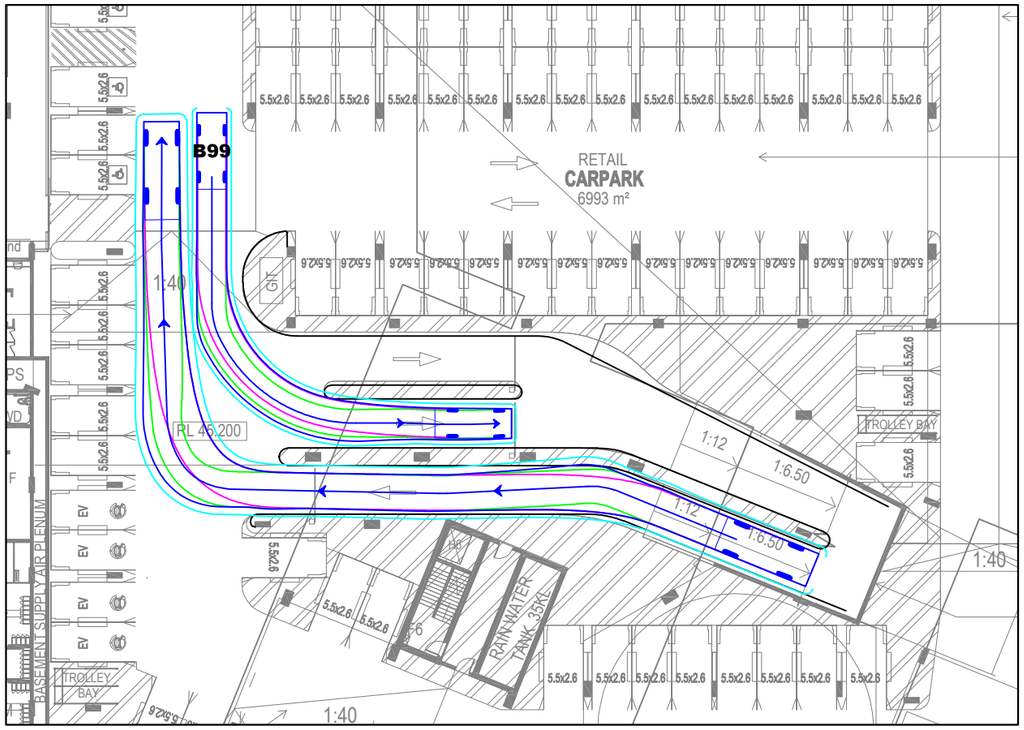
SRV (AS 2890.2)		mm
Width	:	2300
Track	:	2300
Lock to Lock Time	:	6.0
Steering Angle	:	38.0

LEGEND

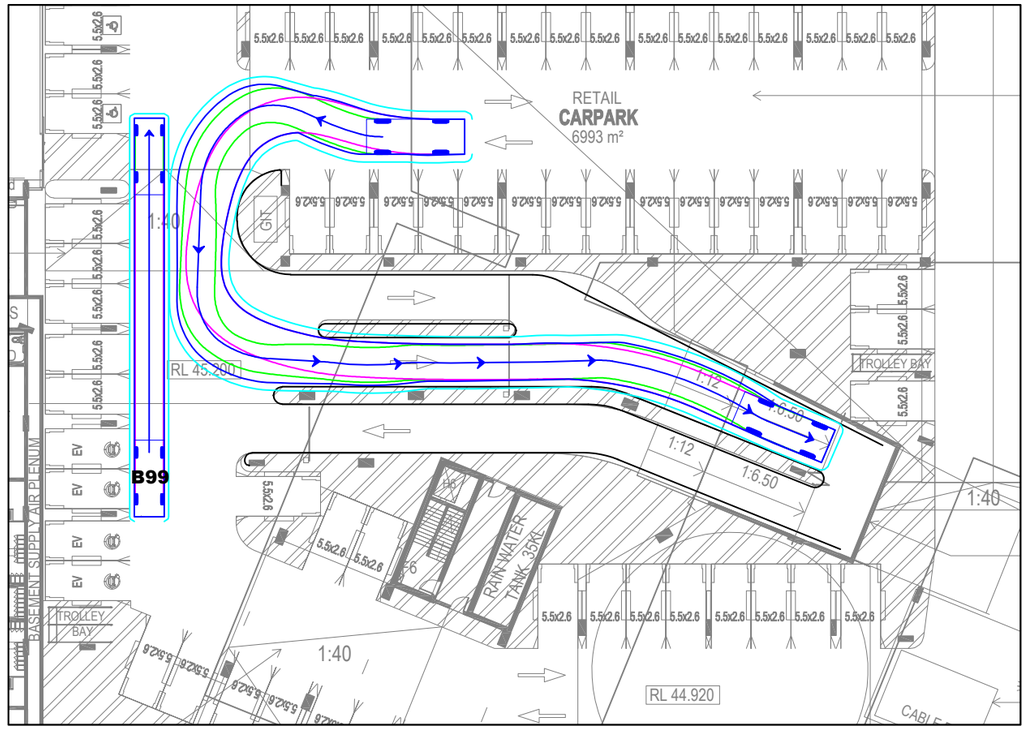
REAR WHEELS — VEHICLE BODY

FRONT WHEELS — BODY CLEARANCE

BASEMENT 01 SRV - INGRESS



BASEMENT 01 SRV - INGRESS



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
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B	15/06/2026	FINAL	J. LEWIS	C. MORELLO (RPE7781)

NORTHCOTE VILLAGE

PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:

BASED ON PLANS PREPARED BY WARDLE DATED JUNE 2026

FILE NAME: G27176-07

SHEET NO.: 04

N

SCALE: 1:400 (A3)

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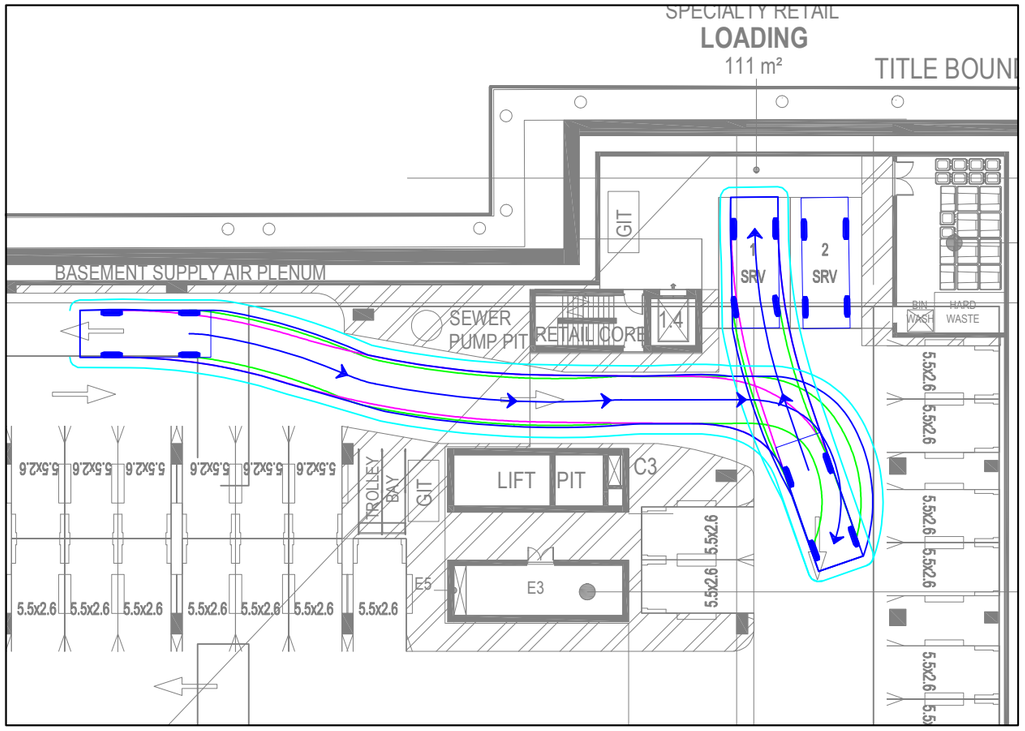
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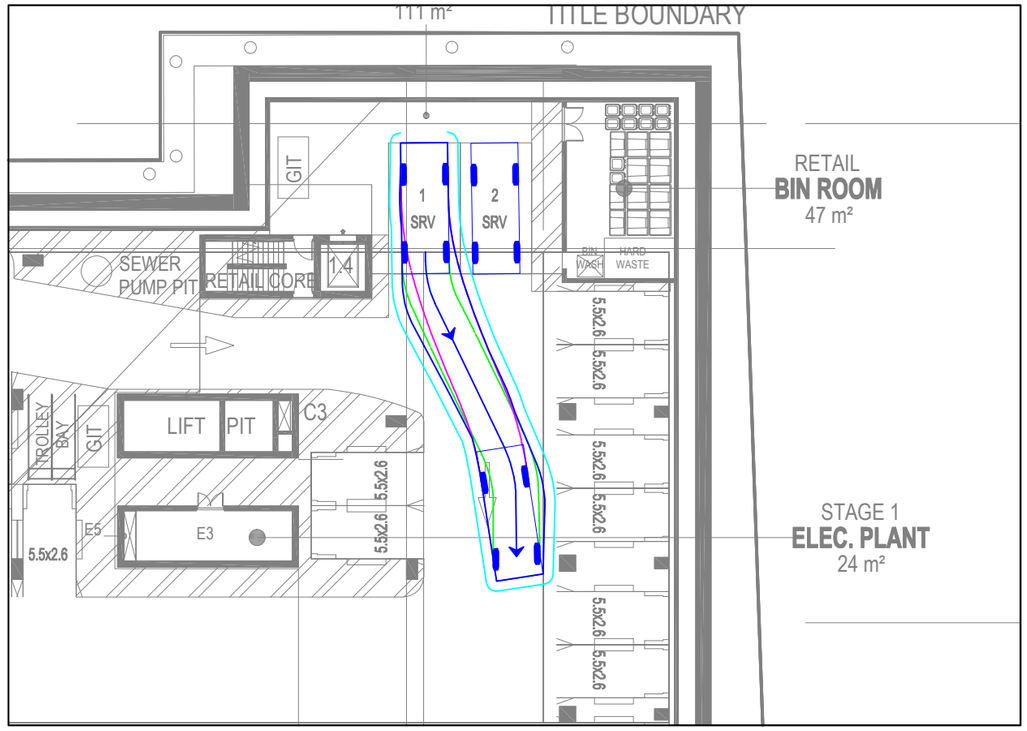
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SRV LOADING BAY 01 - INGRESS

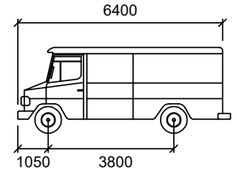


SRV LOADING BAY 01 - EGRESS



VEHICLE PROFILE

VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)



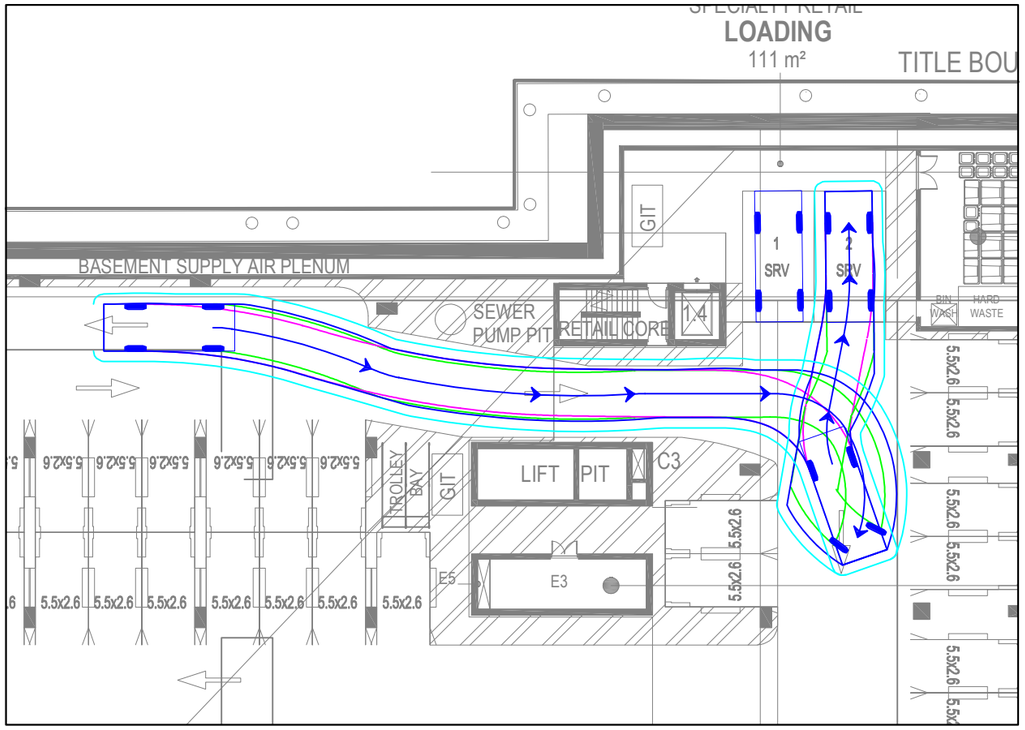
SRV (AS 2890.2) mm

Width	:	2300
Track	:	2300
Lock to Lock Time	:	6.0
Steering Angle	:	38.0

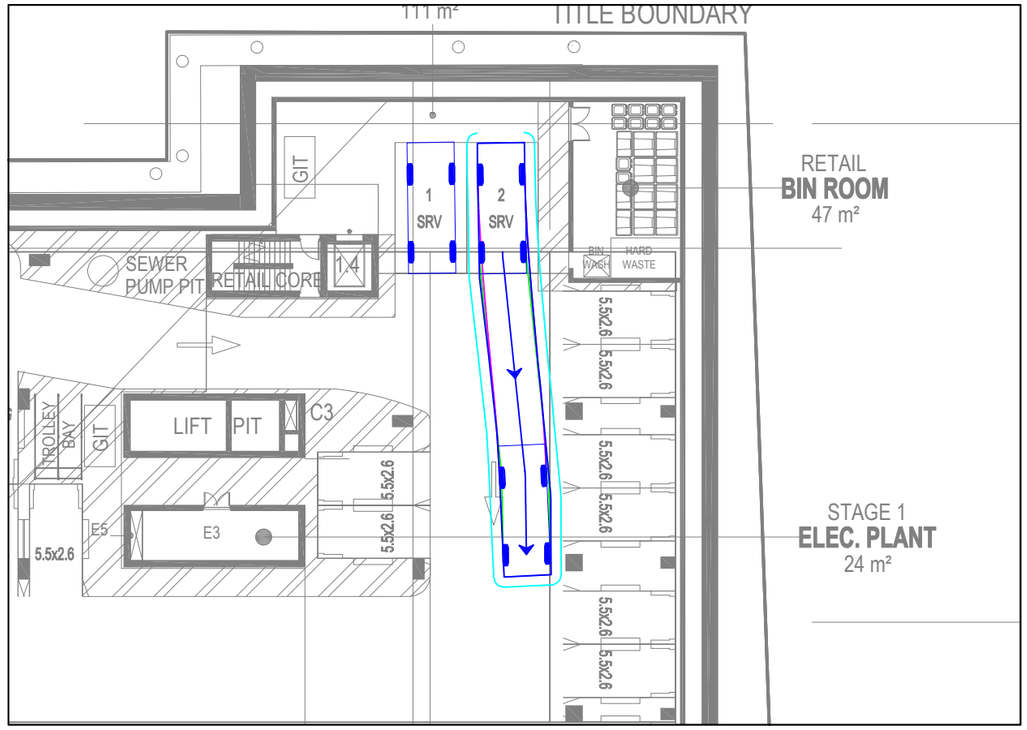
LEGEND

REAR WHEELS
FRONT WHEELS
VEHICLE BODY
BODY CLEARANCE

SRV LOADING BAY 02 - INGRESS



SRV LOADING BAY 02 - EGRESS



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B	15/06/2026	FINAL	J. LEWIS	C. MORELLO (RPE7781)

NORTHCOTE VILLAGE
PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:

BASED ON PLANS PREPARED BY WARDLE DATED JUNE 2026

FILE NAME: G27176-07
SHEET NO.: 05

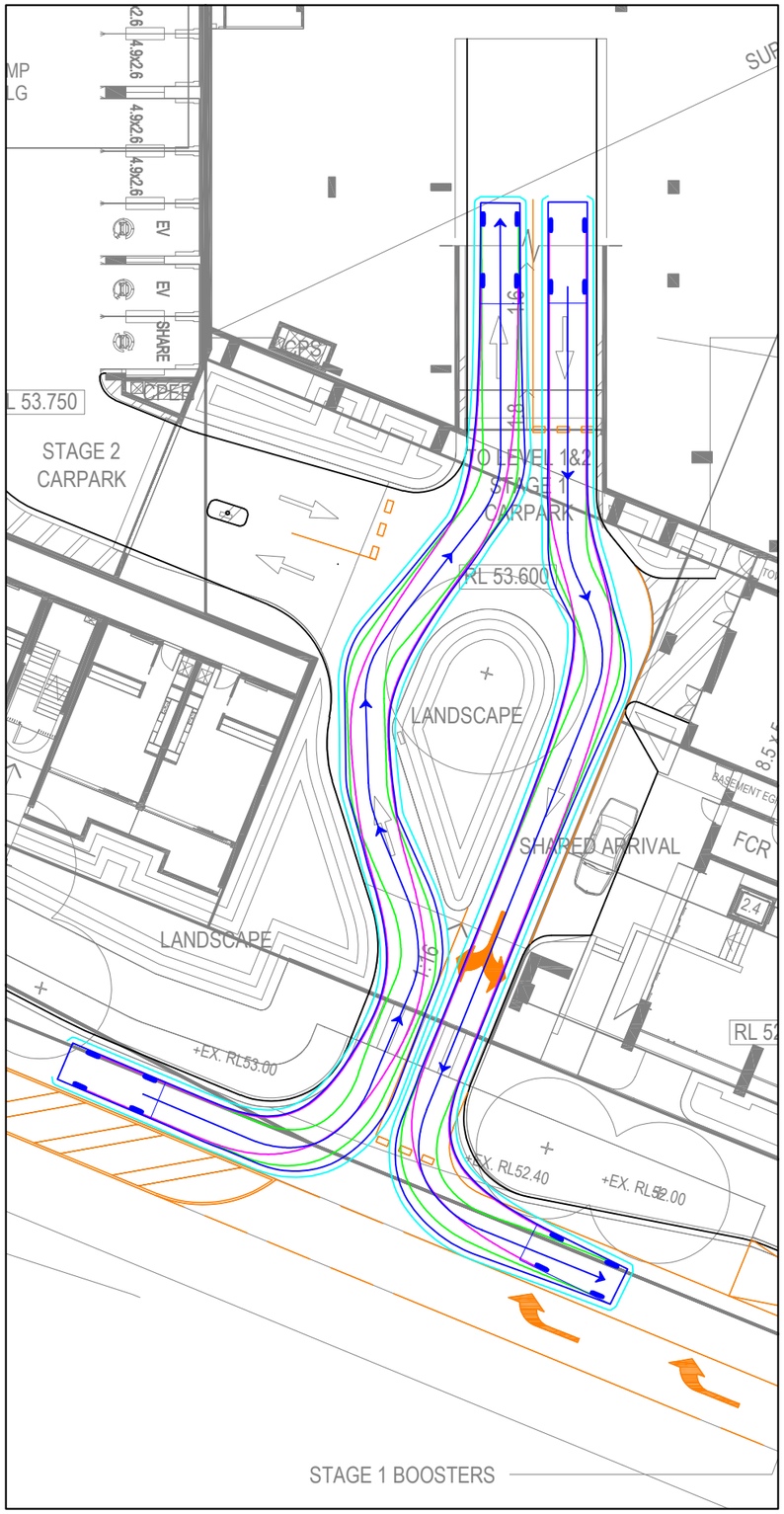
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SCALE: 1:300 (A3)
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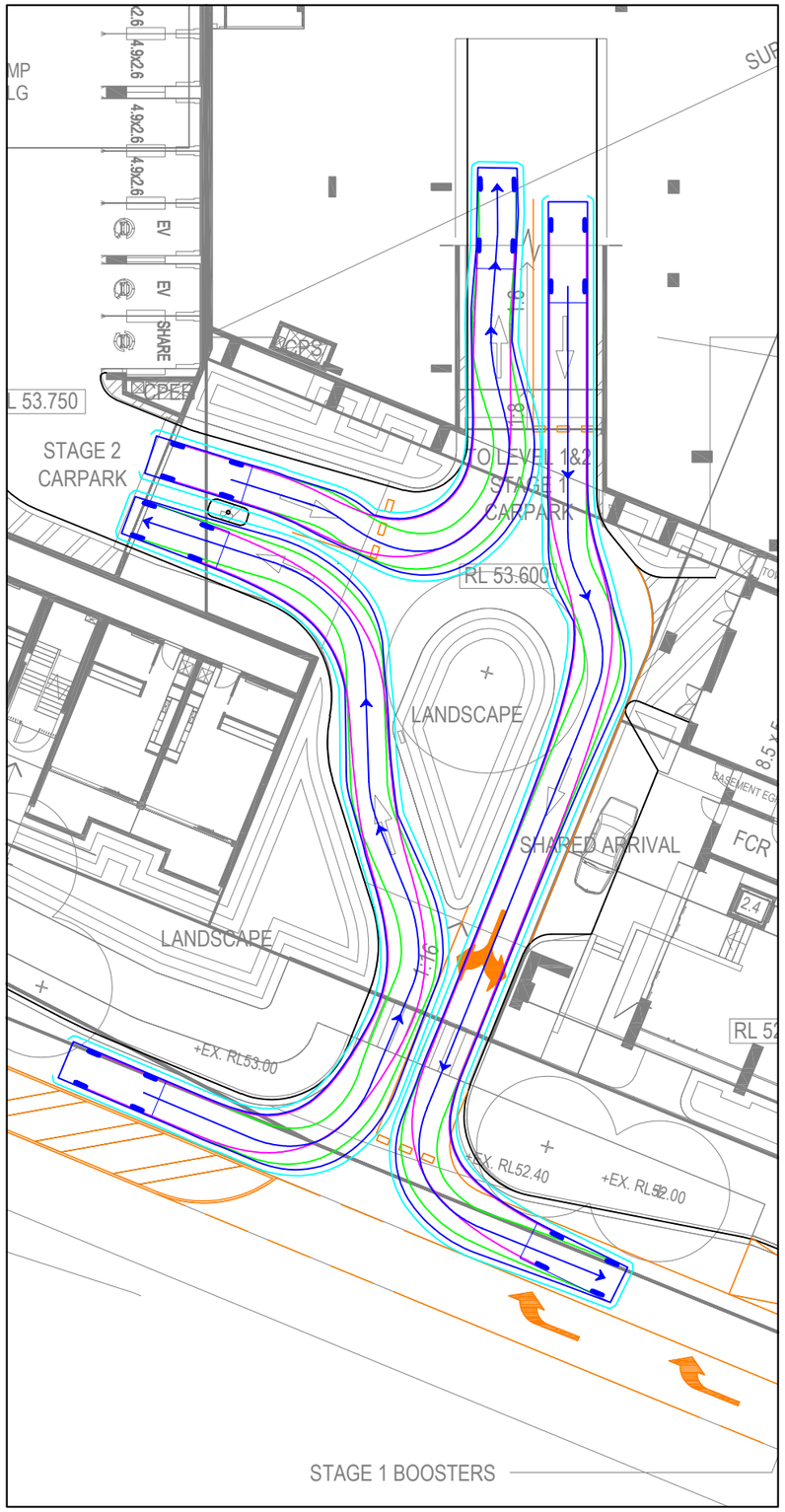
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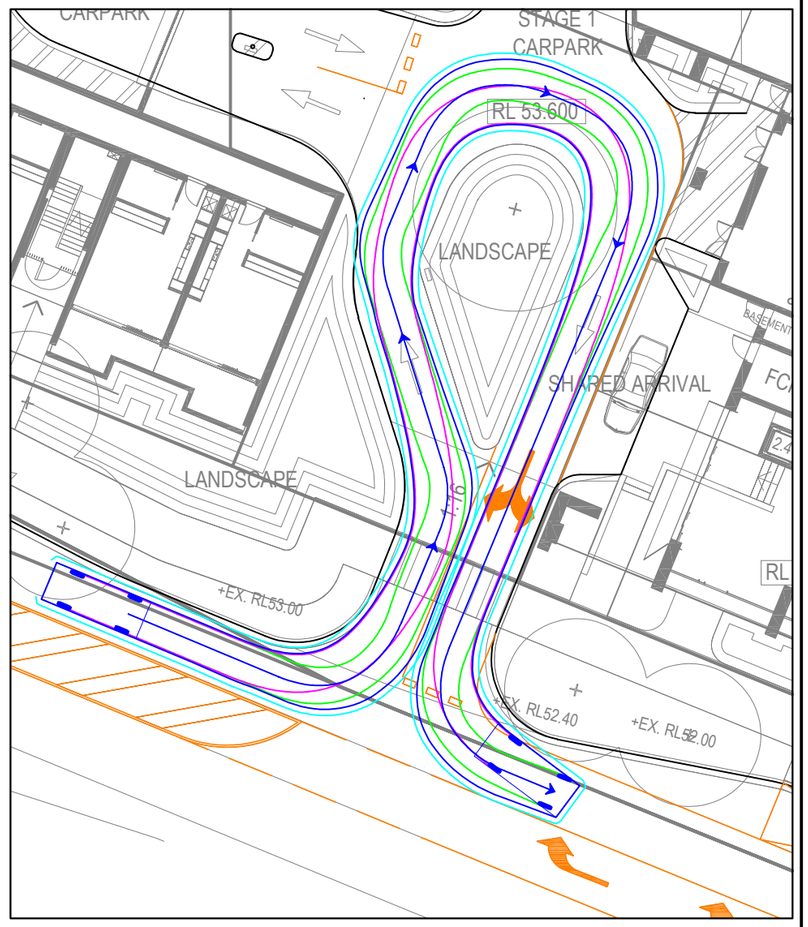
SEPARATION STREET SITE ACCESS - INGRESS



SEPARATION STREET SITE ACCESS - INGRESS

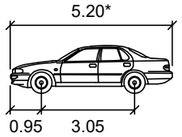


SEPARATION STREET SITE ACCESS - INGRESS



VEHICLE USED IN SIMULATION

(VEHICLE SPEED - 5KM/H)



99th percentile
(AS/NZS 2890.1:2004)

Width	: 1.94m
Track	: 1.84m
Kerb to Kerb Radius	: 6.3m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

LEGEND

REAR WHEELS — VEHICLE BODY
FRONT WHEELS — BODY CLEARANCE

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	02/06/2026	INITIAL ISSUE	J. LEWIS	C. MORELLO (RPE7781)
B	15/06/2026	FINAL	J. LEWIS	C. MORELLO (RPE7781)

NORTHCOTE VILLAGE
PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:

BASED ON PLANS PREPARED BY WARDLE DATED JUNE 2026

FILE NAME: G27176-07
SHEET NO.: 06

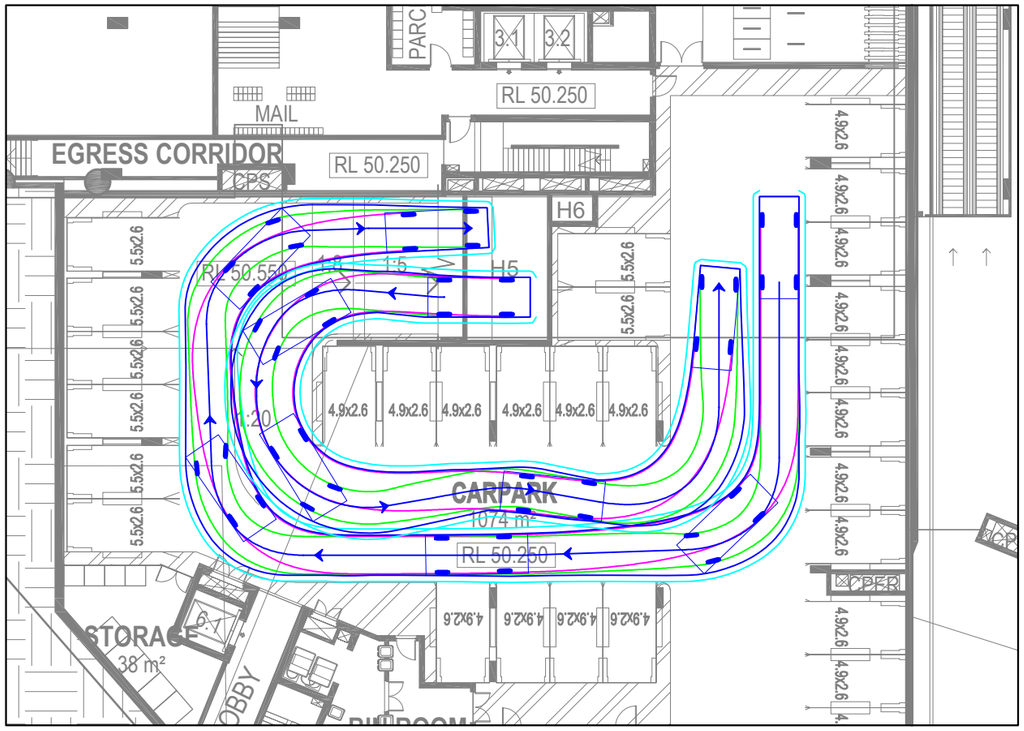
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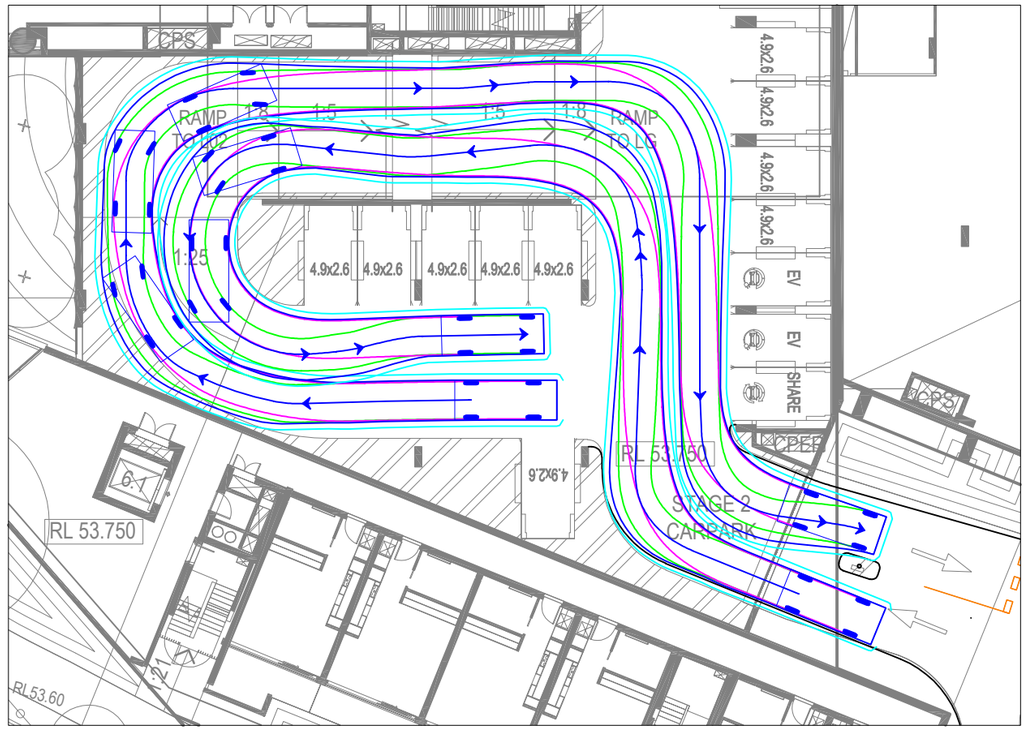
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STAGE 2 LOWER GROUND CIRCULATION



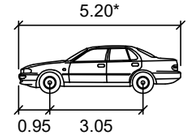
STAGE 2 UPPER GROUND CIRCULATION



VEHICLE PROFILE

VEHICLE USED IN SIMULATION

(VEHICLE SPEED - 5KM/H)



99th percentile
(AS/NZS 2890.1:2004)

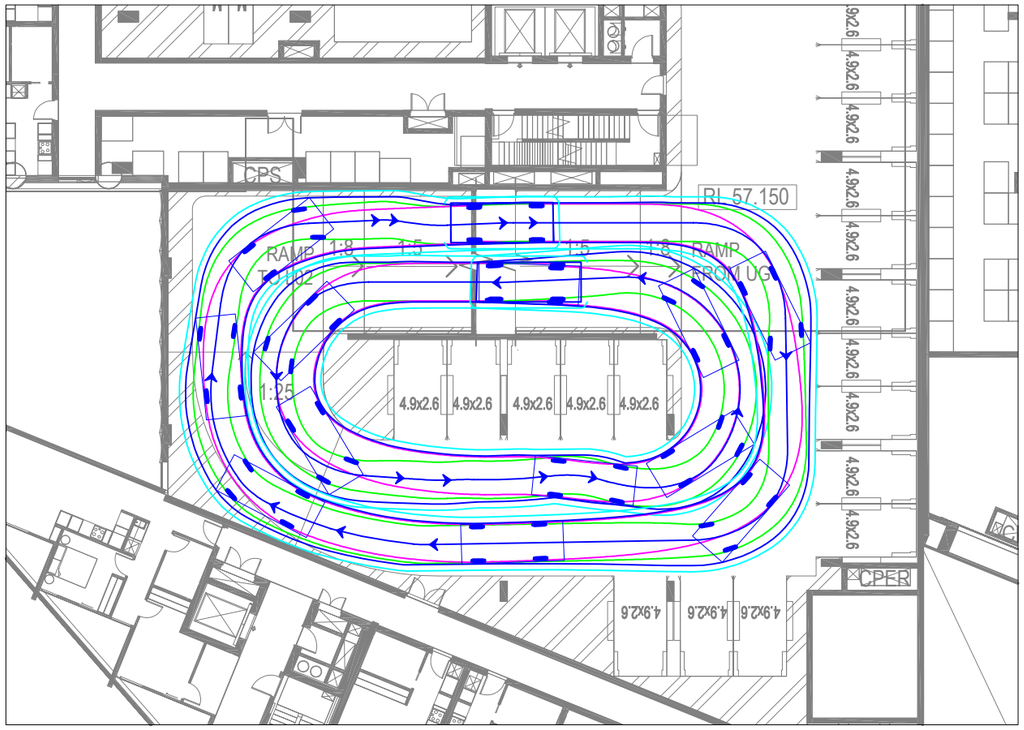
Width	:	1.94m
Track	:	1.84m
Kerb to Kerb Radius	:	6.3m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

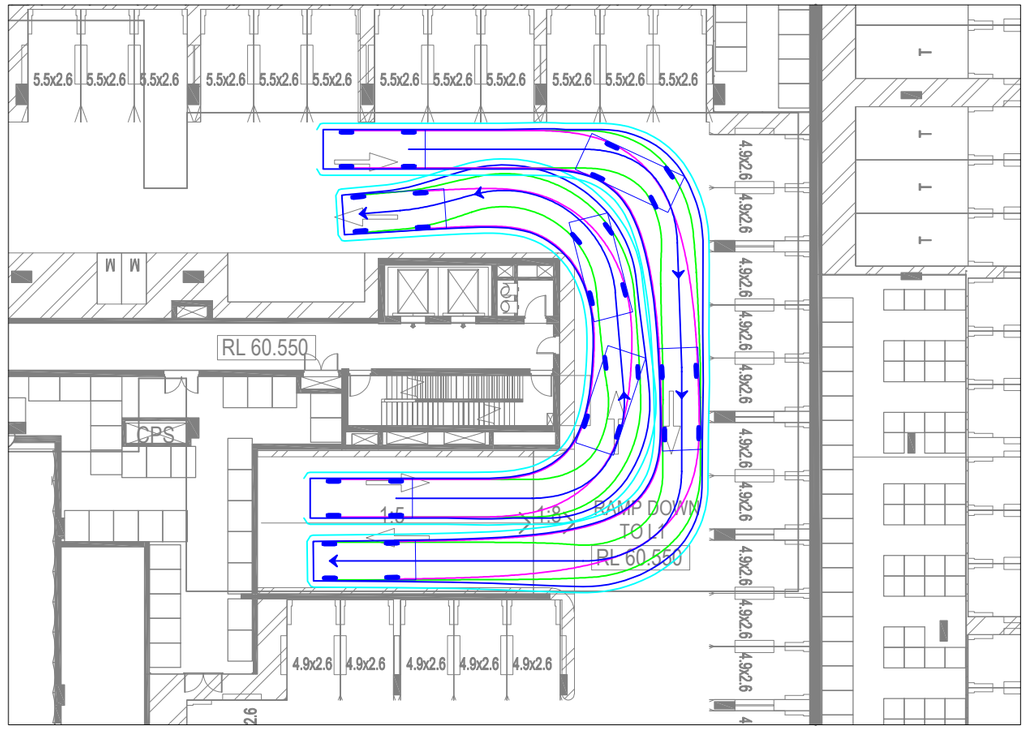
LEGEND

REAR WHEELS — VEHICLE BODY
FRONT WHEELS — BODY CLEARANCE

STAGE 2 LEVEL 01 CIRCULATION



STAGE 2 LEVEL 02 CIRCULATION



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
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B	15/06/2026	FINAL	J. LEWIS	C. MORELLO (RPE7781)

NORTHCOTE VILLAGE
PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:

BASED ON PLANS PREPARED BY WARDLE DATED JUNE 2026

FILE NAME: G27176-07
SHEET NO.: 07

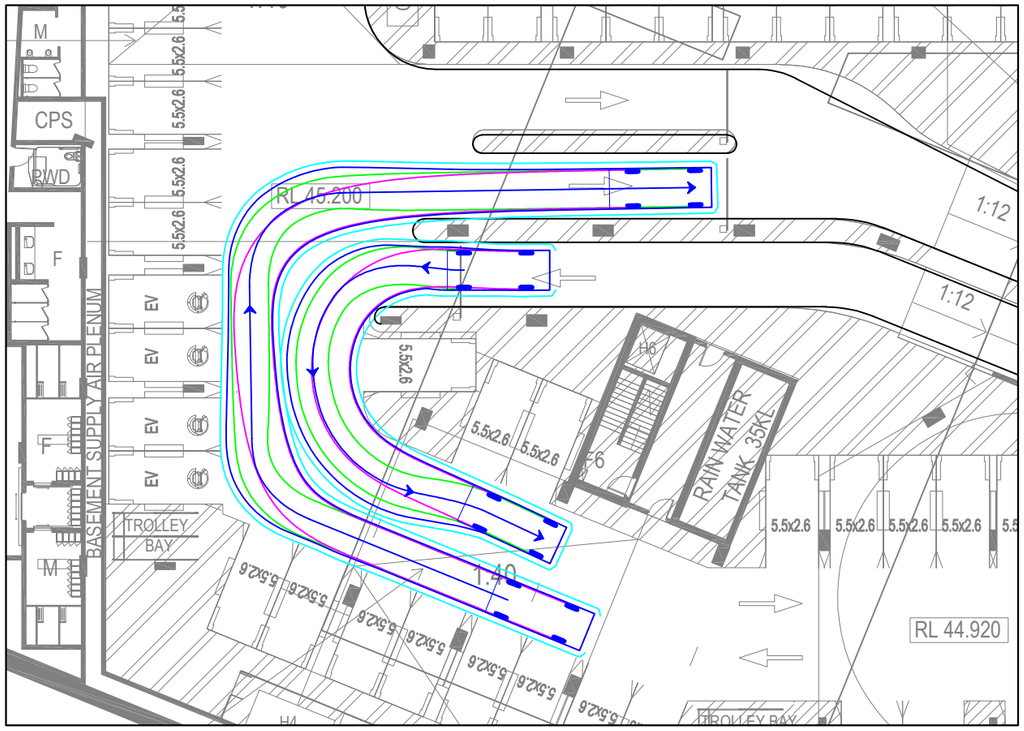
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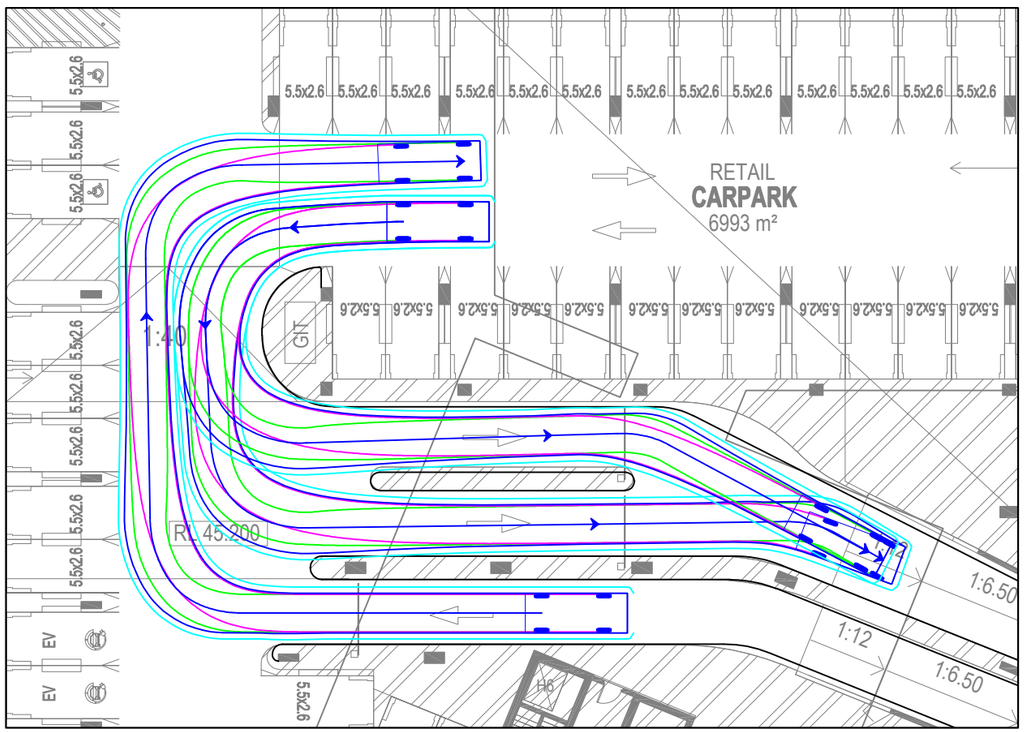
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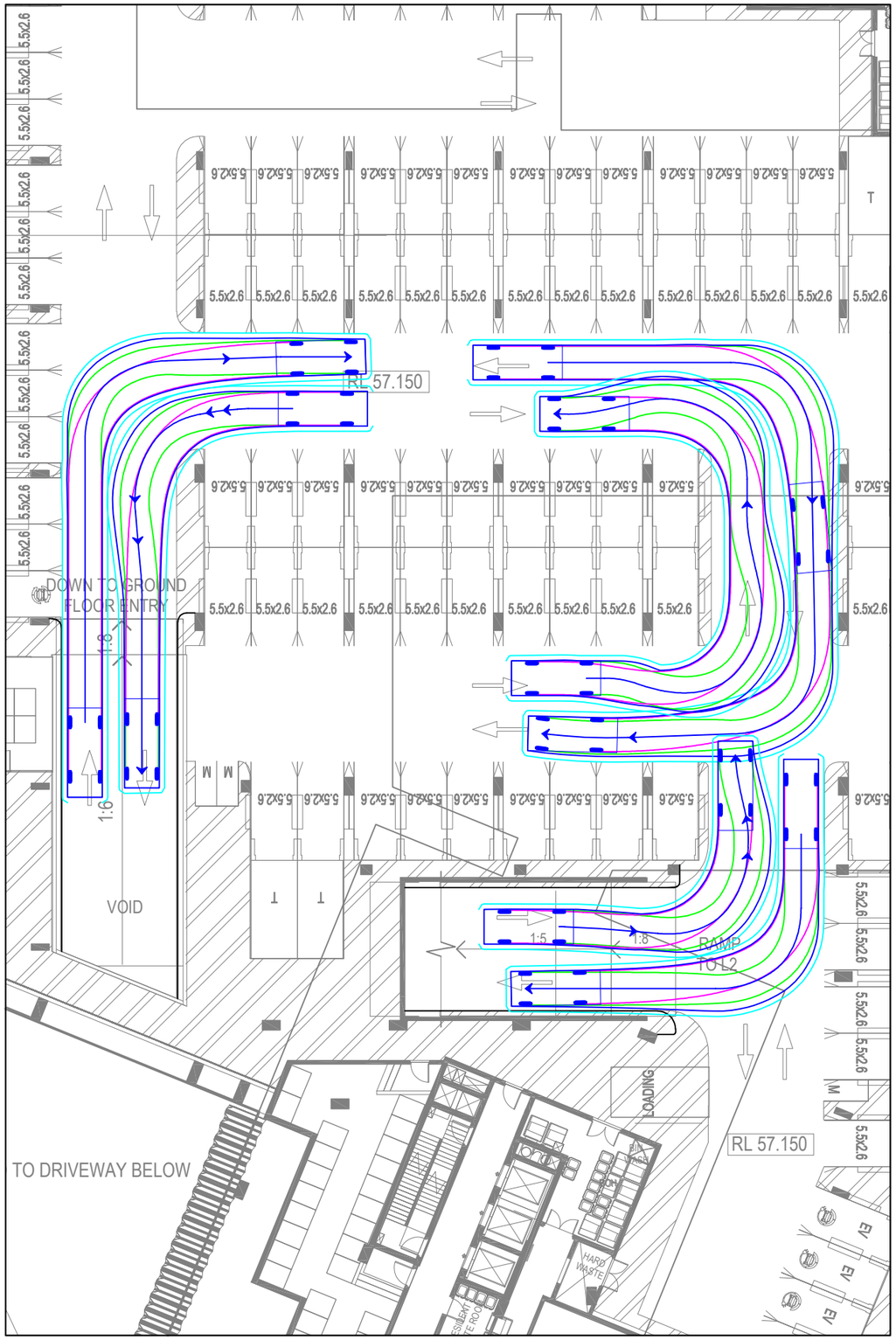
BASEMENT 1 RAMP CIRCULATION SOUTH



BASEMENT 1 RAMP CIRCULATION NORTH



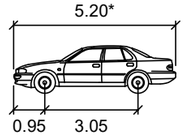
STAGE 1 RESIDENTIAL CAR PARK - TYPICAL CIRCULATION



VEHICLE PROFILE

VEHICLE USED IN SIMULATION

(VEHICLE SPEED - 5KM/H)



99th percentile
(AS/NZS 2890.1:2004)

Width	:	1.94m
Track	:	1.84m
Kerb to Kerb Radius	:	6.3m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

LEGEND

REAR WHEELS — VEHICLE BODY
FRONT WHEELS — BODY CLEARANCE

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	02/06/2026	INITIAL ISSUE	J. LEWIS	C. MORELLO (RPE7781)
B	15/06/2026	FINAL	J. LEWIS	C. MORELLO (RPE7781)

NORTHCOTE VILLAGE
PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:

BASED ON PLANS PREPARED BY WARDLE DATED JUNE 2026

FILE NAME: G27176-07
SHEET NO.: 08

N

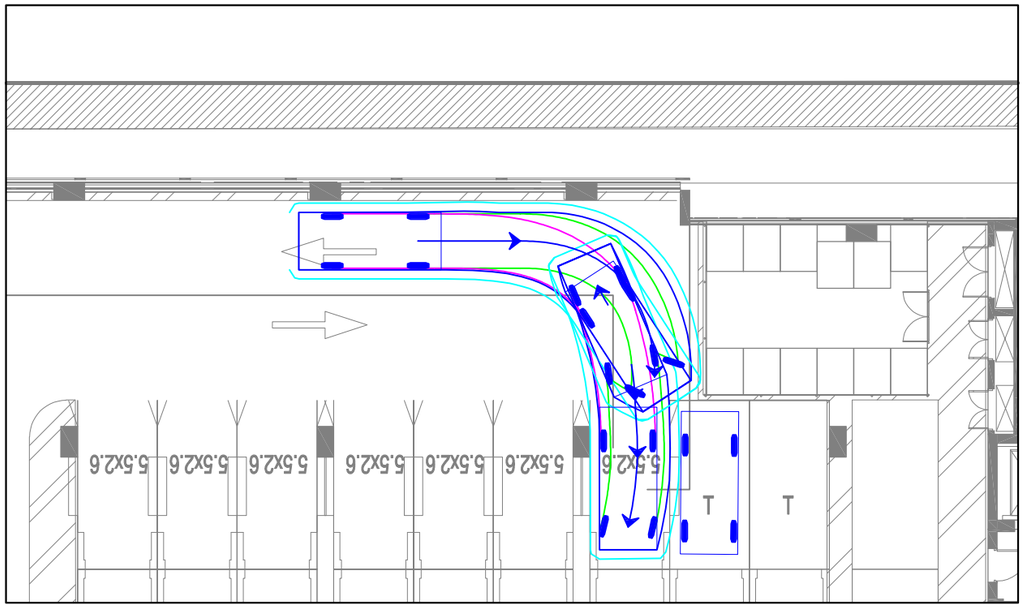
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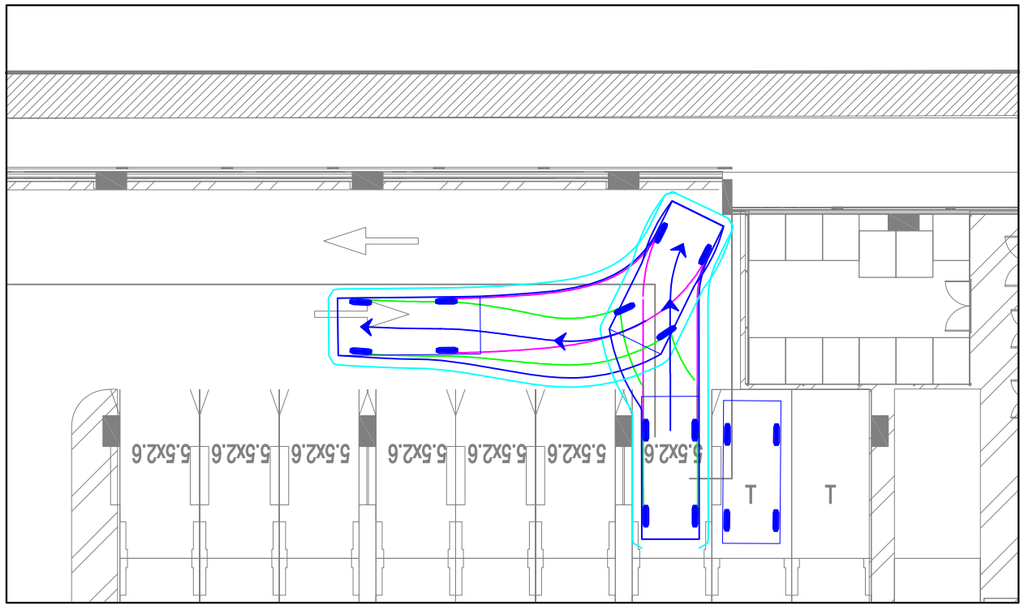
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CRITICAL END SPACE - INGRESS



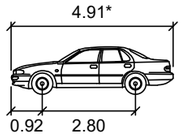
CRITICAL END SPACE - EGRESS



VEHICLE PROFILE

VEHICLE USED IN SIMULATION

(VEHICLE SPEED - 5KM/H)



85th percentile
(AS/NZS 2890.1:2004)

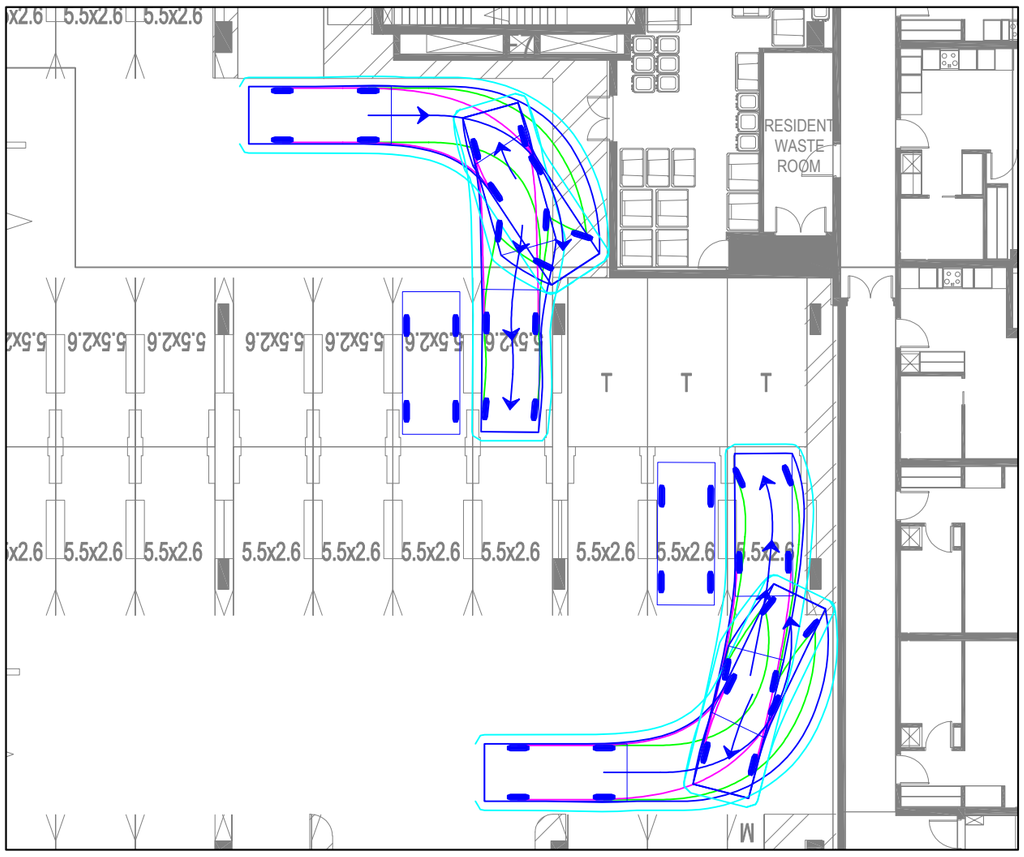
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Track	:	1.77m
Kerb to Kerb Radius	:	5.8m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

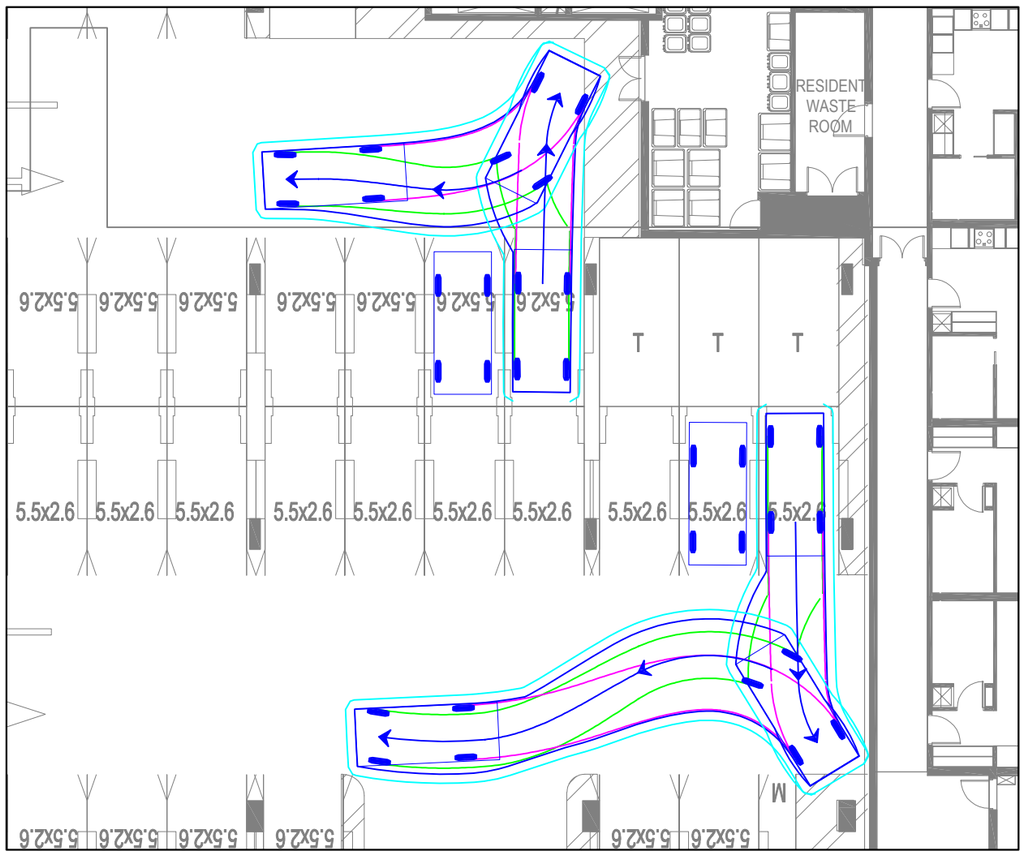
LEGEND

- REAR WHEELS
- FRONT WHEELS
- VEHICLE BODY
- BODY CLEARANCE

CRITICAL END SPACES - INGRESS



CRITICAL END SPACE - EGRESS



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	02/06/2026	INITIAL ISSUE	J. LEWIS	C. MORELLO (RPE7781)
B	15/06/2026	FINAL	J. LEWIS	C. MORELLO (RPE7781)

NORTHCOTE VILLAGE

PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:

BASED ON PLANS PREPARED BY WARDLE DATED JUNE 2026

FILE NAME: G27176-07

SHEET NO.: 09

N

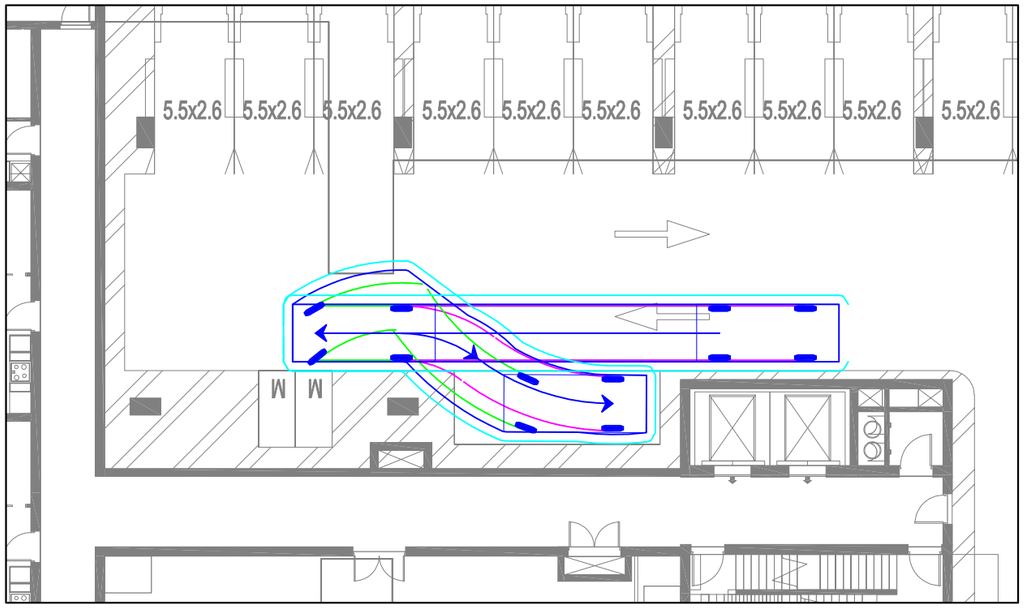
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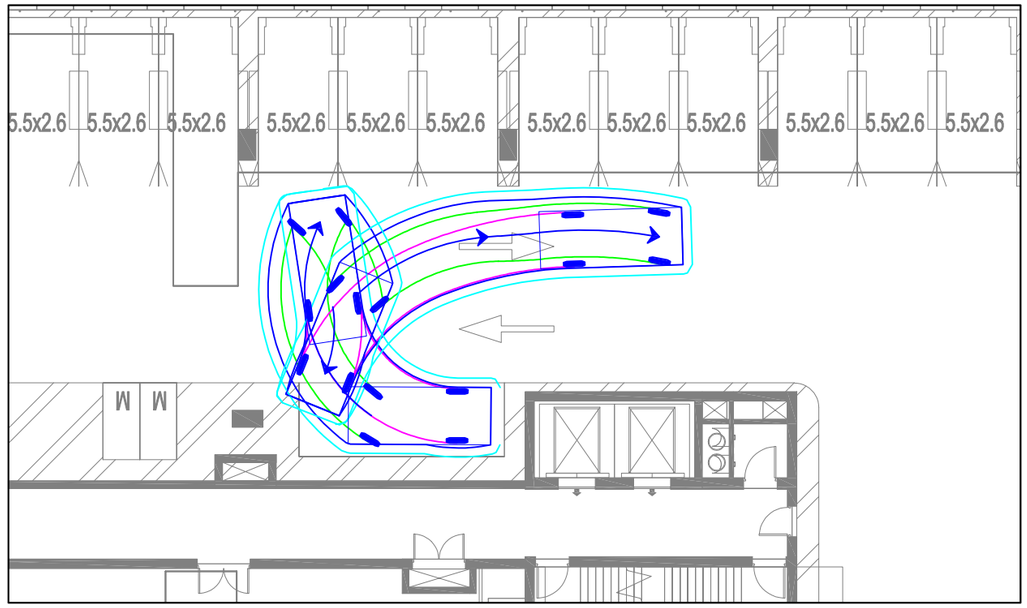
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CRITICAL END SPACE - INGRESS



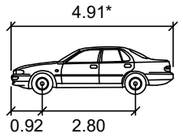
CRITICAL END SPACE - EGRESS



VEHICLE PROFILE

VEHICLE USED IN SIMULATION

(VEHICLE SPEED - 5KM/H)



85th percentile
(AS/NZS 2890.1:2004)

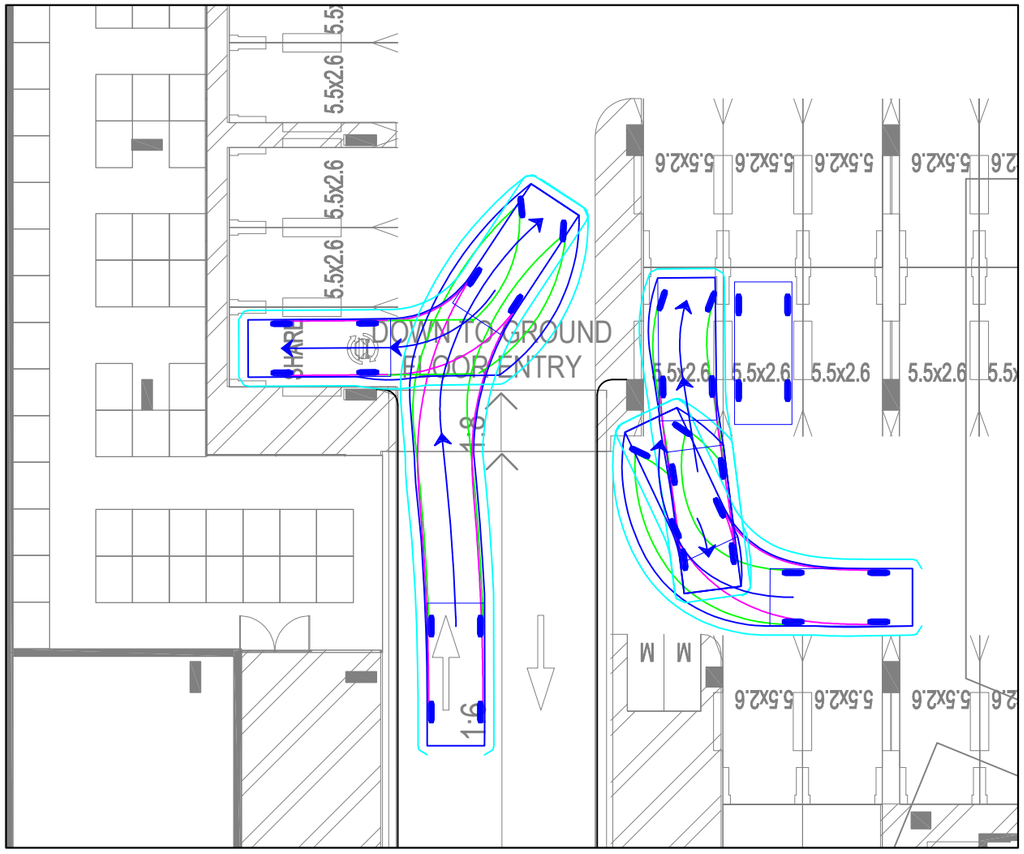
Width	:	1.87m
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Kerb to Kerb Radius	:	5.8m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

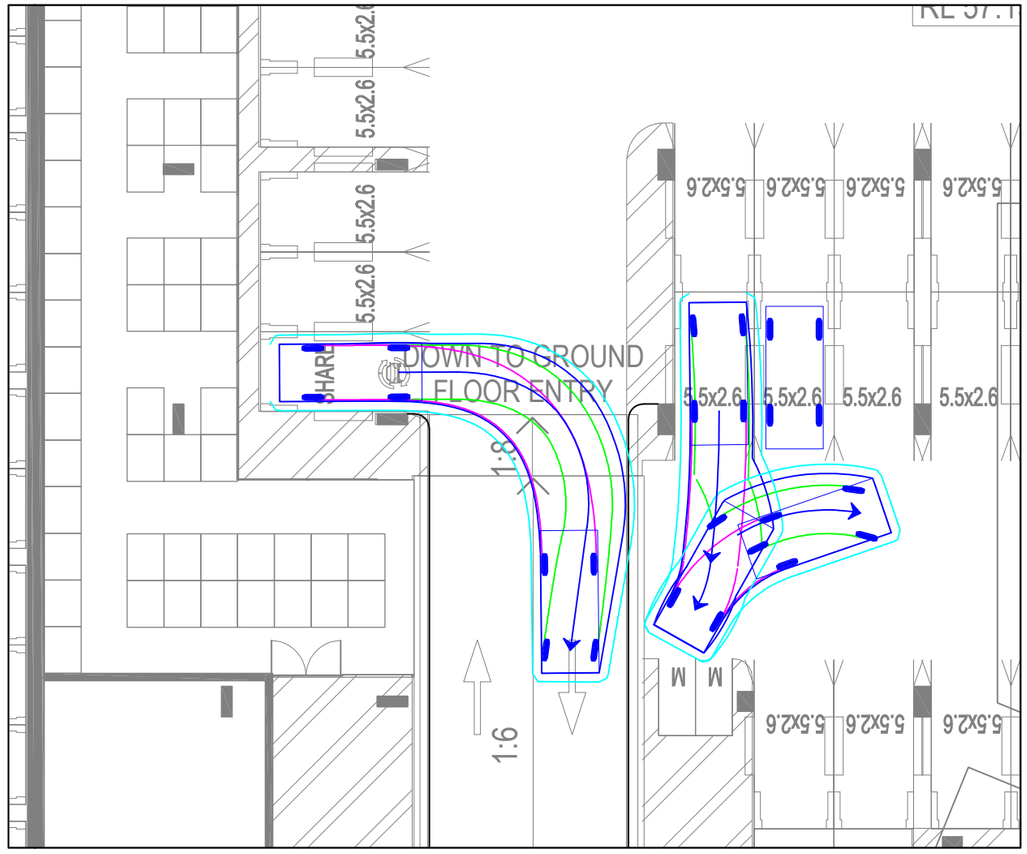
LEGEND

- REAR WHEELS
- FRONT WHEELS
- VEHICLE BODY
- BODY CLEARANCE

CRITICAL END SPACES - INGRESS



CRITICAL END SPACE - EGRESS



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	02/06/2026	INITIAL ISSUE	J. LEWIS	C. MORELLO (RPE7781)
B	15/06/2026	FINAL	J. LEWIS	C. MORELLO (RPE7781)

NORTHCOTE VILLAGE
PROPOSED MIXED USE DEVELOPMENT

GENERAL NOTES:

BASED ON PLANS PREPARED BY WARDLE DATED JUNE 2026

FILE NAME: G27176-07
SHEET NO.: 10

N

SCALE: 1:200 (A3)

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