

Woolworths Supermarket Madras Street, St Albans

Integrated Transport Assessment

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Prepared for:
Woolworths New Zealand

Prepared by:
Stantec NZ

Project:
310206139



Woolworths Supermarket Madras Street, St Albans

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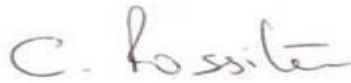
Woolworths Supermarket Madras Street, St Albans

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Prepared by



Signature

Chris Rossiter

Printed Name

Reviewed by



Signature

Andrew Metherell

Printed Name

Approved by



Signature

Andrew Metherell

Printed Name



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Abbreviations

ADT	Average Daily Traffic Volume
CCC	Christchurch City Council
GFA	Gross Floor Area
GLFA	Gross Leasable Floor Area
HTGA	High Traffic Generating Activity



1 Introduction

Woolworths New Zealand Limited (Woolworths) proposes to establish a new supermarket and retail development on Madras Street which forms the border between the St Albans and Edgware suburbs of Christchurch. The planned neighbourhood centre comprises about 5,000m² Gross Leasable Floor Area (GLFA) of predominantly retail activity, anchored by the 3,700m² supermarket.

The brownfield site was formerly occupied by the Orion lines company and has been vacant for a long period. It contains a split residential and commercial zoning in the Christchurch City Council (CCC) District Plan. The northern portion of the site is zoned as Residential Medium Density and the southern part of the site is zoned as Commercial Local.

Since the new building will have a GLFA that exceeds 500 m², the supermarket represents a High Traffic Generating Activity (HTGA) and is a Restricted Discretionary Activity under the District Plan transport rules. A “full” Integrated Transport Assessment (ITA) is a requirement to provide assessment of effects on the transport network in relation to Council’s matters of discretion including:

- a. Access and manoeuvring;
- b. Design and Layout;
- c. Heavy vehicles;
- d. Accessibility of the location;
- e. Network effects; and
- f. Strategic framework.

This ITA has been prepared to address the matters of discretion and has been structured to provide:

- Description of the existing transport infrastructure in the St Albans area;
- Description of the existing travel patterns in the St Albans area;
- Description of the proposed development;
- Assessment of expected traffic generation;
- Assessment of transport effects; and,
- Assessment of compliance with the District Plan transport rules.



2 Development Site Context

2.1 Location in the Road Network

Figure 2-1 shows the development site location in the context of the wider central city area. The site is located north of Bealey Avenue which forms the northern boundary to the 'Four Avenues' area. Madras Street, which forms the western boundary of the site is classified as a Collector Road north of Bealey Avenue and has been formed as a two-lane, two-way road. South of Bealey Avenue, Madras Street forms part of the north-south, one-way pair of roads providing access to the eastern side of the Christchurch Central City.

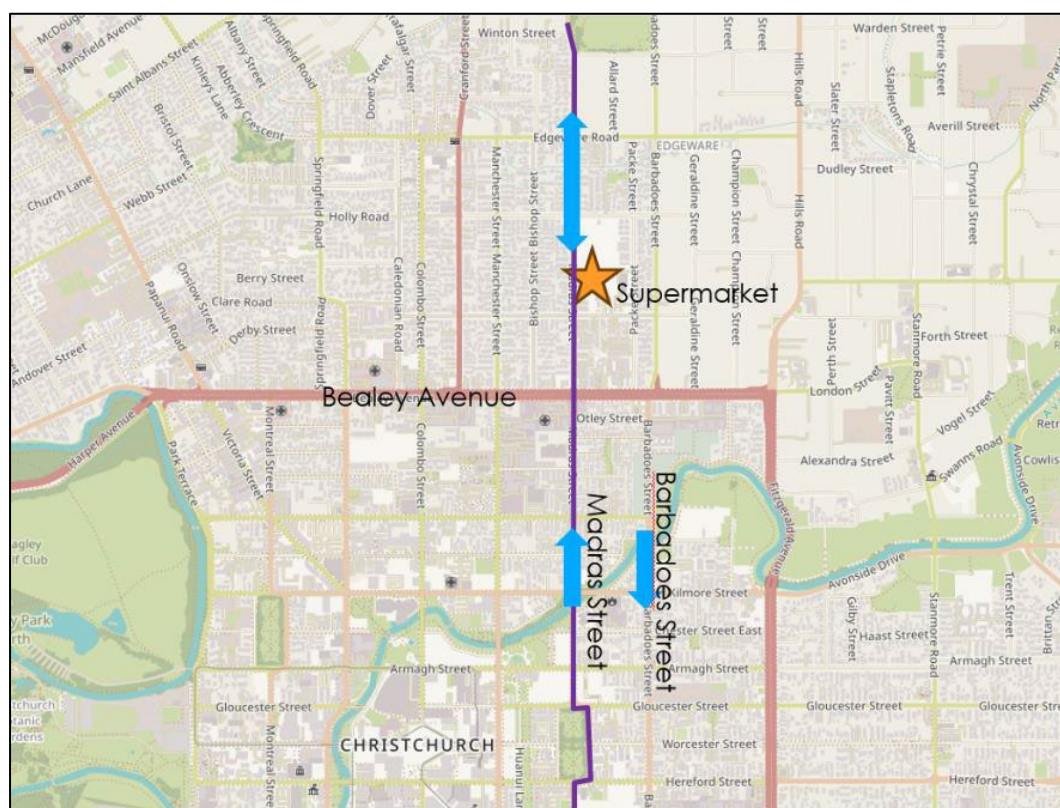


Figure 2-1: Site location – wide area context.

Figure 2-2 shows the local road network surrounding the site. The site is located between Canon Street to the north and Purchas Street to the south, which are both classified as local roads. Packe Street is located to the east which is also a local residential street.

All access to the site will be from Madras Street.



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2 Development Site Context

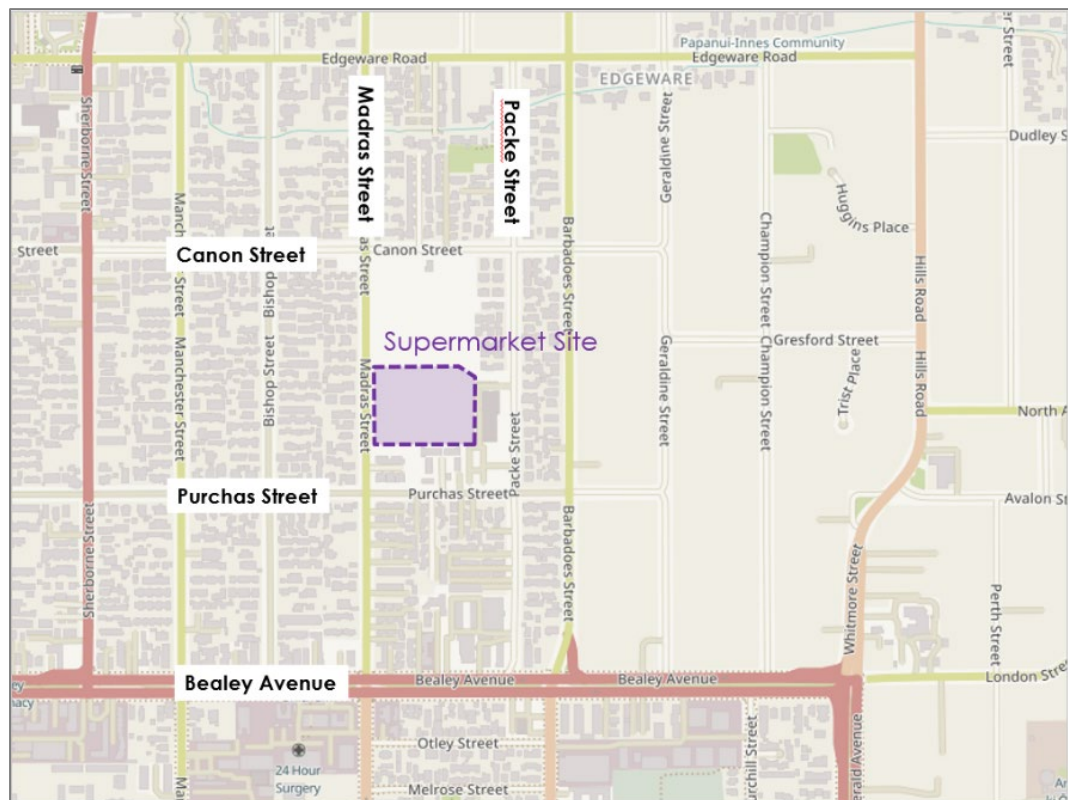


Figure 2-2: Supermarket Site Location

2.2 District Plan Zoning

Figure 2-3 shows that the supermarket site is located on land with a split zoning. The southern portion forms part of the Commercial Local (CL) St Albans zone with the northern part of the site being in the Residential Medium density (RMD) zone. The CL zone is located adjacent to the nominal boundary between the suburbs of St Albans and Edgeware which are separated by Madras Street. St Albans and Edgeware are some of the older residential suburbs in Christchurch with only small areas of undeveloped land remaining. Land to the north of the site is currently being developed with new housing.

The District Plan includes a Development Plan (Figure 2-4) and specific controls for the CL (St Albans) zone. The controls include a maximum Gross Leasable Floor Area (GLFA) of non-residential activity of 3,500 m², a single tenancy with a GLFA of 800 m² and all other tenancies having a maximum GLFA of 450 m² per tenancy. The supermarket development proposal exceeds the total permitted GLFA for the zone and also the GLFA limits for individual tenancies. These rules have a restricted discretionary activity status.

The northern portion of the site and all the surrounding areas are zoned as Residential Medium Density (RMD). Since the RMD zone permitted activity tables (Rule 14.5.1) do not allow for a supermarket or retail of the scale proposed, the development proposal represents a discretionary activity under the Residential Zone rules.



Woolworths Supermarket Madras Street, St Albans

2 Development Site Context

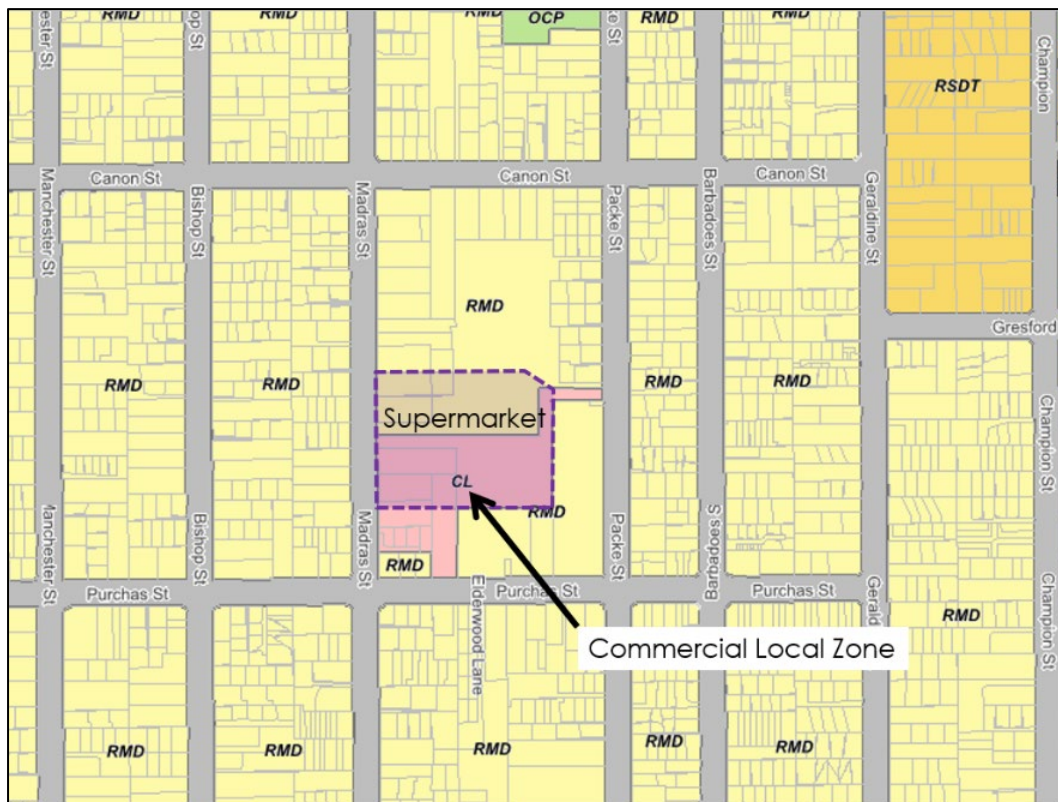


Figure 2-3: Site zoning

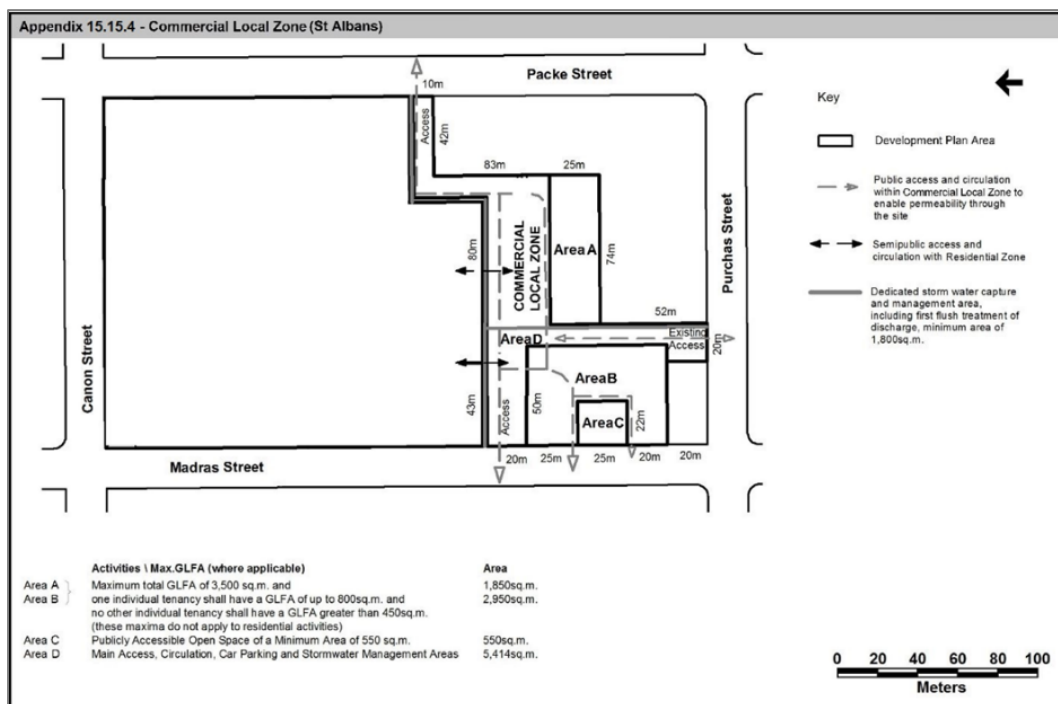


Figure 2-4: Commercial Local Zone (St Albans) Development Plan



3 Existing Transport Networks

3.1 Existing Road Network

The supermarket site only has frontage to Madras Street which has been constructed along the site frontage as a two-lane road with a cycle lane and parking lane on each side of the road. There are footpaths on both sides of the carriageway which are separated from the parking lane by grassed berms. Photograph 3-1 and Photograph 3-2 show the road layout of Madras Street along the site frontage.

Purchas Street and Canon Street are local roads with an east-west alignment and operate within a 40km/h speed limit zone. Both roads meet Madras Street at stop controlled crossroads intersections with Madras Street having priority. The side road approaches have recently been traffic calmed as typically shown in Photograph 3-3.



Photograph 3-1: Madras Street view North

Woolworths Supermarket Madras Street, St Albans
3 Existing Transport Networks



Photograph 3-2: Madras Street view South



Photograph 3-3: Purchas Street east approach to Madras Street

The Bealey Avenue / Madras Street intersection about 300 metres south of the site is signal controlled. Turn movements at the intersection are restricted because Madras Street is configured as



a one-way road south of Bealey Avenue. Only left turn movements are permitted from the Madras Street northern approach.

There are also traffic signals on Madras Street at the Edgware Road intersection about 350 metres to the north. There are no restrictions on turn movements at the intersection.



Photograph 3-4: Madras Street northern approach to Bealey Avenue

3.2 Public Transport Network

Figure 3-1 shows the public transport network in the vicinity of the supermarket site. Although service route 91 between Rangiora and Christchurch City Central travels along Madras Street, this service does not make any stops along Madras Street, as it is an express service. The commuter service between Kaiapoi and Christchurch (Route 92) uses Manchester Street and Sherbourne Street to the west but again there are no bus stops on those roads.

The Route 44 service travels along Barbadoes Street to the east of the site. The nearest bus stops are close to the Barbadoes Street / Purchas Street intersection, about 400m walking distance from the supermarket entrance. There are also bus stops close to the Barbadoes Street / Canon Street intersection that are about 500m walking distance from the supermarket entrance. With a walking time of approximately 5 minutes, the Route 44 service provides an effective connection to the site for public transport users.

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3 Existing Transport Networks

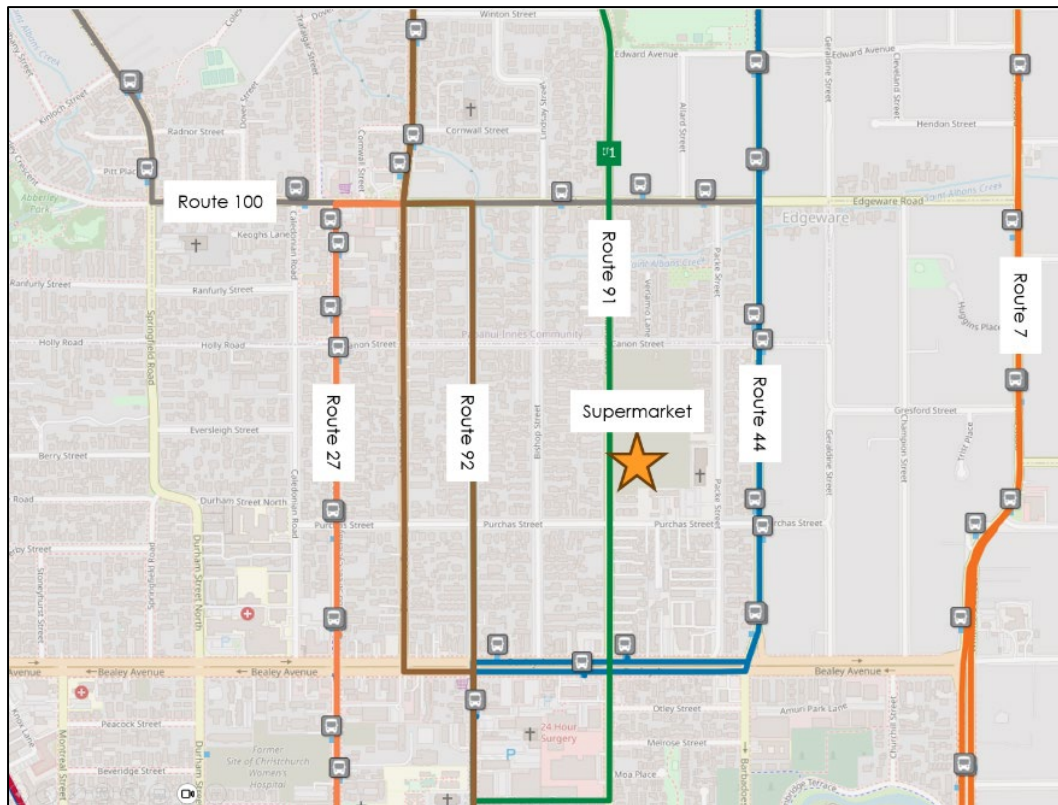


Figure 3-1: Public Transport Network (MetroInfo)

3.3 Active Mode Networks

There are footpaths on both sides of Madras Street and pedestrian refuge islands north of Purchas Street, as shown in Photograph 3-5, and north of Canon Street.

All roads within 10 minutes' walk of the site have footpaths on both sides of the road, ensuring good accessibility for potential supermarket customers. The walkable area within 10 minutes of the site is shown in Figure 3-2, extending across the St Albans suburb.

There is also an extensive cycle network on nearby roads. This comprises of a mixture of on-road cycle lanes and separated cycleways (the Papanui Parallel Major Cycleway on Colombo Street) as shown in Figure 3-3.



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3 Existing Transport Networks



Photograph 3-5: Pedestrian Island on Madras Street at Purchas Street

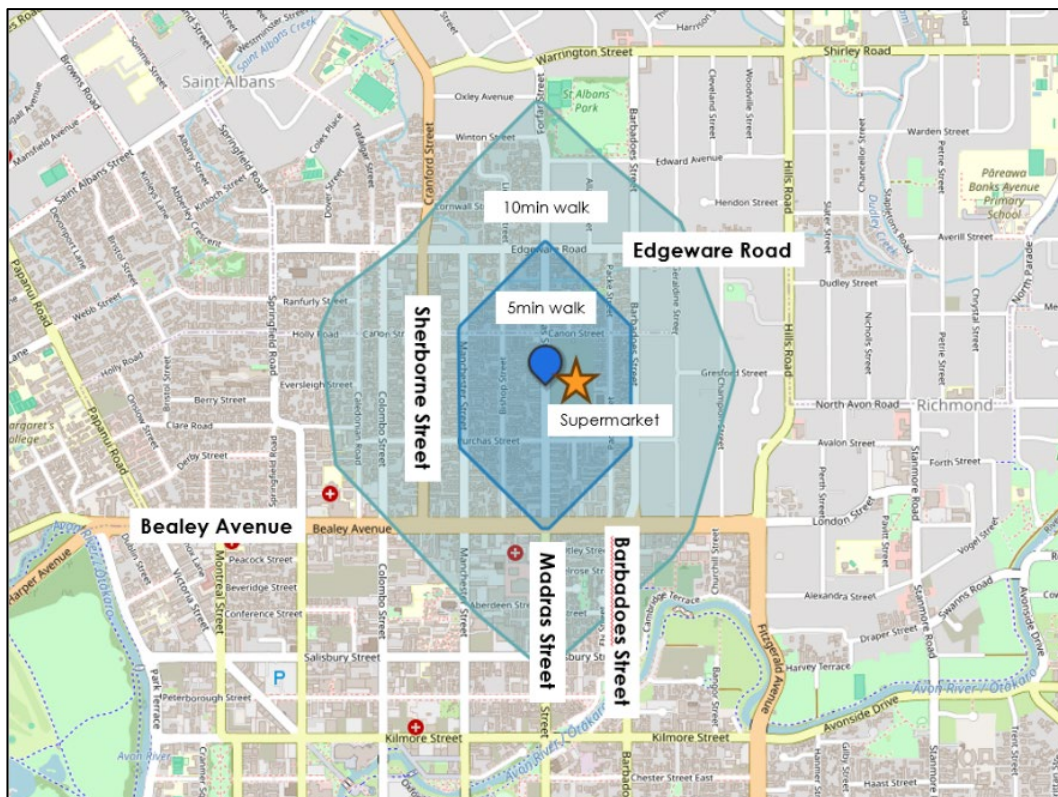


Figure 3-2: Walking accessibility (Source: Open Street Maps)



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3 Existing Transport Networks

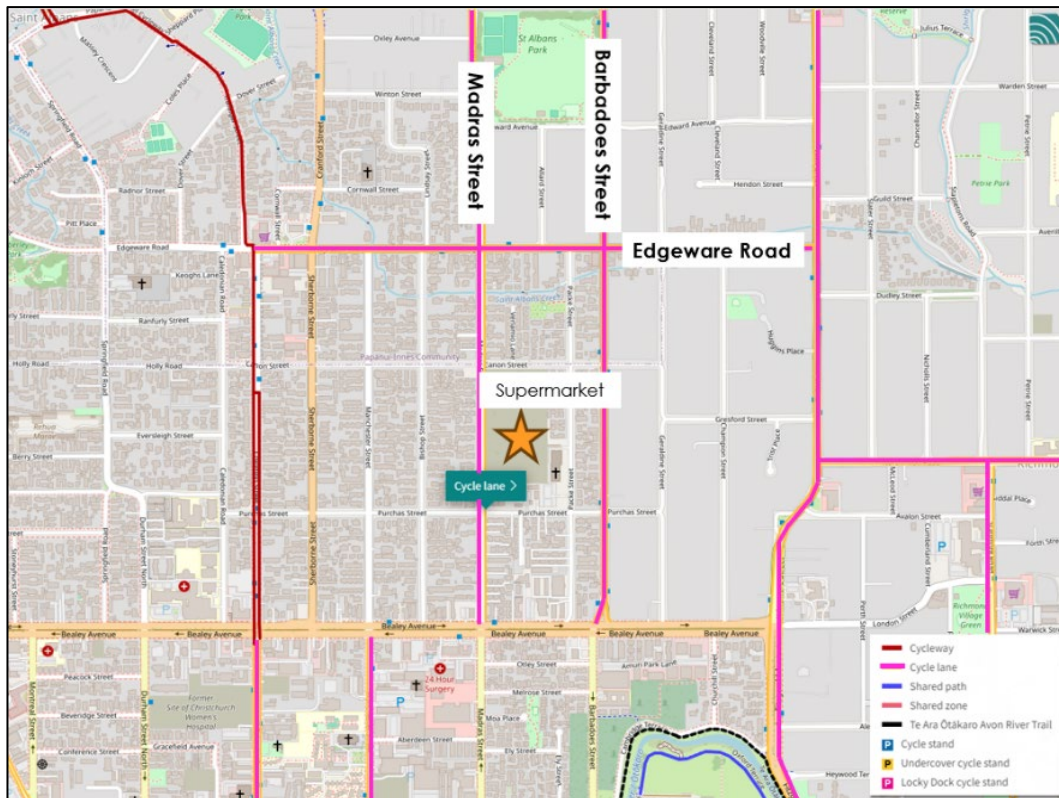


Figure 3-3: Active Mode Network (CCC Maps)



4 Existing Traffic Environment

4.1 Traffic Volumes

Average daily traffic (ADT) on roads close to the supermarket site are summarised in Table 4-1 and have been based on the values reported in the MobileRoad database as this is more comprehensive than the CCC database. Counts within the CCC database are generally aligned with the MobileRoad information. The volumes reflect the function of the roads within the transport network with Bealey Avenue carrying the highest volume. Traffic volumes on Purchas Street and Canon Street are low which reflects their local road function.

Table 4-1: Average Daily Traffic Volumes (Source: MobileRoad)

Road	Classification	AADT
Madras Street south of Edgeware Road	Collector	10,200
Madras Street north of Bealey Avenue	Collector	10,700
Madras Street south of Bealey Avenue	Main Distributor	19,200
Barbadoes Street south of Edgeware Road	Collector	6,500
Barbadoes Street north of Bealey Avenue	Collector	10,000
Barbadoes Street south of Bealey Avenue	Main Distributor	11,400
Bealey Avenue west of Madras Street	Major Arterial	33,300
Bealey Avenue east of Madras Street	Major Arterial	29,600
Edgeware Street west of Madras Street	Collector	4,900
Edgeware Street east of Madras Street	Collector	3,800
Purchas Street west of Madras Street	Local	2,400
Purchas Street east of Madras Street	Local	2,300
Canon Street west of Madras Street	Local	1,500
Canon Street east of Madras Street	Local	700

Figure 4-1 shows the variation in hourly volumes on Madras Street north of Purchas Street based on CCC count data. This shows a small peak in the morning of 400 vehicle movements per hour (vph) and a larger peak of about 900 vph in the afternoon at 5:00pm. The southbound volumes on Madras Street are currently very low, typically less than 100 vph through the day.



Woolworths Supermarket Madras Street, St Albans

4 Existing Traffic Environment

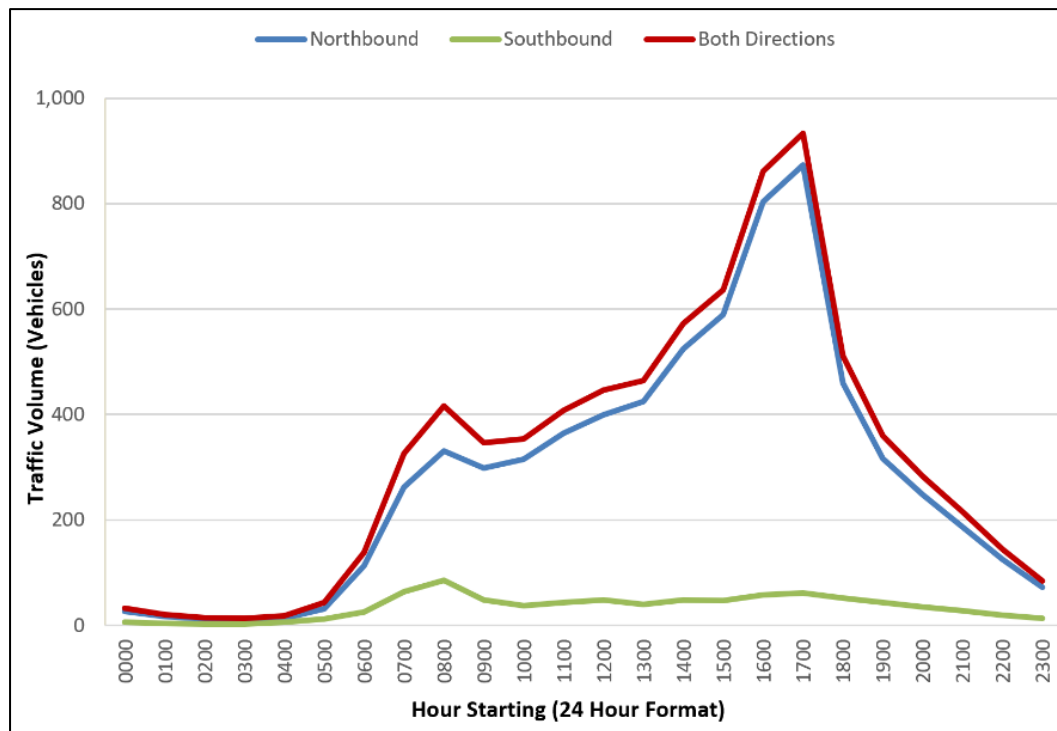


Figure 4-1: Hourly volumes on Madras Street north of Purchas Street

The difference in the northbound and southbound volumes is attributed to the downstream effects of the one-way operation of Madras Street south of Bealey Avenue, and restriction of turning movements from Madras Street north. Figure 4-2 shows the evening peak hour turning movements recorded by CCC at the Bealey Avenue / Madras Street intersection. Bealey Avenue carries about 850 vph westbound and about 1,750 vph eastbound which reflects its function as a Major Arterial Road. Madras Street south of Bealey carries about 1,400 vph during the evening peak. About 755 vph continue north towards the supermarket site. This volume (plus the low volumes of turning movements into Madras Street from Bealey Avenue) is consistent with the link count recorded north of Purchas Street.

Turn count volumes for evening peak hour at the Madras Street / Purchas Street intersection in June 2024 are illustrated in Figure 4-3.



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4 Existing Traffic Environment

Table 4-2: Evening Peak Hour Traffic Volumes (CCC Intersection counts)

Approach	Movement	Vehicles	Cycles
Madras Street North	Left	18	0
	Through	847	4
Bealey Avenue East	Right	29	0
	U-turn	13	0
	Left	328	0
Madras Street South	Through	755	18
	Right	334	4
	U-Turn	1	0
Bealey Avenue West	Left	41	0
	Through	1,747	2

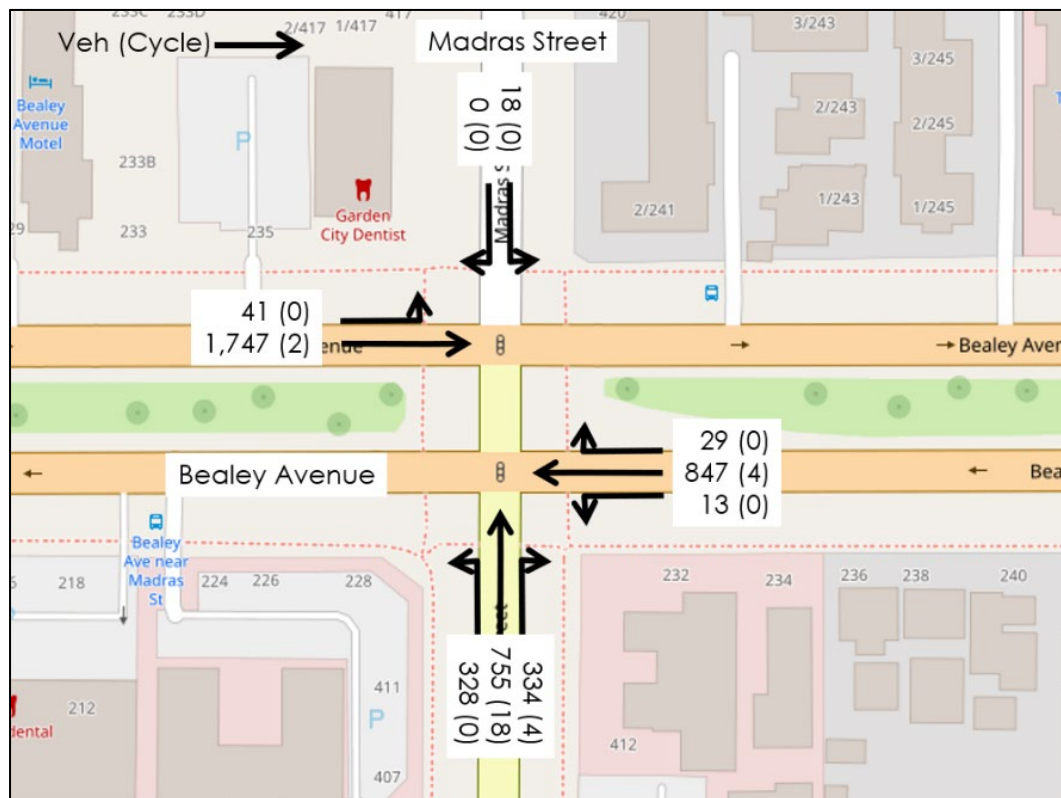


Figure 4-2: Evening Peak Hour Volumes at Bealey Ave/Madras Street (2021)

The northbound movement on Madras Street largely continues past the supermarket site with less than 10% turning at the Purchas Street intersection. There is a low but consistent movement of vehicles on Purchas Street across Madras Street during the evening peak.



Woolworths Supermarket Madras Street, St Albans

4 Existing Traffic Environment

Table 4-3: Evening Peak Traffic Volumes at Madras Street / Purchas Street (19 June 2024)

Approach	Movement	Vehicles
Madras Street North	Left	8
	Through	55
	Right	8
Purchas Street East	Left	4
	Through	13
	Right	3
Madras Street South	Left	45
	Through	828
	Right	28
Purchas Street West	Left	8
	Through	11
	Right	5

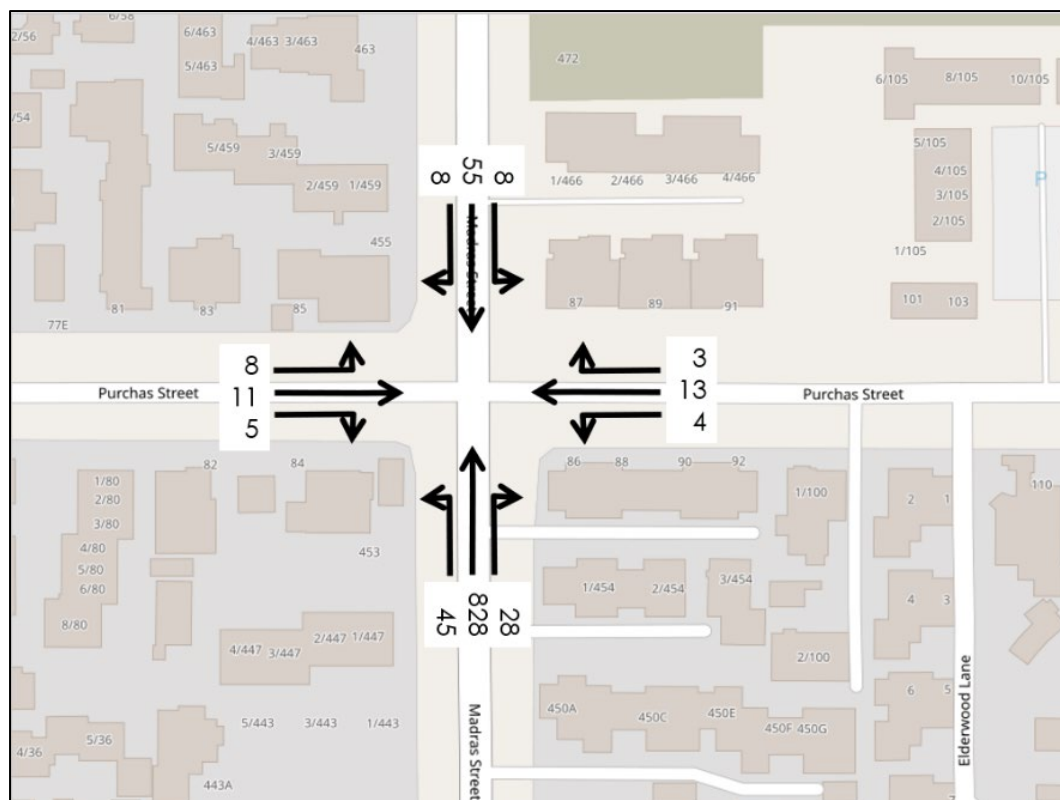


Figure 4-3: Evening Peak Traffic Volumes at Madras Street / Purchas Street (19 June 2024)

The traffic signals at the Bealey Avenue / Madras Street intersection and the two to one lane merge on Madras Street north of Bealey Avenue together create very strong platooning patterns in the northbound flows during the evening peak period. Figure 4-4 shows the lengths of gaps in the two-



way flows (that is periods with no northbound or southbound vehicle movements on Madras Street), that were observed over a 45 minute long period during the evening peak. These ranged in duration from 5 seconds to over one minute with an average of 34 seconds. The average duration of each platoon was 75 seconds. The regularity and length of the gaps provides ample opportunity for turning and cross movements at Purchas Street to occur safely but the waiting time varies widely because it is not possible to turn when a platoon of traffic is present.

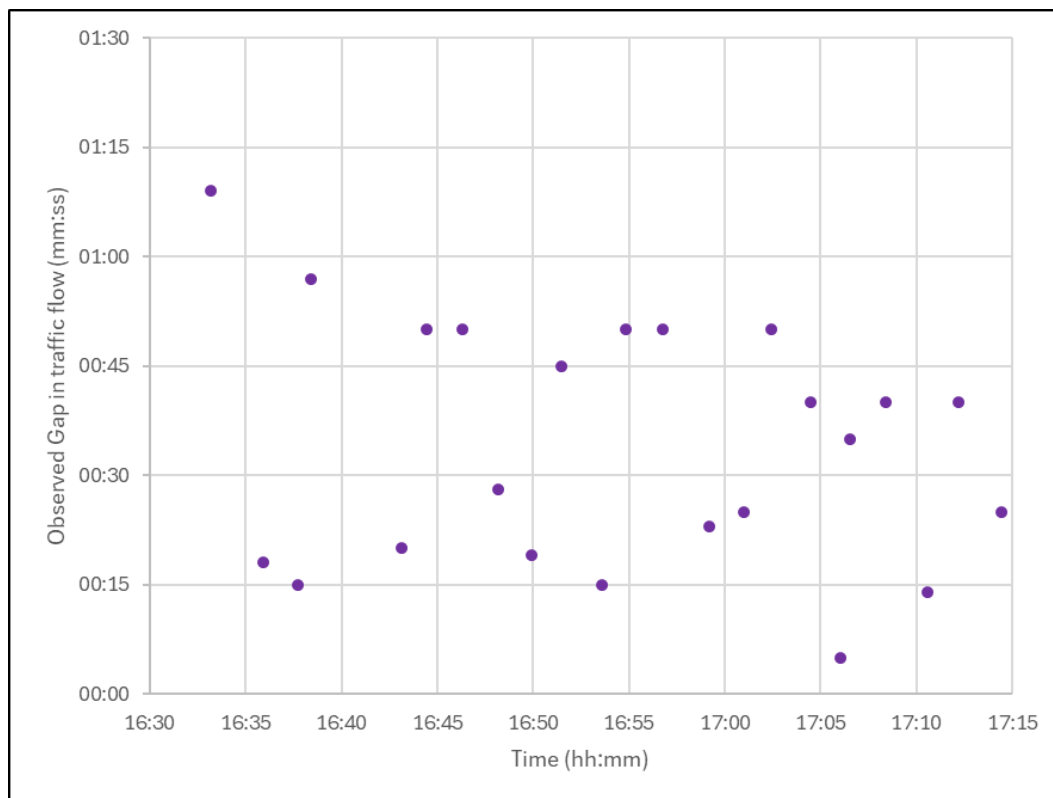


Figure 4-4: Observed gaps in two-way flows

4.2 Road Safety

A search of the NZTA Waka Kotahi 'Crash Analysis System' has been undertaken for the purpose of reviewing the road safety record of the local transport network around the site. The search was conducted for the most recent complete 5-year (2019 to 2023), and covered the area illustrated in Figure 4-4.

Woolworths Supermarket Madras Street, St Albans

4 Existing Traffic Environment

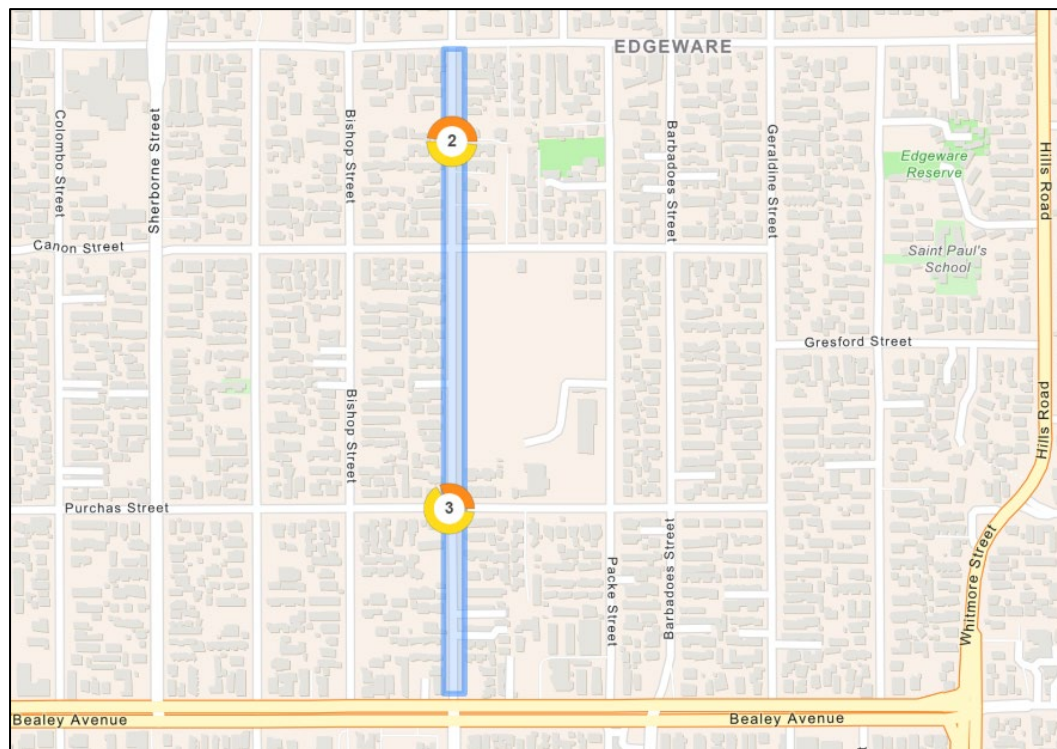


Figure 4-5: Crash Locations and Numbers for Period 2019-2023 (NZTA CAS)

Seven crashes have been reported on Madras Street between Bealey Avenue and St Albans Road with two of these causing serious injuries and three causing minor injuries. No injury crashes have been reported along the site frontage to Madras Street.

Three of the injury crashes occurred at the Madras Street / Purchas Street intersection and involved side road turning movement collisions. One of the serious injury crashes occurred when a driver travelling east on Purchas Street failed to stop at the stop sign and continued through causing a driver travelling northbound and a driver travelling southbound on Madras Street to collide with them almost simultaneously. This crash occurred in 2019 prior to the traffic calming works and road narrowing at the intersection. The works will have reduced the likelihood of this type of crash recurring.

North of Canon Street there have been two crashes involving vehicles hitting parked cars. One of these resulted in serious injury and involved a driver travelling southbound on Madras Street being distracted causing them to drift to the left side of the road and crash into a parked car.

Within the wider area, four crashes have been reported at the Madras Street / Edgeware Road intersection and 17 crashes at the Bealey Avenue signals. There were two injury crashes at the Edgeware Road intersection and seven injury crashes at the Bealey Avenue intersection. The injury crash rate at the Bealey Avenue intersection is consistent with the typical crash rate for a signalised intersection carrying such high traffic volumes while the injury crash rate at the Edgeware Road intersection is below the typical injury crash rate. This does not raise any particular safety concerns with either of the intersections.



Woolworths Supermarket Madras Street, St Albans

4 Existing Traffic Environment

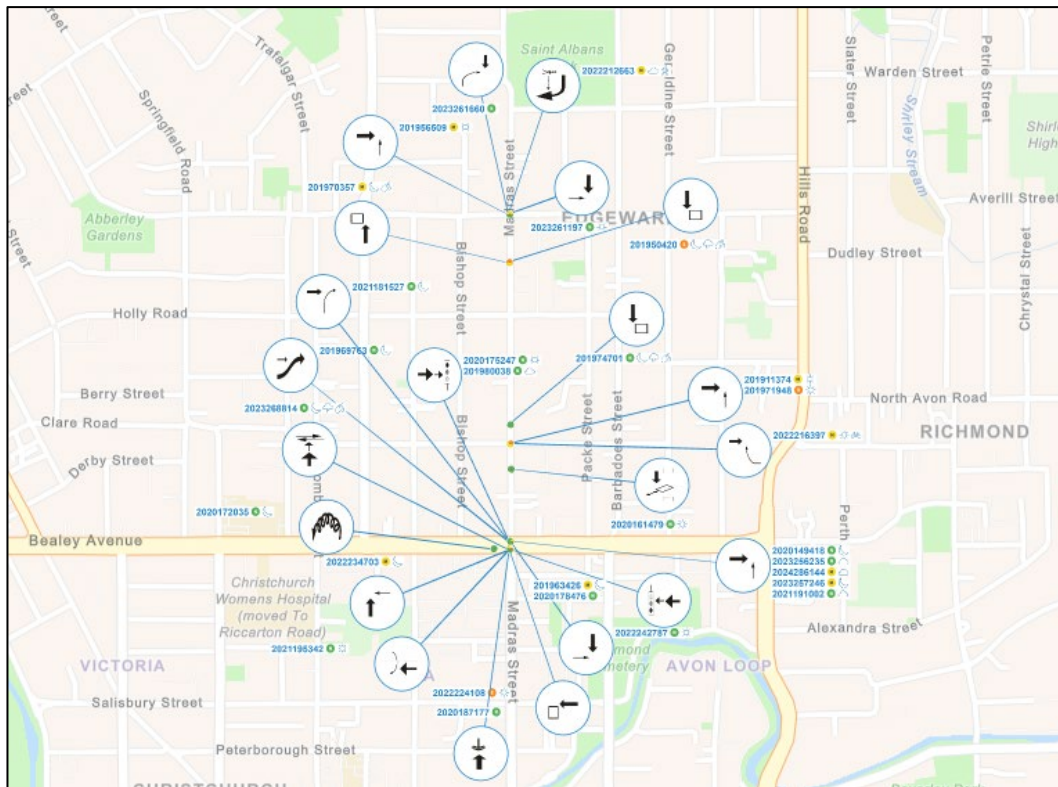


Figure 4-6: Crash Locations 2019-23 (NZTA CAS)

4.3 Potential Changes to Travel Patterns

The Greater Christchurch Spatial Plan sets out a framework for future improvements to the transport networks and identifies core public transport routes and potential new routes. None of the planned changes will alter the existing transport networks around the supermarket site.

The Christchurch Northern Corridor (CNC) opened in December 2020. This includes alterations to Cranford Street south of the CNC to accommodate the additional traffic using the road. Although the new roads have influenced some driver route choices on roads to the north of Warrington Street, there have been no material changes to the traffic volumes using Madras Street attributable to the CNC.

Residential zoned land to the north of the site is currently under development and it is anticipated that the remaining areas of undeveloped land will also be developed for residential use.



5 Proposed Development

5.1 Site Activities and Layout

Figure 5-1 shows the proposed site layout (Appendix A includes a larger scale drawing). The supermarket buildings will be set back from the road frontage with the customer parking between the buildings and Madras Street.

The proposed supermarket will have a GLFA of 3,550 m² with a separate 150 m² space for on-line shopping facilities. The development will also include two retail spaces with a combined floor area of about 710 m², 495 m² GFA of commercial space and a 100 m² café.

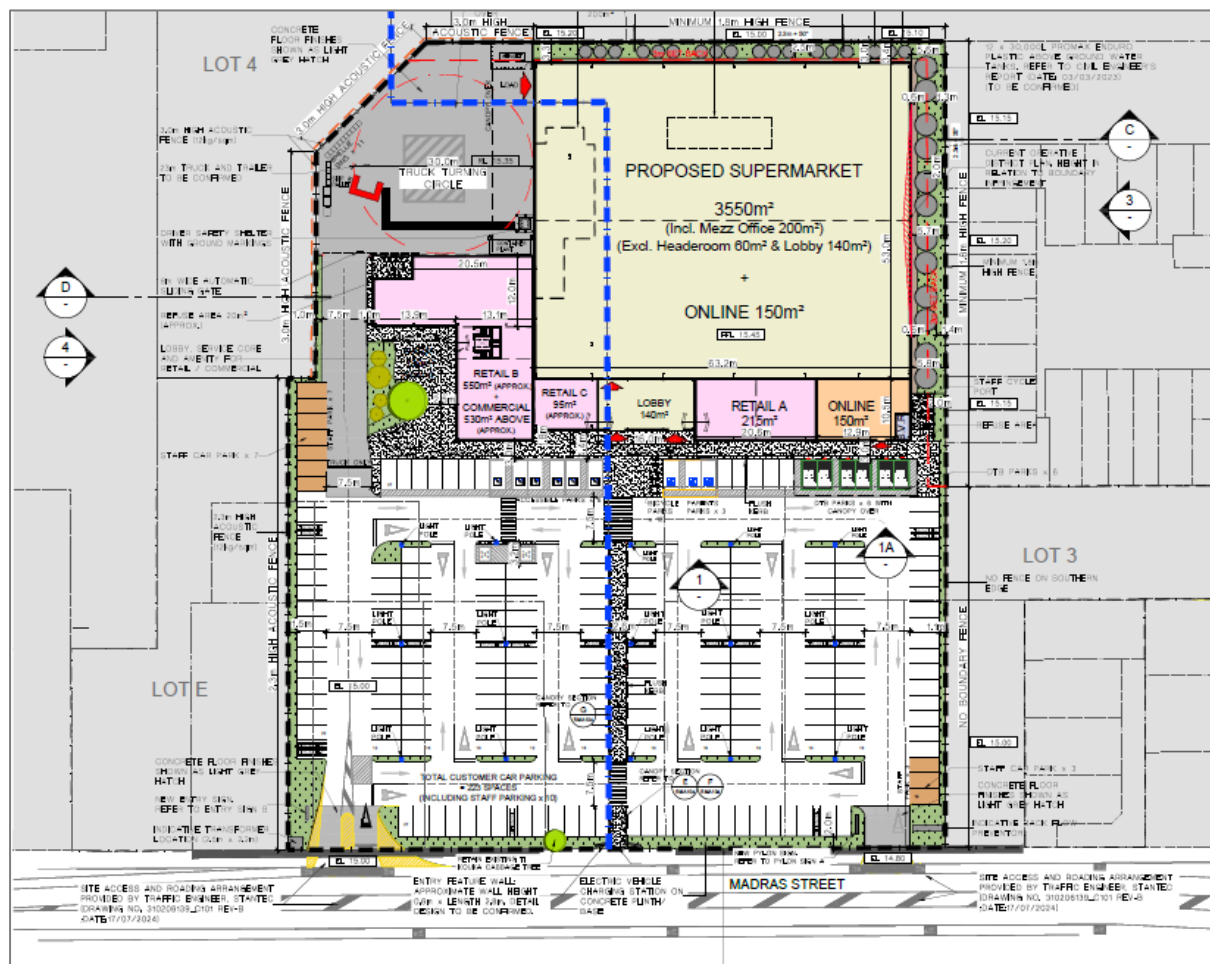


Figure 5-1: Proposed site layout

5.2 Vehicle Access

Two access points are proposed for the site from Madras Street. One access point is located near the south of the site, and one near the north. Both accesses provide direct connection into the adjacent car parking areas. The northern access will also provide access for delivery vehicles.



The southern access will be formed as a standard vehicle crossing with a width of 7.5 metres at the property boundary. The existing footpath along the boundary will be retained with pedestrians having priority.

The northern access has been designed to accommodate the tracking of a 23 metre long, truck and trailer unit. The design incorporates driveway aprons which will be traversable by trucks but intended to provide a narrower crossing for customers. This crossing delineation means that the length of footpath exposed to customer vehicle movements is about 10 metres.

Alterations to the road markings on Madras Street are proposed to allow a painted flush median to be marked. This will require removal of up to 150 metres of on-street parking on the eastern side of the road largely along the site frontage. Concept design plans are included in Appendix B.

5.3 Car Parking

The car park will include 223 parking spaces inclusive of six accessible spaces and six spaces for the on-line shopping pick-up. Car parking spaces will be of a standard configuration for new Woolworths supermarkets that support the movement of people with trolleys and vehicle circulation and efficient manoeuvring. The dimensions proposed are 2.6m wide and 5m long with 7.5m aisle widths.

Although there are no specific minimum parking requirements in the District Plan, the number of parking spaces has been aligned to meet Woolworths design requirements to ensure that it has capacity to meet parking demands on site throughout most of the year, to ensure a good customer experience and minimise potential for off-site effects.

5.4 Active Modes Provision

Customers within the surrounding area will be able to walk to and from the site via the formed road network pedestrian infrastructure (including crossing points at Purchas Street and Canon Street). They can then access the supermarket via a centrally located 2.6 metre wide path leading to the supermarket entrance. This provides a path directly from the Madras Street footpath to the supermarket designed to minimise pedestrian and vehicle interactions. The locations where the path crosses the vehicle circulation aisles within the car park will be marked with painted crossings to indicate pedestrian priority over vehicle movements.

Cycle parking racks with capacity for 12 cycles will be installed close to the main entrance for customers. Additional cycle parking will be installed beside the small park with capacity for 12 cycles. A separate covered and secure staff cycle parking facility with capacity for 10 cycles will be provided. Cycle access is proposed via the street accesses and internal parking aisles.

The pedestrian access routes from Packe Street and Purchas Street anticipated by the District Plan Development Plan are not able to be achieved because the land ownership of the wider block has become fragmented in the years since the Development Plan was prepared. As the linking lots are under the control of other parties, the supermarket site does not extend to either Purchas Street or Packe Street.



5.5 Loading / Servicing

Woolworths have advised that the supermarket operation would typically involve 10-15 truck deliveries per day with three of these being 23 metre long truck and trailer units. The deliveries will occur throughout the day between 7:00am and 4:00pm.

Service vehicles and other trucks are expected to travel to the site along Madras Street from the Bealey Avenue arterial and exit from the site to Madras Street by turning left to travel back to Bealey Avenue.

Appendix B includes vehicle tracking diagrams to illustrate the movement of service vehicles accessing the loading area at the northern end of the building.



6 Traffic Generation

6.1 Supermarket

Figure 6-1 shows the weekday peak hour and weekend peak hour traffic generation rates recorded at Countdown / Woolworths supermarkets since 2008 by Stantec, and also those reported in the New Zealand Trips and Parking Database.

The peak hour traffic generation rates range from 10 vph / 100 m² GFA to 14 vph / 100 m² GFA with an average of 12.1 vph / 100 m² GFA. The surveys suggest that the traffic generation rate of the Woolworths supermarkets is not materially affected by their floor area for supermarket sizes in the range 3,300 m² to 5,400 m².

Since the location of the development is within a predominantly suburban residential area which will increase the potential for more trips to be made by active modes, it is considered appropriate to adopt the average traffic generation rate of 12.1 vph / 100 m² GFA during the weekday evening peak.

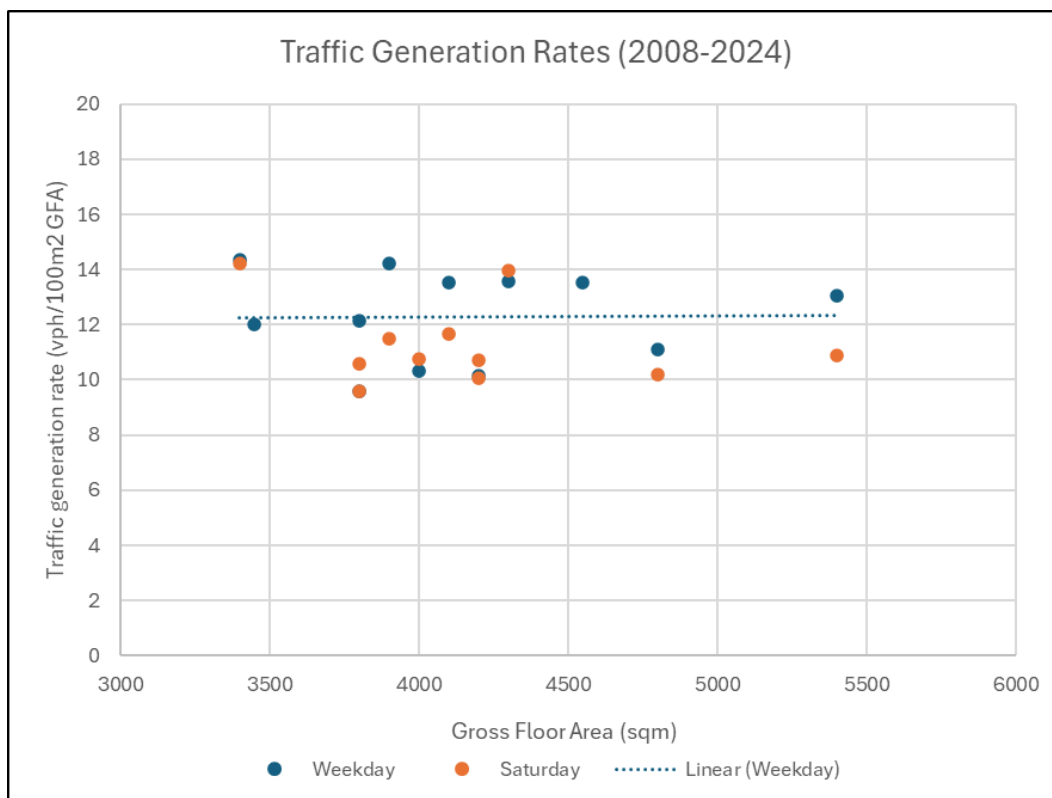


Figure 6-1: Countdown supermarket traffic generation as a function of GFA

6.2 Other Activities

Since the café is ancillary to the main supermarket activity, it is not expected to generate any vehicle movements of significance in its own right during the evening peak period as the demands at the café will be highest from mid-morning to early afternoon.



Although the NZTA Research Report 453 'Trips and parking related to land use' includes traffic generation rates for a small shopping centre, these are based on outdated surveys and are not considered representative of recent changes in shopping activity. For the purposes of this assessment, the traffic generation rate of the supermarket has been adopted for the retail spaces.

Table 6-1 shows the calculation of the potential traffic generation of all activities proposed on site based all trips being independent, that is with no trips involving multiple destinations on the site. The calculation suggests that the combined activities on the site could generate about 550 movements per hour (total in and out) across both driveways. For this assessment, the peak hour traffic generation has been reduced by about 10% to reflect the effects of some trips being to multiple destinations within the development, such that the overall site traffic generation would be about 500 vph during the peak hour.

Table 6-1: Weekday evening peak traffic generation

Activity	Floor Area (m²)	Traffic Generation Rate (vph / 100m² GFA)	Vehicle Movements (vph)
Supermarket (including online)	3,700	12.1	448
Retail A	215	12.1	26
Retail B	495	12.1	60
Commercial	495	2.5	12
Cafe	100	0.0	0
Total	5,115		546

6.3 Trip Types

Trips to local shopping destinations typically comprise three types of travel pattern:

- Primary trips – trips that are new to the road network, with the specific purpose of visiting the site. The distribution of the primary trips has been determined based on the expected core catchment area being Edgware, St Albans and northern parts of the central city area of Christchurch.
- Pass-by trips – trips being made by drivers passing the site on Madras Street, where the driver then chooses to access the site. These add trips to the site access points but result in no changes in traffic volumes on nearby roads or at intersections.
- Diverted trips – trips being made by drivers on roads further from the site, where the driver then diverts to the site. These add trips to the site access points, and potentially nearby roads and intersections, but remove movements elsewhere in the road network. In practice, these trip movement patterns are unlikely to be distinguishable from primary trip movement patterns because the diversions could arise from roads within the wider area. Diverted trips will capture the changes in travel associated with customers choosing to use the new supermarket in preference to an existing but more distant supermarket. The modelling methodology has not specifically allowed for reductions in trips to and from other supermarkets as a result of the retail redistribution effects. It is likely that if that was accounted for, the primary trips would include reductions in movement across the wider road network.



To determine the percentage of trips that could be primary, pass-by and diverted, reference to relevant research has been made. A research report for supermarkets¹ found the following rates could arise for primary, pass-by and diverted trips:

Table 6-2: Trip Types from Harries et al

Period	Primary	Pass-by	Diverted
Thursday PM	35-40%	20-25%	40%
Saturday Middyay	40-50%	10-20%	40%

The ITE trip generation manual also provides information on typical pass-by rates for suburban shopping centres. It reports pass-by rates ranging from 23% to 53% with an average of 40%.

Given the location of the site on a high-volume Collector Road, the proportion of pass-by trips is expected to be closer to the ITE rate than the Harries rate. For the purposes of this assessment, the following distribution of trip types has been adopted for both the supermarket and other retail activities.

- Primary 40% - 200 vph
- Pass-by 30% - 150 vph
- Diverted 30%- 150 vph

The origins for primary trips are expected to be evenly distributed between the north and south. It is expected that drivers would typically use the first driveway that they meet on their approach. Departures from the car park are expected to be evenly distributed between the two driveways because of the generally symmetric layout of the carpark.

The dominant origin for pass-by trips will be from the south due to the one-way north-bound configuration of Madras Street south of Bealey Avenue and it is expected that this would generate a high right turn entry demand at the southern driveway. Since some drivers will choose to use the northern driveway to provide more direct access to the northern commercial and retail outlets, 20% of entry movements have been assigned to the northern driveway. As with primary trips, the departure trips are likely to be evenly distributed between the two driveways as this will be influenced by where drivers are parked.

The proportion of diverted trips from the north and south has been based on traffic volumes on Edgeware Road and Bealey Avenue respectively. Based on these volumes, over 80% of all diverted trips will be from the south. Since there is a wide range of potential diverted trip patterns which can be similar to either primary or pass-by movement patterns, departures have again been distributed evenly by direction at each driveway.

Table 6-3 shows the indicative pattern of driveway movements for the weekday peak period based on the movement patterns outlined above. It shows that the highest volume movement will be the right entry movement at the southern driveway. Both driveways are expected to have similar volumes of

¹ Harries et al: *Trip Generation Characteristics of Large-Format Retail Development Sites in Auckland* (2011)



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6 Traffic Generation

outbound movements with a higher volume of right turns because of the influence of pass-by movements and the dominant northbound flow. Figure 6-2 shows the movement patterns in graphical form.

Table 6-3: Expected driveway movement patterns

Trip Type	North				South				Total
	L-in	R-in	L-Out	R-Out	L-in	R-in	L-Out	R-Out	
Primary	40	10	25	25	10	40	25	25	200
Pass-by		15		38		60		37	150
Diverted from North	10		3	3	3		3	3	25
Diverted from South		13	15	16		50	15	16	125
Total	50	38	43	82	13	150	43	82	500

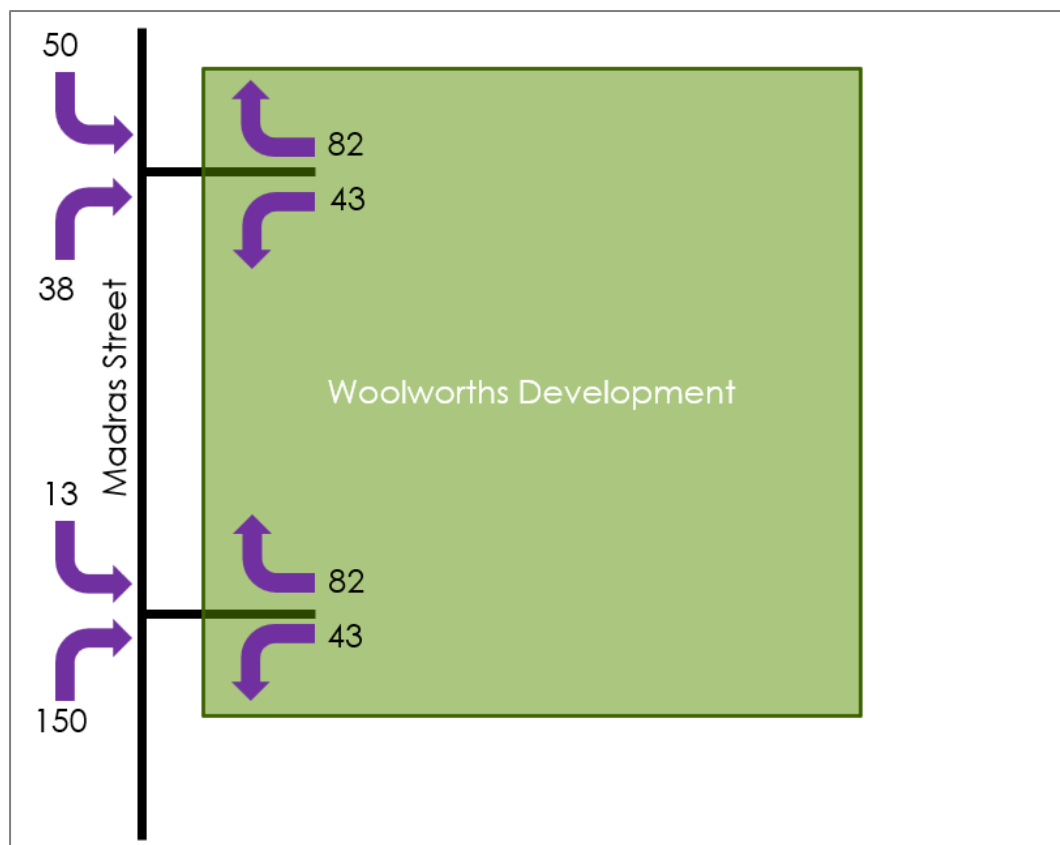


Figure 6-2: Indicative turning movements – weekday evening peak



7 Accessibility by Active Modes

Although the site will be located on a Collector Road, there are no public transport services that stop adjacent to the site. The nearest bus stops to the supermarket site are about 400 metres walking distance away. This typically represents an acceptable walking distance from a bus stop.

Figure 3-2 showed that there are large areas of residential zoned land surrounding the site, much of which includes medium density development. Based on the isochrones included in Figure 3-2 and reference to available population data, it is estimated² that about 6,000 people live less than 10 minutes walking distance from the site which means that walking will be a practical option for many customers. Any walking trips to the supermarket are likely to replace driving trips to existing supermarkets that are further away given a lot of the residential catchment area, particularly south and east of the site, does not have walking access to a supermarket. As there are good pedestrian crossing opportunities on Madras Street in the form of refuge islands close to the site, no additional walking infrastructure beyond the site is considered necessary.

Although there are no major cycle routes directly serving the local community, the Papanui Parallel provides wider area cycle access to the western part of the St Albans suburb. Cycle lanes are marked on the major roads such as Madras Street and Edgeware Road (which connects to the Papanui Parallel). This provides a good network of route options for cyclists to access the supermarket. Figure 7-1 shows cycling isochrones with 5 minute resolution. These indicate that the site lies within 10-15 minutes cycling time of multiple inner suburbs across the northern and eastern parts of central Christchurch which represents a high level of accessibility.

² Open Source Maps



Woolworths Supermarket Madras Street, St Albans

7 Accessibility by Active Modes

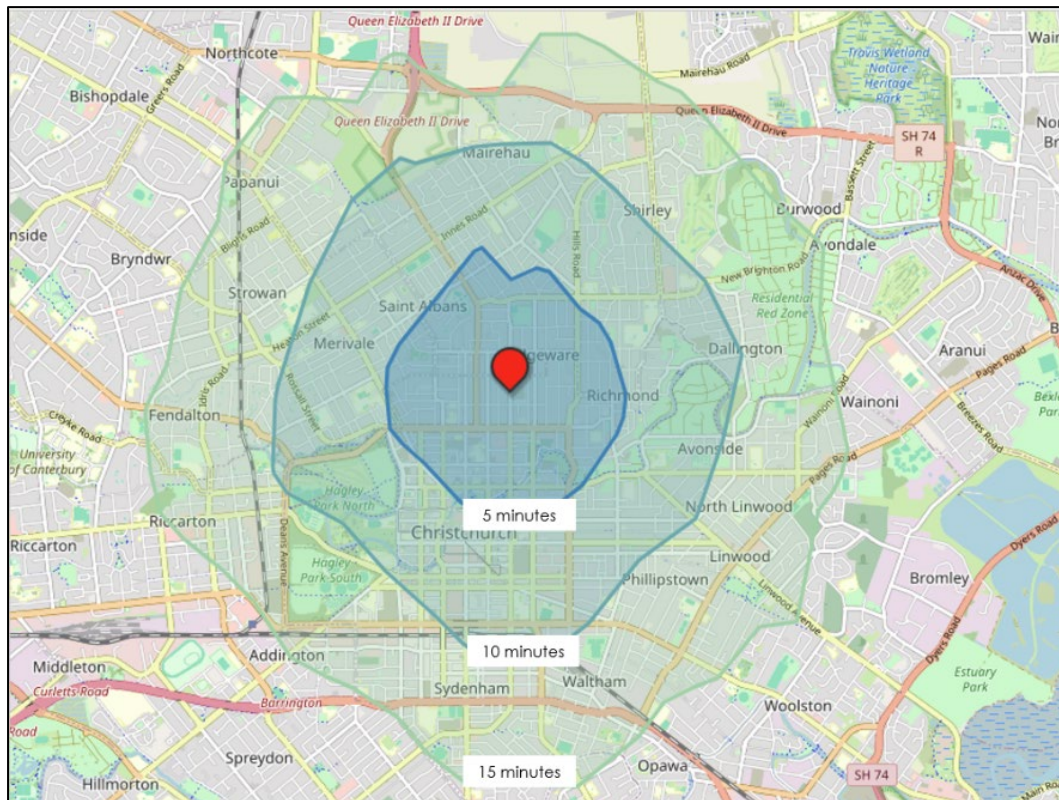


Figure 7-1: Cycling Isochrones



8 Potential Transport Effects

8.1 Changes in Traffic Volumes

The focus of this assessment has been on Madras Street because the establishment of the neighbourhood centre will contribute to changing some of the wide area travel patterns for people wanting to access a supermarket. The primary effect of this will be higher volumes of traffic on Madras Street.

Table 8-1 shows the potential changes in traffic volumes on the local road network based on a traffic generation of 500 vph and 30% pass-by. Since pass-by trips are already on Madras Street, they will not add to the existing volumes. Primary trips and diverted trips will contribute to higher volumes. There will be increased movements on Canon Street and Purchas Street because these provide primary access routes from the surrounding local streets to Madras Street. In practice, the grid based layout of the surrounding road network means that the actual changes on each street will depend to some extent on driver route preferences to approach the site. This means that any changes on local roads beyond the sections of Canon Street and Packe Street connecting directly with Madras Street will be small.

Table 8-1: Forecast changes in weekday evening peak hour traffic volumes

Location	Existing	Development	Combined
Madras Street south of Purchas St	1,060	+160	1,220
Purchas Street east of Madras St	230	+20	250
Purchas Street west of Madras St	240	+20	260
Madras Street north of Canon St	1,020	+120	1,240
Canon Street east of Madras St	70	+10	80
Canon Street west of Madras St	150	+20	170

The forecast changes in traffic volumes on Canon Street and Purchas Street remain well within the capacity of the roads. The main effect of the increased volumes is expected to be an increase in demand for turning movements at the Madras Street / Canon Street and Madras Street / Purchas Street intersections. The delays for turning movements at these intersections are highly variable in the evening peak period due to the strong platooning patterns in the northbound flows on Madras Street. However, there are long periods between the platoons with little to no vehicle movement on Madras Street which allows the turning movements to be made easily and safely, as in the driveways example presented next.

Since the right turn movements will be from the highly platooned northbound flows, it is desirable to separate the turning vehicles from the through traffic. A flush median is proposed to accommodate this. Appendix B includes concept design drawings of the proposed alterations.

Left turn movements will generally be subject to very low opposing flows of less than 100 vph during the peak period and so could be completed with low levels of delay.



Right turn out movements at driveways will be subject to longer delays than left turns due to the northbound platoons of traffic on Madras Street. During the evening peak period, right-turn movements will not be possible when a northbound platoon of traffic is present. These have an average duration of 75 seconds and are typically followed by a long gap of about 35 seconds on average with little or no other traffic present. This pattern of flows means that the driveways will effectively operate in a similar manner to a signal control with a red phase of 75 seconds and green phase of 35 seconds.

Over an hour long period, this pattern of movements would create the equivalent of about 15 minutes of time where exit movements from the driveways can occur largely unopposed. This provides sufficient time for over 200 departure movements at each driveway which far exceeds the forecast departure demands of about 125 vph at each driveway. Therefore, while drivers may experience some delay if they approach the exit when a platoon is present, they will be able to depart once the platoon has cleared.

The primary effect of the platooning on movements at the driveway is that queues will form within the car park when a platoon is present. The SIDRA intersection software has been used to evaluate the likely delays at the driveway. If the driveway is modelled as a priority intersection with strong northbound platoons on Madras Street, the model suggests that the drivers would experience average delays of about 20 seconds with queues of up to two vehicles. If the driveway is modelled as a signal to replicate the effects of platooning, it suggests that average delays would be about 40 seconds and queues of up to six vehicles could form within the car park at each driveway. In practice, the performance of the driveway will be somewhere between these. Even if a queue of six vehicles formed at an exit, the typical length of the gaps in the Madras Street flows of over 30 seconds would be sufficient for all vehicles to depart.

Overall, the level of delay experienced by drivers is considered to be acceptable given the function of Madras Street and its traffic volumes.

8.2 Road Safety

The supermarket is expected to create a right turn entry demand at the southern driveway of about 150 vph during the weekday evening peak hour. Although the opposing southbound flows are very low, any vehicle that stops in the carriageway before turning right will obstruct the movement of northbound vehicles.

It is proposed that space is provided for right turning vehicles to stop within the carriageway clear of the north bound traffic lane. The site plans show this taking the form of a 2.5 metre wide flush median strip, created within the existing carriageway through removal of the parking lane on the eastern side of the road and the widths of the existing traffic lanes, cycle lanes and parking lane each reduced by 100 mm. Although the volume of right turns at the northern driveway will be lower than at the southern driveway, provision of a wide flush median would reduce the potential for conflict with through traffic when service vehicles are approaching the site.

The flush median will remove approximately 140 metres of kerbside parking on the site side of Madras Street, of which 110 metres is along the site frontage. In that respect, approximately five spaces beyond the immediate site frontage would require removal. It is noted that even if the site was developed in accordance with the District Plan Development Plan, a similar design and car parking



outcome is likely. It is important to emphasise that the addition of a flush median can be accommodated within the existing formed road corridor through the removal of on-street parking in front of the site and therefore no changes are needed to the formed kerb edge and no road widening is necessary. The proposed changes will require approval from the CCC to be implemented.

Since cycle lanes have been marked on Madras Street, it is recommended that visibility of the cycle lanes is highlighted at the crossings with additional solid green cycle lane paint marking.

The vehicle crossings have been designed to retain pedestrian priority and to minimise the length of exposure to vehicle movements as far as practical. Since Madras Street is straight and level, and the crossings are well clear of any structures, there are no obstructions to sight lines between pedestrians and drivers.

The width of crossings allows for large heavy vehicle movements to enter the site at the northern crossing without crossing the exit lane which will reduce the potential for conflict. The volume of service vehicle movements is low which represents a low risk of exposure and will not occur during the peak periods on Madras Street.



9 District Plan

9.1 Commercial Zone Standards

The District Plan includes development standards that are specific to the Commercial Local Zone (St Albans).

9.1.1 Access

The District Plan requires that development of the commercial zone provides public access and permeability through the site from Packe Street, Purchas Street and Madras Street plus connections to the adjacent residential zone.

The current development plan area does not have frontage to either Packe Street or Purchas Street, it only has frontage to Madras Street. This means that it is not possible to provide the connections anticipated in the Development Plan. The lack of connections will increase walking distances to the site for residents of Packe Street between Purchas Street and Canon Street but will have little effect on walking distances for the wider area.

The site layout does not preclude semi-public access being formed to the residential zoned land to the north. The need for any access and its configuration would depend upon how the land was developed.

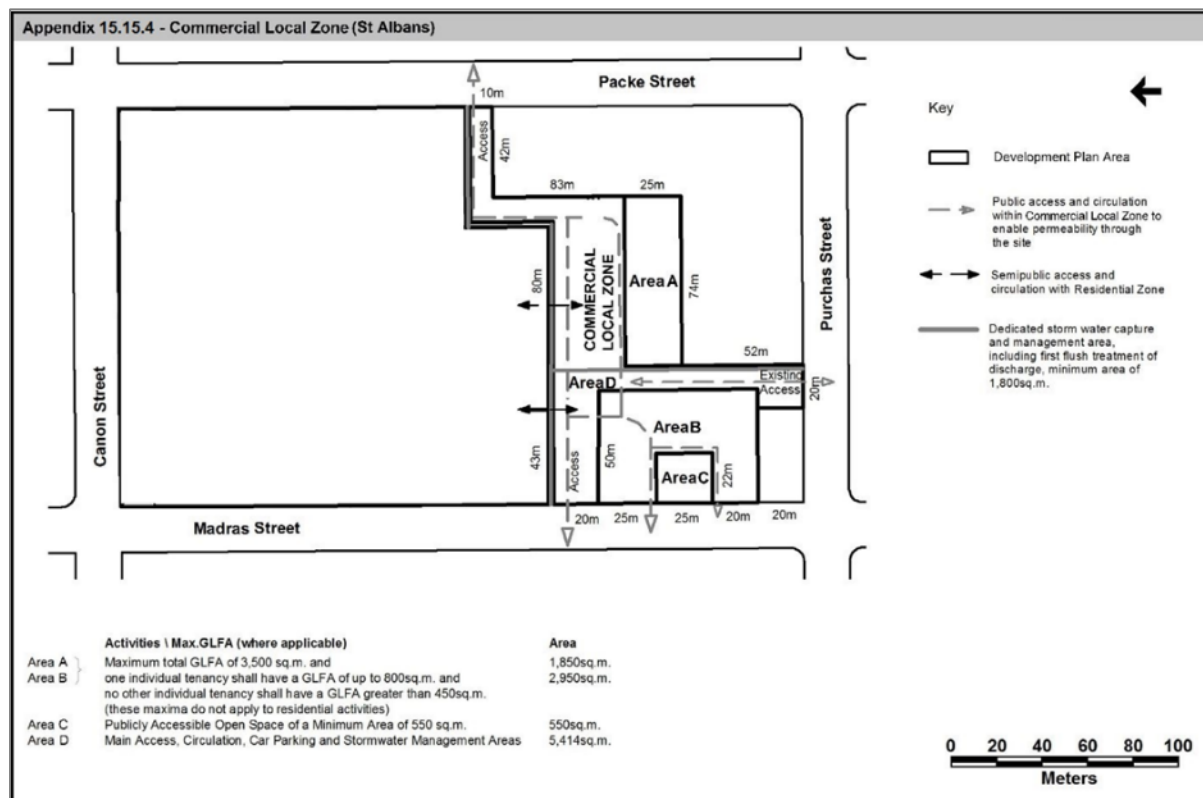


Figure 9-1: Commercial Local Zone (St Albans) Development Plan



9.1.2 Floor Space Limits

Development standard 15.6.3.2.1 sets maximum limits for the total GLFA within the neighbourhood centre and also maximum sizes for individual tenancies. Since the proposed plans include a supermarket with 3,700 m² GLFA (inclusive of the on-line shopping facility), it does not comply with the floor space limits.

The overall effect is that the currently proposed neighbourhood centre will generate a higher level of traffic than was anticipated by the Development Plan. If the commercial zone was developed with 3,500 m² GLFA as anticipated by that Development Plan, it could have generated about 425 vph in the evening peak hour. Based on the analysis of the traffic generation of the proposed development presented at Chapter 6, it would increase the peak hour traffic generation by about 75 vph compared with the anticipated development. The above analysis has found that these additional movements will not have any unacceptable effect on the safety and efficiency of the wider road network.

9.2 Transport Standards

Appendix C includes a summary table with the assessment of compliance against all the transport standards within the CCC District Plan. The site layout has a high level of compliance with the required standards. There are two matters where compliance is not achieved which are discussed below.

9.2.1 Crossing Length

The length of the northern crossing at the boundary will be about 14 metres which will exceed the permitted length of 9 metres so that it can accommodate the tracking of the supermarket service vehicles and provide separation between entering and exiting vehicles. The width for most users will be about 10 metres when the traversable aprons are excluded from the distance calculation, being just 1 metre wider than the standard. The proposed design retains the existing footpath alignment along the site boundary. The crossing design includes a 2 metre wide traversable island between the entry and exit lanes which creates a break in the overall length of the crossing that would provide an opportunity for pedestrians to stop in the middle of the crossing.

9.2.2 Queuing Space

Since the car park provides more than 150 spaces, the District Plan requires a queuing space of 24 metres to be provided. The District Plan allows this to be distributed across the two driveways.

The proposed site layout will provide about 7 metres of queuing space at the southern driveway and 10 metres of queuing space at the northern driveway. This represents a shortfall against the District Plan requirement at each driveway.

Since the parking spaces creating the conflict at the southern driveway are the most distant from the supermarket, these will have low utilisation in general and the potential for conflict will be low. It is proposed that staff are encouraged to use these spaces to reduce the turnover at the spaces and potential for conflict. The management of these spaces would increase the practical queuing space to over 14 metres.



At the northern driveway, the initial conflict point is the right turn into the western parking aisle. It is recommended that 'keep clear' signage and marking are installed to discourage drivers from queuing across the parking aisle so that vehicles can enter the western aisle.

Although there is a shortfall against the District Plan queuing space requirement, it is considered that this can be managed by encouraging staff to utilise spaces close to the southern driveway and with 'keep clear' marking at the northern driveway.

9.3 High Trip Generating Activity

The supermarket development will be constructed on a brownfield site with a split zoning. The northern portion of the site is zoned as Residential Medium Density and the southern part of the site is zoned as Commercial Local. Since the new building will have a gross floor area that exceeds 500 m², the supermarket development represents a HTGA and is a Restricted Discretionary Activity under the CCC District Plan transport rules. In addition, the retail activity is not a permitted activity in either the LC or RMD zones which influences Council's matters of discretion. A "full" ITA is a requirement of this rule.

Council discretion on this matter is restricted to effects on the transport network in relation to:

- a. Access and manoeuvring;
- b. Design and layout;
- c. Heavy vehicles;
- d. Accessibility of the location;
- e. Network effects; and
- f. Strategic framework.

9.3.1 Access and Manoeuvring

The proposed car park layout provides parking bays that meet the District Plan standards and has 7.5 metre wide parking aisles which provides a generous space for customer vehicle manoeuvres.

Direct pedestrian access is proposed via a footpath through the car park that is largely protected from vehicle movement. Where the path crosses parking aisles, painted crossings are proposed to signal pedestrian priority to drivers.

Pedestrians will retain priority over vehicles at the site vehicle crossings, with a standard commercial vehicle crossing treatment and internal vehicle limit lines proposed.

There are cycle lanes marked on Madras Street which will enable customers travelling by cycle to travel clear of motor vehicles. The vehicle crossing will include additional painted treatment to further highlight the point where cyclists are passing the driveways. Within the site itself, cyclists will be able to share the parking aisles with motor vehicles because of the low vehicle speeds in the car park.



The service deliveries have a direct and straight route along the northern edge of the car park to a separated service area where heavy vehicles will manoeuvre and turn around clear of other site users.

9.3.2 Design and Layout

There are footpaths on both sides of all roads surrounding the site and a footpath is proposed through the car park that safely connects Madras Street to the supermarket entrance. This will ensure that travelling to the supermarket as a pedestrian is a viable travel mode.

The site is located in an area that is generally well connected with the wider area cycling network, with cycle lanes along the site frontage, and connections along Edgware Road to the Major Cycleway network (the Papanui Parallel). This makes travel to the supermarket by cycle a practical option.

The site is surrounded by well-established residential suburban areas and there is an estimated population of over 6,000 people within easy walking distance of the site and more than 25,000 people living within 2 km of the site which represents an easy cycling distance. This means that travel by active modes is a practical option.

9.3.3 Heavy Vehicles

Based on the information provided by Woolworths, the site will require up to 15 deliveries by heavy vehicles per day with three of these being large articulated trucks. All service vehicles will only use the collector / arterial road network e.g. Madras Street and Bealey Avenue. The supermarket will not generate any demand heavy vehicle movements on the residential local road network.

The northern parking aisle and vehicle crossing have been designed to accommodate the movement of the large trucks. The low frequency of heavy vehicle movements during the day is not expected to contribute to any noticeable effects on the road network.

9.3.4 Accessibility of the location

The proposed development is located in a large residential catchment area not well serviced by existing supermarkets of this scale. This will support an increase in travel choice for local residents to walk to a supermarket, or alternatively take a shortened cycling trip. Should nearby residents choose to take a car (due to a large grocery shop), then the distance travelled will be reduced relative to that necessary to access other supermarkets further afield. This will likely contribute to an opportunity for reduced travel by private vehicle usage for the local community.

There are footpaths on both sides of all roads surrounding the site and a footpath is proposed through the car park that safely connects Madras Street to the supermarket entrance. Since the site is level, there will be no obstructions to the movement of physically impaired pedestrians across the site.

The site is located in an area that is generally well connected with the wider area cycling network, with cycle lanes along the site frontage, and connections along Edgware Road to the Major Cycleway network (the Papanui Parallel).



Madras Street along the site frontage currently does not form part of any of the local public transport services. The nearest bus stops are on Barbadoes Street and involve about 400 metres walking distance from the supermarket entrance. It is noted that Madras Street would be a possible alternative north-south route if additional bus services were provided in the area given its wider connectivity to the central city one-way system. The proposal does not preclude such future changes.

Since the site is located on Madras Street, which is classified as a collector road, it also provides good accessibility for customers travelling by private vehicles, particularly those already passing by the area. This will assist with efficiency of movement for accessing a supermarket.

9.3.5 Network Effects

9.3.5.1 Traffic Effects

The supermarket site is partially located within a previously undeveloped Commercial Local zone. Supermarket activity is therefore anticipated in this zone albeit at a smaller scale than currently proposed. The investigation of traffic effects indicates that the supermarket proposal could generate about 500 vph during the evening peak period of which about 350 vph could be new to this part of the transport network either as a primary trip or a diverted trip. In practice, it is likely that any diverted trips will be supermarket trips and will be associated with a redistribution from other existing supermarkets.

The analysis of expected customer movement patterns suggests that the two driveways will operate with similar volumes but with the northern driveway dominated by left-in / right-out movement and the southern driveway dominated by right-in/left-out movement. The strong platooning in the northbound traffic flows during the evening peak means that drivers turning right from the driveways could experience average delays of about 40 seconds but will then be able to turn almost unopposed, as described more fully at Section 9.1. This is similar to the existing delays at the Purchas Street and Canon Street intersections. The primary effect will be queuing within the car park rather than external to the site.

The supermarket will generate some local access movements on Purchas Street and Canon Street. These streets are already traffic calmed with a slow speed environment, and customers will be able to make left and right turns onto Madras Street given the grid layout. As such, it is considered there will be negligible effect of any change in movement on local access streets.

9.3.5.2 Construction Traffic Management

Construction of the site will generally be contained on-site, with the building well set back from Madras Street. Car parking is expected to be achievable on-site during construction. Use of temporary vehicle crossings for construction access will be a temporary traffic management consideration as a standard process separate to the resource consent process. The construction of vehicle crossings in their final form and reconfiguration of the frontage road markings will be short duration activities, which again involve standard temporary traffic management procedures.

As the site is located on Madras Street, a busy collector road, it is not considered necessary to restrict construction traffic routes through the consent process. Any time of day considerations will again be a matter for consideration during construction temporary traffic management which will be focused on access safety.



9.3.5.3 Cumulative Effects

There are no known changes in activities or proposed infrastructure that will materially generate a cumulative effect requiring assessment.

9.3.6 Strategic Framework

The District Plan Transport objectives provide an overarching consideration of integrating the site with the adjacent area and transport network, whilst managing adverse effects as follows:

7.2.1 Objective - An integrated transport system for Christchurch District

- i. that is safe and efficient for all transport modes;*
- ii. that is responsive to the current recovery needs, future needs, and enables economic development, in particular an accessible Central City able to accommodate projected population growth;*
- iii. that supports safe, healthy and liveable communities by maximising integration with land use;*
- iv. that reduces dependency on private motor vehicles and promotes the use of public and active transport;*
- v. that is managed using the one network approach.*

7.2.2 Objective - Adverse effects from the transport system

- i. Enable Christchurch District's transport system to provide for the transportation needs of people and freight whilst managing adverse effects from the transport system.*

This ITA has considered the accessibility, safety, and efficiency of the site for active modes, public transport and private vehicle, as well as for service vehicles.

Madras Street and connecting streets are able to accommodate the expected levels of traffic generated, and the collector road function is consistent with providing direct access to the proposed activity.

It is considered that the characteristics of platooned traffic flow on Madras Street supports efficient vehicle access and safety is proposed to be enhanced with a flush median treatment along the frontage, addressing the possible adverse effects of the high trip generating access.

Vehicle crossings are designed to support the efficient and safe use by the majority of users, whilst an additional traversable surface is proposed for the occasional use by larger heavy vehicles. Priority on the footpath and cycle lanes at the vehicle crossing is retained for active mode users.

The proposed larger scale supermarket development in this centre will support reduced dependency on private vehicles for the large number of residents within the walking and cycling catchments. Good connections are available for pedestrians and cyclists.



Woolworths Supermarket Madras Street, St Albans
9 District Plan

Public transport is approximately a 400m walk away on Barbadoes Street. This is within an accessible distance, supporting access to the site from further afield via public transport.

It is considered that the site provides a high level of consistency with the overarching transport objective.



10 Conclusions

The internal layout of the proposed supermarket provides a high level of compliance with the CCC District Plan transport rules. The two matters of non-compliance relate to vehicle crossing design and queuing space. The vehicle crossings have been designed to support the volume of movements expected, whilst maintaining pedestrian priority and ability for service vehicles to access the site. It is proposed that the parking spaces beside the driveways are used by staff to minimise the potential for conflicts close to the driveways. At the northern driveway, it is recommended that a 'keep clear' zone is marked across the northern end of the western parking aisle.

The supermarket represents a high trip generating activity and represents a restricted discretionary activity under the District Plan transport rules. The investigation of traffic effects indicates that the customer vehicle movements can be accommodated on the road network. It is recommended that Madras Street along the site frontage is reconfigured to include a flush median along the site frontage so that right turning vehicles can stop clear of through traffic. The site is well located in the active travel network to support walking and cycling, including from the surrounding residential catchment where vehicle trips are likely required to a comparable sized existing supermarket. Public transport routes are available within a 5-minute walk from the site.

Overall, it is concluded that the supermarket proposal can be supported from a transport perspective subject to alterations to Madras Street to creating a flush median along the site frontage.

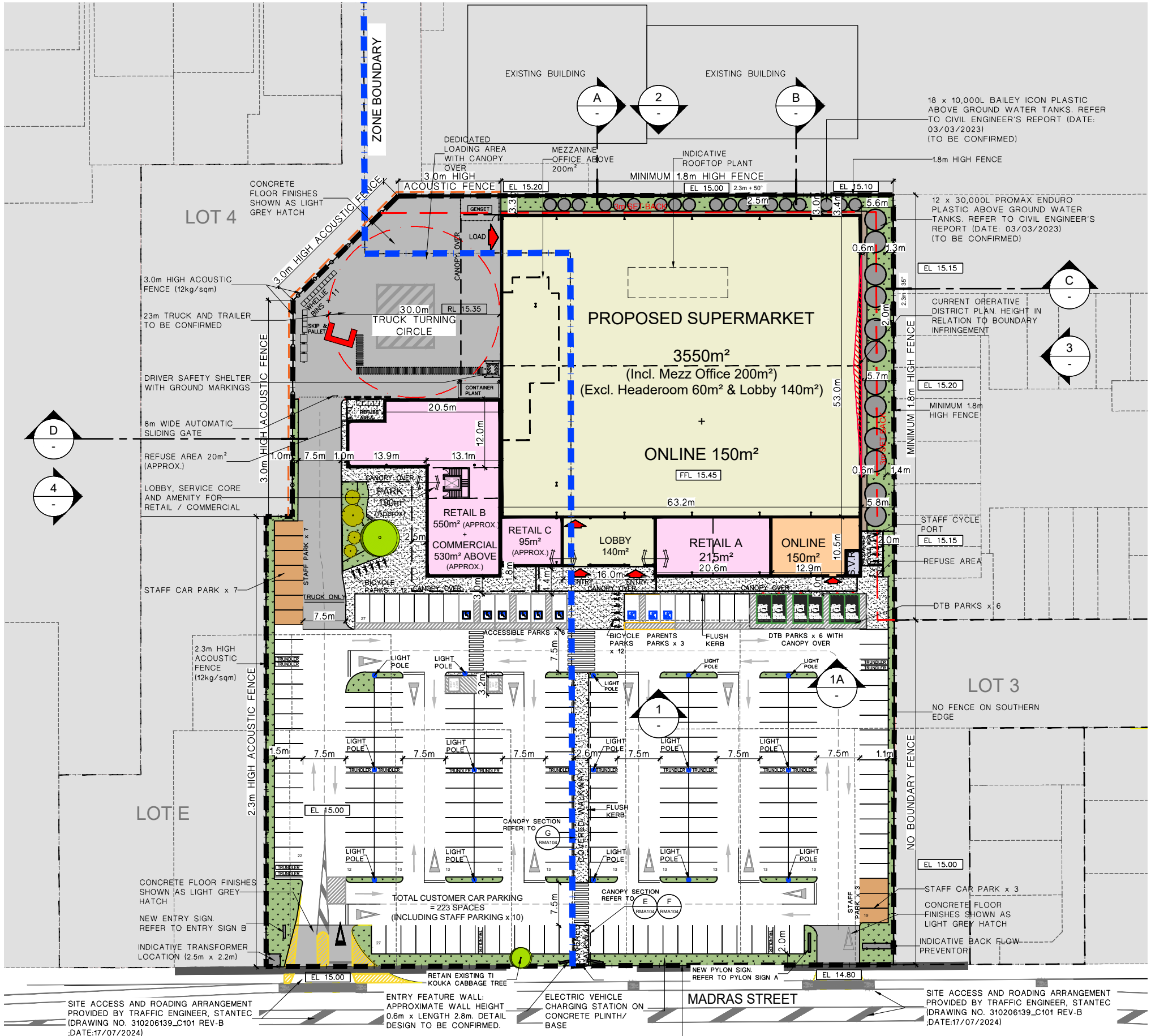


Appendices



Appendix A Site Plans





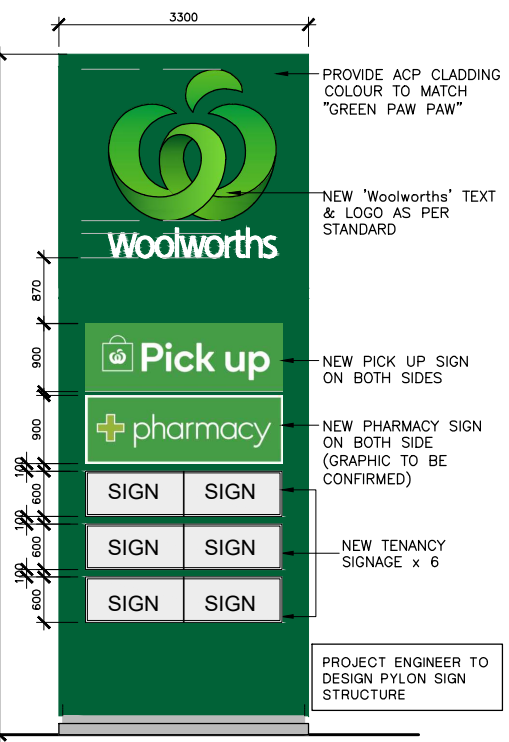
PROPOSED SITE PLAN
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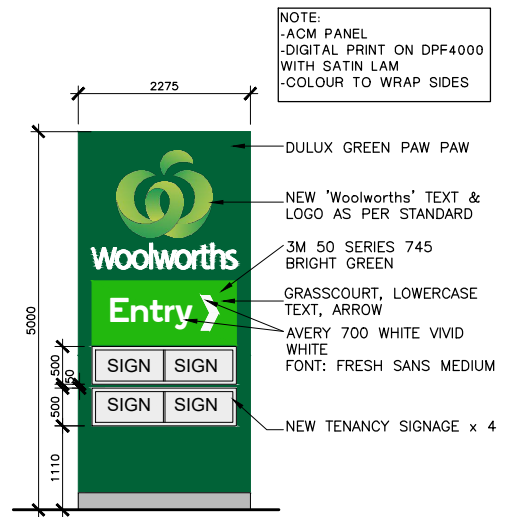
①	SUPERMARKET DEVELOPMENT SITE AREA = 14430m² (APPROX.)
②	SUPERMARKET AREA = 3550m² (1:20) (Incl. Mezz Office 200m²)
③	LOBBY = 140m² (APPROX.)
④	HEADER ROOM = 60m² (APPROX.)
⑤	ONLINE = 150m² (1:50)
⑥	RETAIL A + B + C = 860m² (1:30) (INCL. CORE + AMENITY = 70m²)
⑦	COMMERCIAL (ABOVE RETAIL B) = 530m² (1:30)
⑧	S.V.R. = 13m² (APPROX.)
⑨	TOTAL BUILD GFA = 5303m² (APPROX.)

PARKING SUMMARY:

①	TOTAL CAR PARKING = 223 SPACES CONSISTS OF:
	STANDARD PARK = 197 SPACES
	ACCESSIBLE PARK = 6 SPACES
	PARENTS PARK = 3 SPACES
	STAFF PARK = 10 SPACES
	DTB PARK = 6 SPACES
	DROP OFF PARK = 1 SPACE
②	TOTAL CYCLE PARK = 34 SPACES CONSISTS OF:
	SUPERMARKET VISITOR CYCLE = 12 SPACES (SUPERMARKET FRONT ENTRANCE)
	RETAIL VISITOR CYCLE = 12 SPACES (NEXT TO THE PARK)
	SUPERMARKET STAFF CYCLE = 10 SPACES (NEXT TO S.V.R.)



PROPOSED PYLON SIGN A
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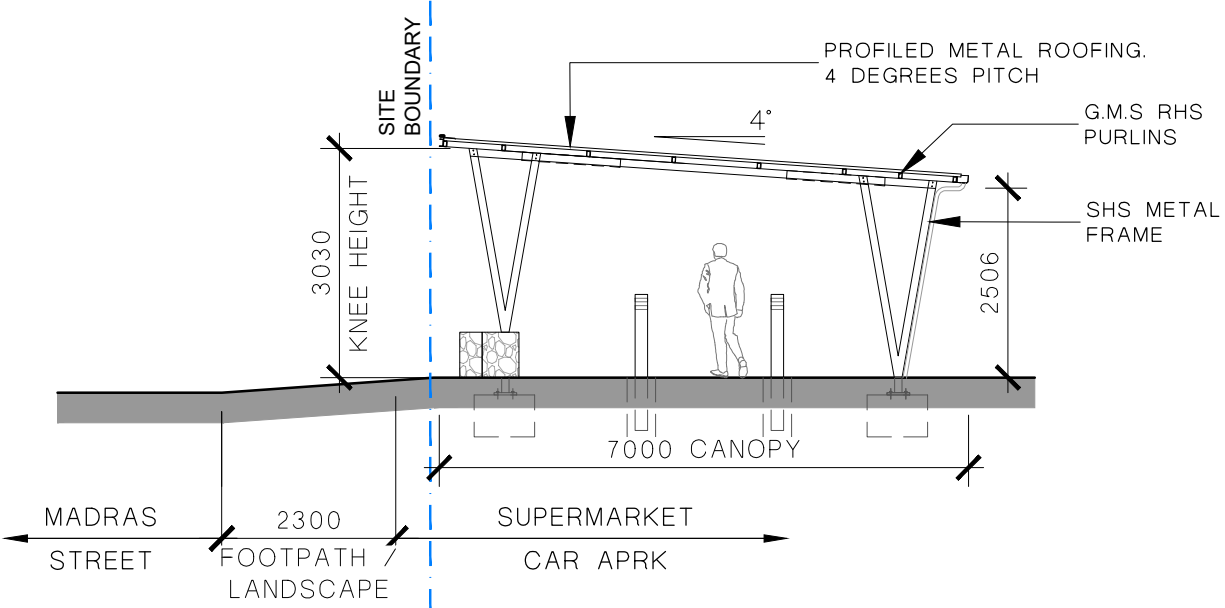
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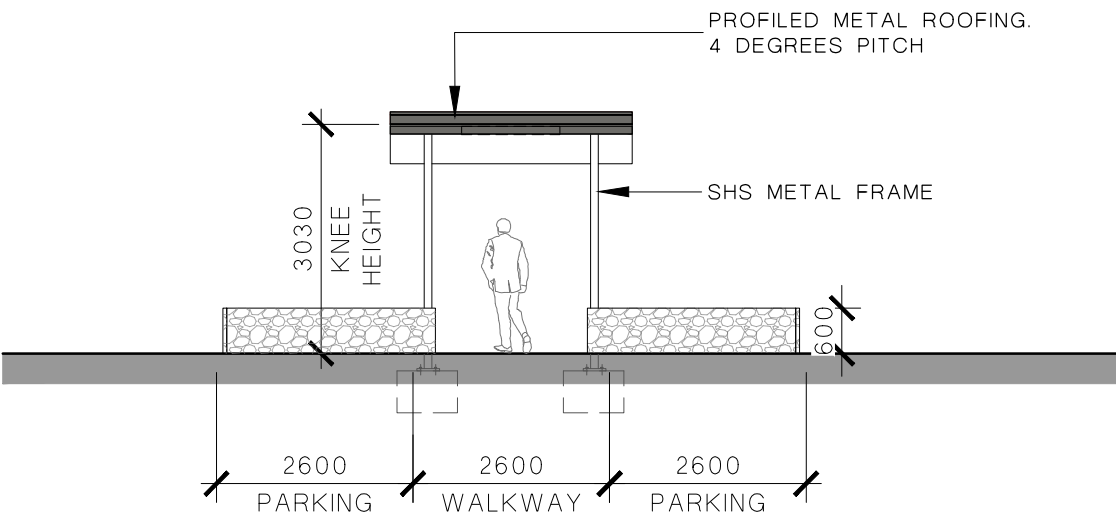
ARTIST IMPRESSION- ENTRY WALKWAY CANOPY
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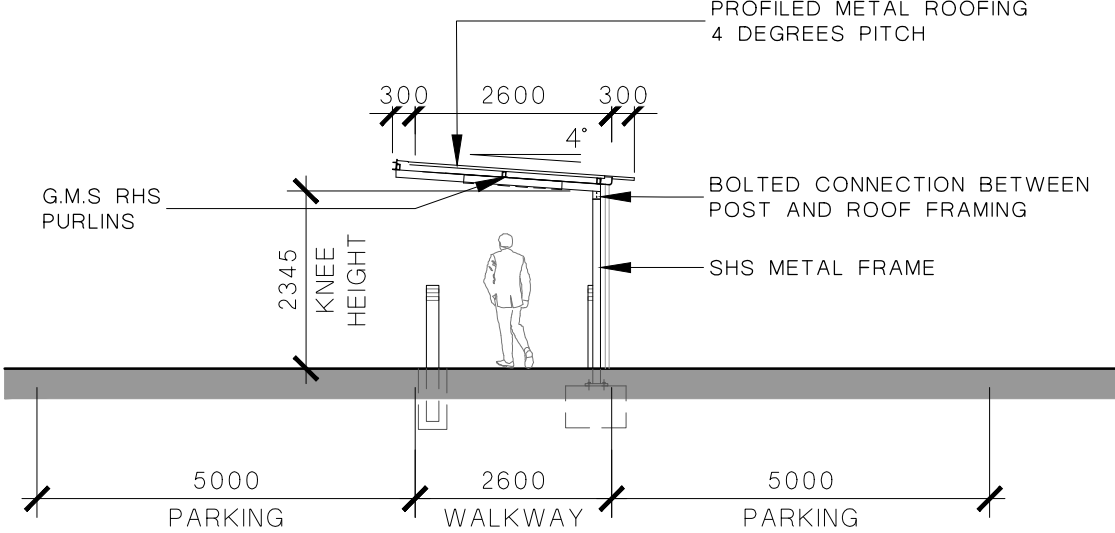
ARTIST IMPRESSION- MAIN WALKWAY CANOPY
N.T.S.



PROPOSED SECTION E
Scale 1:100 at A3



PROPOSED SECTION F
Scale 1:100 at A3



PROPOSED SECTION G
Scale 1:100 at A3

Appendix B Madras Street Alterations

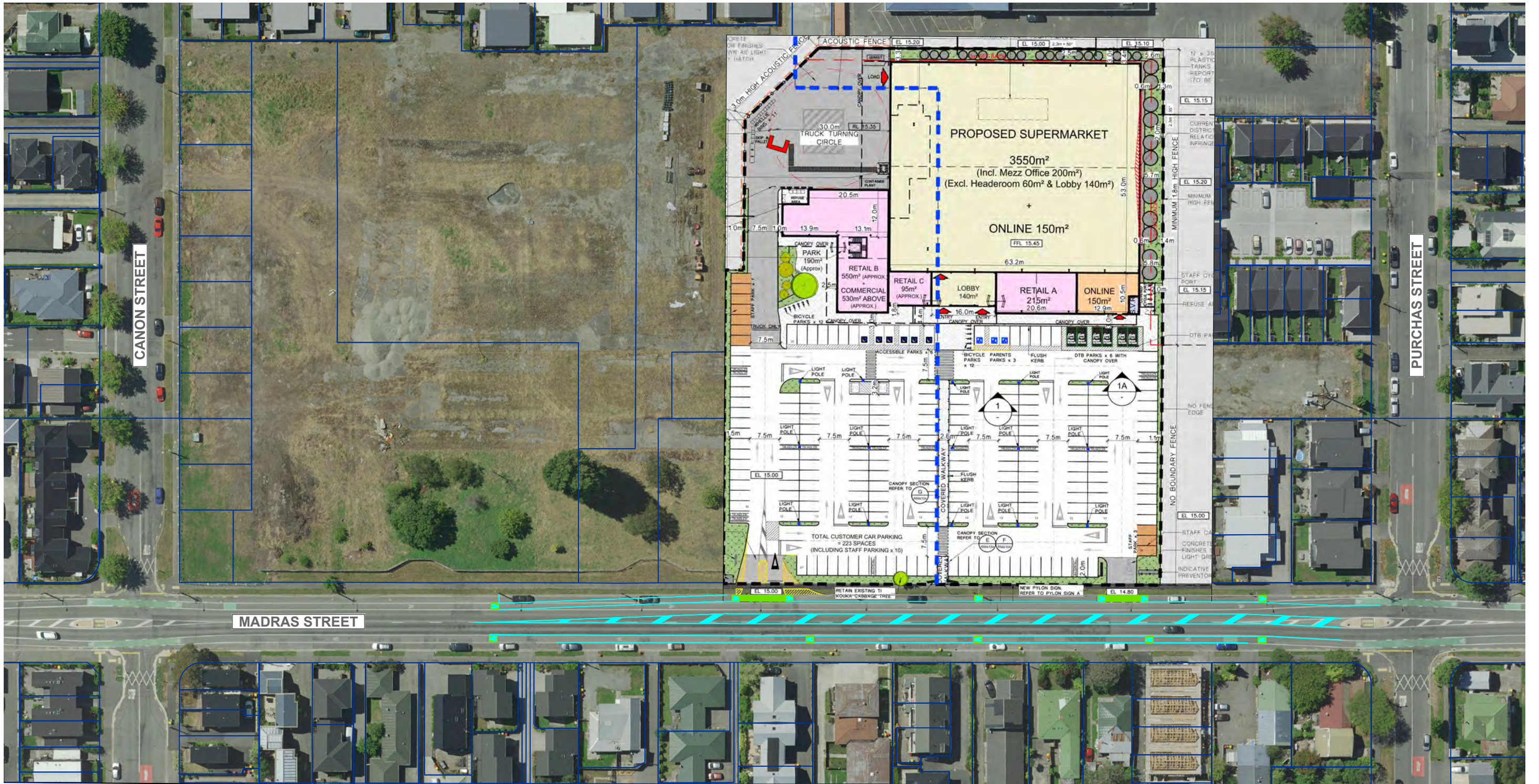




DO NOT SCALE - IF IN DOUBT, ASK

200 mm
150
100
90
80
70
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50
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0

ORIGINAL SIZE A1



REV	DESCRIPTION	AKJ	CR	CR	DATE
C	UPDATED SITE PLAN ADDED TO DRAWING / STANTEC CAD LINEWORK DELETED	AKJ	CR	CR	21/10/24
B	NORTHERN ENTRY/EXIT REDESIGNED TO SUIT DETAILED VEHICLE TRACKING ANALYSIS	AKJ	CR	CR	17/07/24
A	FIRST ISSUE - FOR INFORMATION	AKJ	CR	CR	05/07/24
REV	REVISIONS	DRN	CHK	APP	DATE

SURVEYED		
DESIGNED	S LLOYD	06/24
DRAWN	A JAGODZINSKI	07/24
CAD REVIEW		
DESIGN CHECK	C ROSSITER	07/24
DESIGN REVIEW		
APPROVED		
PROF REGISTRATION:		



Client	
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WOOLWORTHS MADRAS STREET, CHRISTCHURCH
SITE ACCESS ARRANGEMENT OPTION 1 - FLUSH MEDIAN CANNON TO PURCHAS STREET

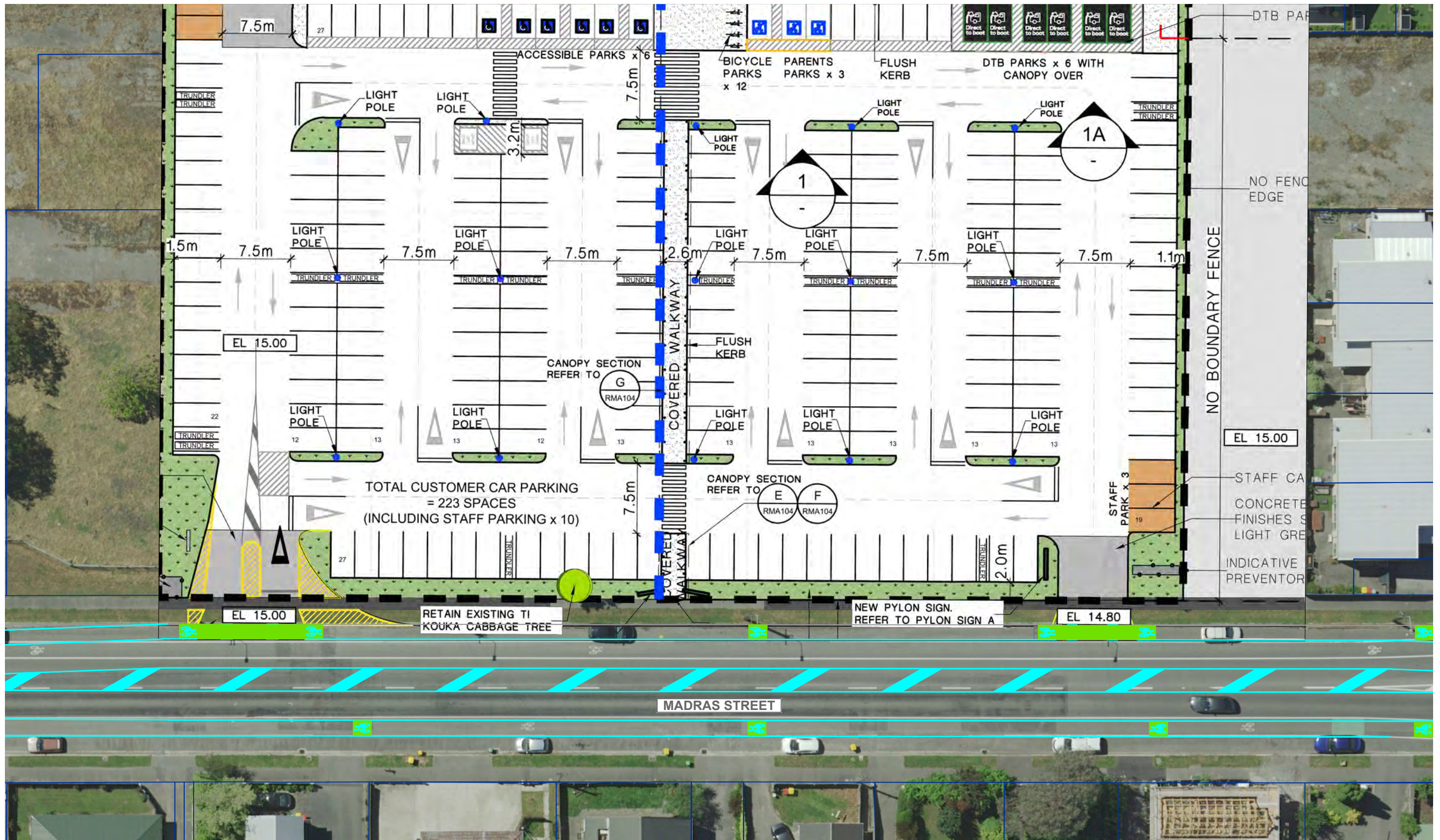
NOT FOR CONSTRUCTION	
Status Stamp	WORKING PLOT
Date Stamp	21/10/2024
Scales	1:500@A1 1:1000@A3
Drawing No.	310206139_C100
Rev.	C



DO NOT SCALE - IF IN DOUBT, ASK

200 mm
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ORIGINAL SIZE A1



NOT FOR CONSTRUCTION

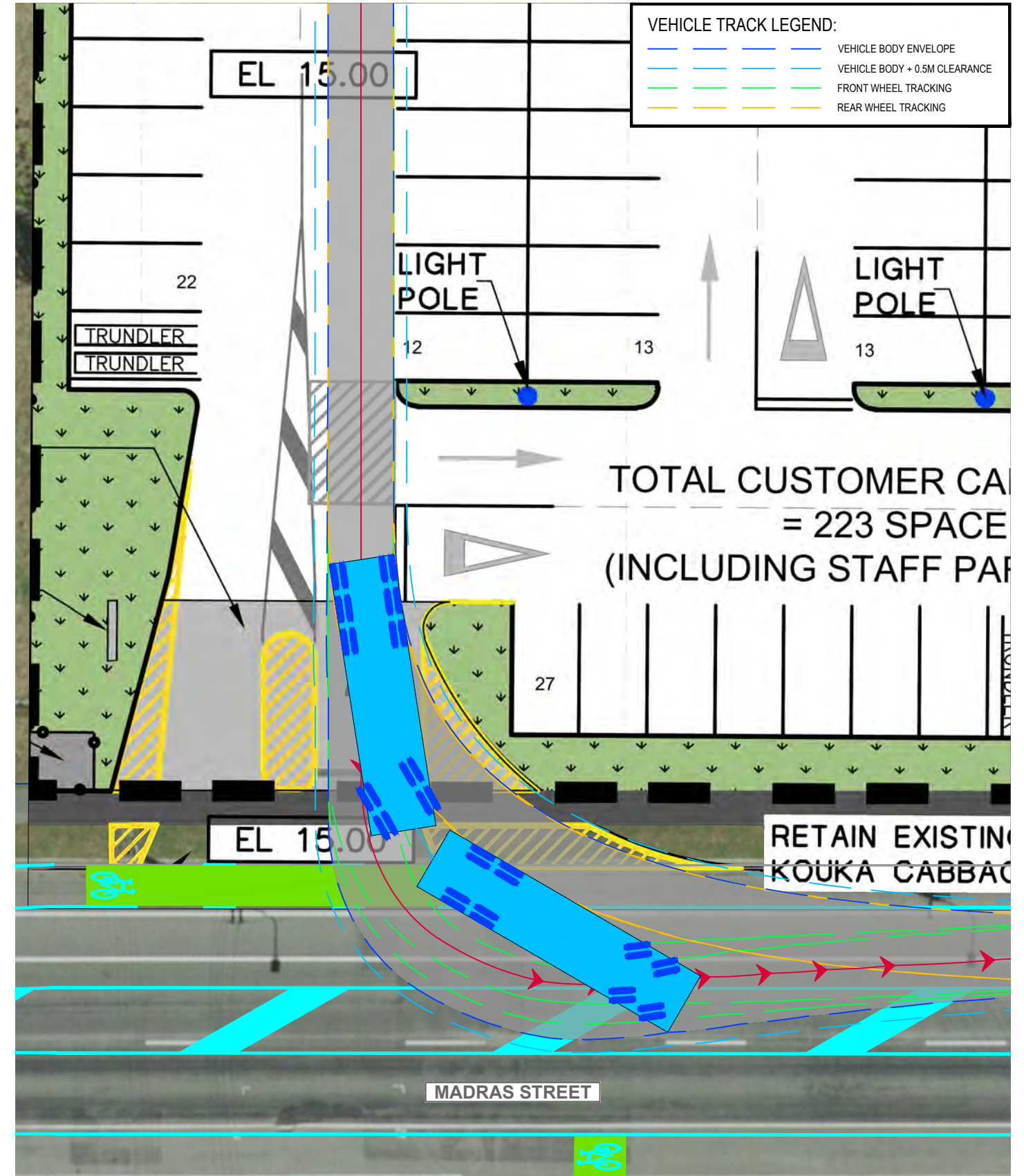
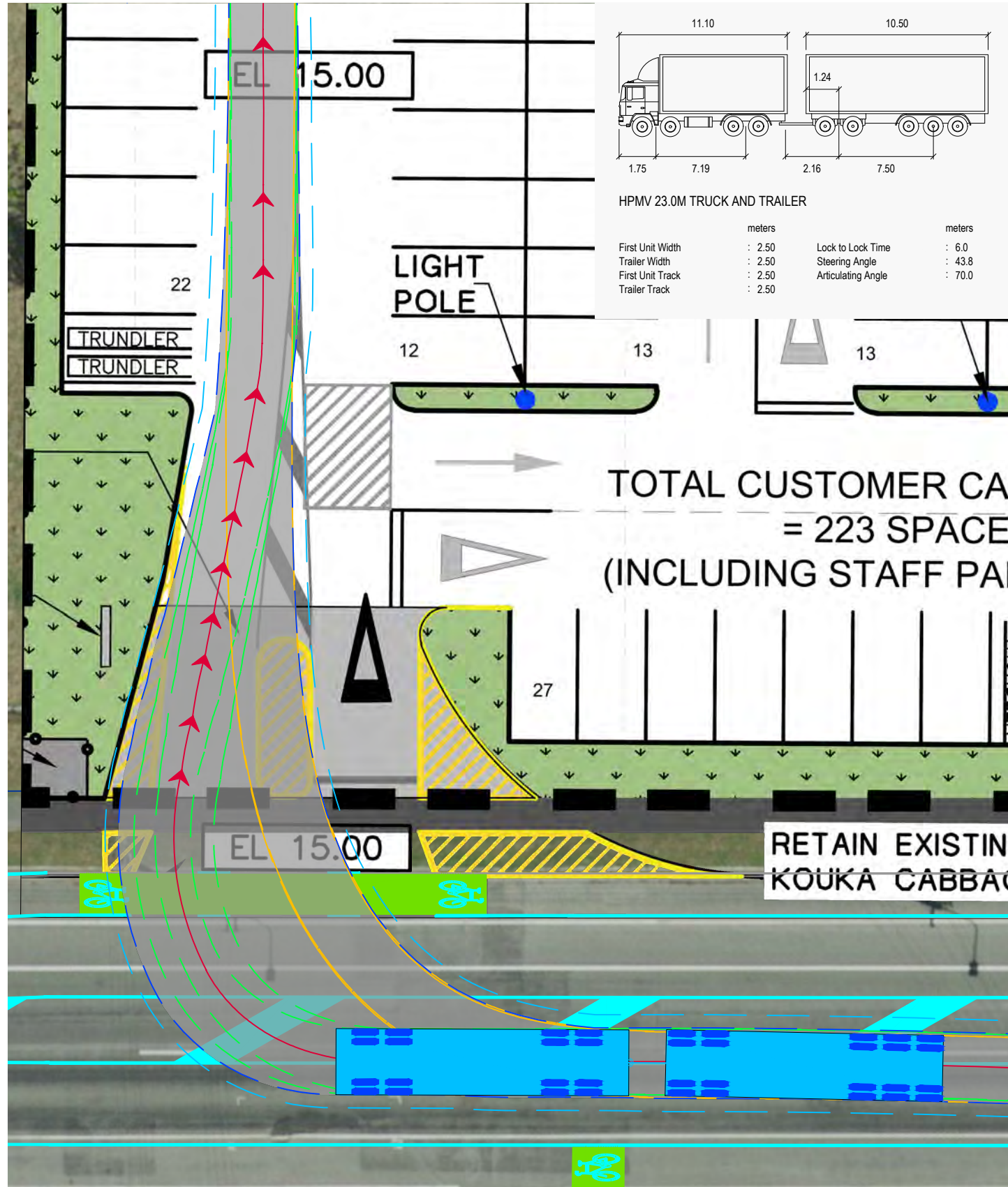
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DO NOT SCALE - IF IN DOUBT, ASK

200 mm
150
100
80
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20
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ORIGINAL SIZE A1



REV	DESCRIPTION	AKJ	CR	CR	21/10/24	DATE	PROF REGISTRATION:
B	UPDATED SITE PLAN ADDED TO DRAWING / STANTEC CAD LINEWORK DELETED	AKJ	CR	CR	21/10/24	DATE	PROF REGISTRATION:
A	FIRST ISSUE - FOR INFORMATION	AKJ	CR	CR	17/07/24	DATE	PROF REGISTRATION:
REV	REVISIONS	DRN	CHK	APP	DATE		

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Client	WOOLWORTHS MADRAS STREET, CHRISTCHURCH	Status Stamp	WORKING PLOT
		Date Stamp	21/10/2024
		Scales	1:100@A1 1:200@A3
		Drawing No.	310206139_C103
		Rev.	B

WOOLWORTHS MADRAS STREET, CHRISTCHURCH

SITE ACCESS ARRANGEMENT OPTION 1 - FLUSH MEDIAN
NORTHERN ENTRY/EXIT VEHICLE TRACKING ANALYSIS

NOT FOR CONSTRUCTION

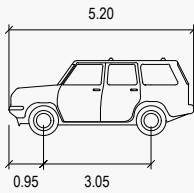
WORKING PLOT

21/10/2024

Scales 1:100@A1 1:200@A3

Drawing No. 310206139_C103

Rev. B



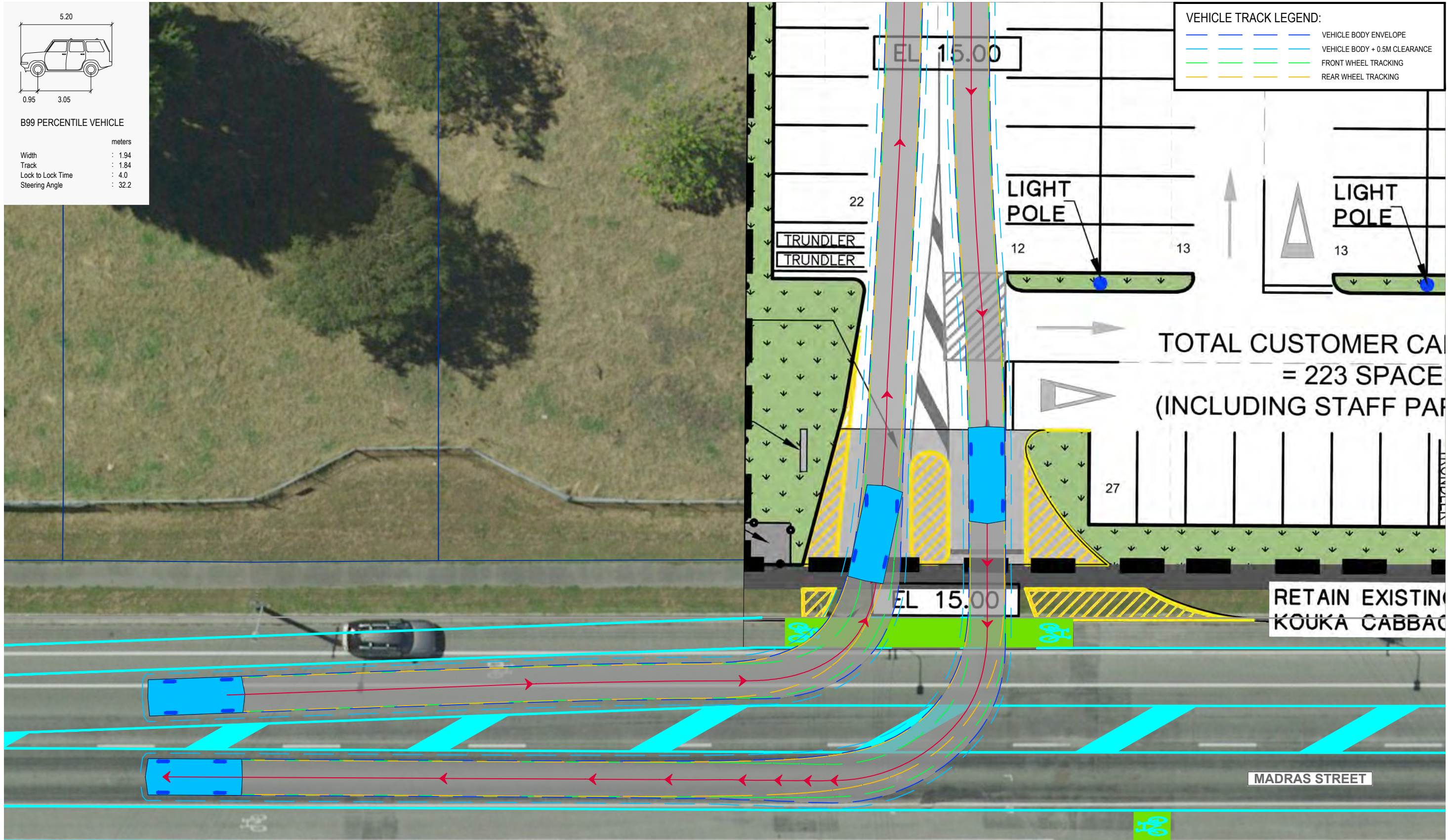
B99 PERCENTILE VEHICLE

	metres
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 4.0
Steering Angle	: 32.2

DO NOT SCALE - IF IN DOUBT, ASK

200 mm
150
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80
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ORIGINAL SIZE A1



NOT FOR CONSTRUCTION

REV	DESCRIPTION	AKJ	CR	CR	21/10/24
B	UPDATED SITE PLAN ADDED TO DRAWING / STANTEC CAD LINEWORK DELETED	AKJ	CR	CR	21/10/24
A	FIRST ISSUE - FOR INFORMATION	AKJ	CR	CR	17/07/24
REV	REVISIONS	DRN	CHK	APP	DATE

SURVEYED		
DESIGNED	S LLOYD	06/24
DRAWN	A JAGODZINSKI	07/24
CAD REVIEW		
DESIGN CHECK	C ROSSITER	07/24
DESIGN REVIEW		
APPROVED		
PROF REGISTRATION:		



Client:

WOOLWORTHS MADRAS STREET, CHRISTCHURCH

SITE ACCESS ARRANGEMENT OPTION 1 - FLUSH MEDIAN
NORTHERN ENTRY/EXIT VEHICLE TRACKING ANALYSIS

Status Stamp

WORKING PLOT

Date Stamp

21/10/2024

Scales

1:100@A1 1:200@A3

Drawing No.

310206139_C104

Rev.

B

Appendix C Compliance Assessment

Table C 1: Transport Standards

Standard	Requirements	Compliance																																																
7.4.3.1 Minimum and maximum number and dimensions of car parking spaces required																																																		
a	Outside the Central City																																																	
	i. Car parking spaces shall be provided with the minimum dimensions in Table 7.5.1.2 in Appendix 7.5.1.	Permitted 2.6m width, 5m length																																																
	ii. At least the minimum number of mobility parking spaces in accordance with Table 7.5.1.1 in Appendix 7.5.1 shall be provided on the same site as the activity.	Permitted 6 spaces proposed																																																
7.4.3.2 Minimum number of cycle parking facilities required																																																		
a	i. At least the minimum amount of cycle parking facilities in accordance with Appendix 7.5.2 shall be provided on the same site as the activity. Visitor Cycle Parking Requirements<table><tr><td>Supermarket</td><td>3,700 m²</td><td>1 / 300 m²</td><td>12</td></tr><tr><td>Gymnasium</td><td>520 m²</td><td>1 / 50 m²</td><td>10</td></tr><tr><td>Café</td><td>125 m²</td><td>1 / 300 m²</td><td>0</td></tr><tr><td>Retail</td><td>250 m²</td><td>1 / 300 m²</td><td>1</td></tr><tr><td>Commercial</td><td>520 m²</td><td>1 / 500 m²</td><td>1</td></tr><tr><td>Total</td><td></td><td></td><td>24</td></tr></table> Staff Cycle Parking Requirements<table><tr><td>Supermarket</td><td>3,700 m²</td><td>1 / 750 m²</td><td>5</td></tr><tr><td>Gymnasium</td><td>520 m²</td><td>1 / 600 m²</td><td>1</td></tr><tr><td>Café</td><td>125 m²</td><td>1 / 100 m²</td><td>1</td></tr><tr><td>Retail</td><td>250 m²</td><td>1 / 750 m²</td><td>0</td></tr><tr><td>Commercial</td><td>520 m²</td><td>1 / 200 m²</td><td>3</td></tr><tr><td>Total</td><td></td><td></td><td>10</td></tr></table>	Supermarket	3,700 m ²	1 / 300 m ²	12	Gymnasium	520 m ²	1 / 50 m ²	10	Café	125 m ²	1 / 300 m ²	0	Retail	250 m ²	1 / 300 m ²	1	Commercial	520 m ²	1 / 500 m ²	1	Total			24	Supermarket	3,700 m ²	1 / 750 m ²	5	Gymnasium	520 m ²	1 / 600 m ²	1	Café	125 m ²	1 / 100 m ²	1	Retail	250 m ²	1 / 750 m ²	0	Commercial	520 m ²	1 / 200 m ²	3	Total			10	Permitted 24 visitor cycle parks. 10 staff spaces
Supermarket	3,700 m ²	1 / 300 m ²	12																																															
Gymnasium	520 m ²	1 / 50 m ²	10																																															
Café	125 m ²	1 / 300 m ²	0																																															
Retail	250 m ²	1 / 300 m ²	1																																															
Commercial	520 m ²	1 / 500 m ²	1																																															
Total			24																																															
Supermarket	3,700 m ²	1 / 750 m ²	5																																															
Gymnasium	520 m ²	1 / 600 m ²	1																																															
Café	125 m ²	1 / 100 m ²	1																																															
Retail	250 m ²	1 / 750 m ²	0																																															
Commercial	520 m ²	1 / 200 m ²	3																																															
Total			10																																															
7.4.3.3 Minimum number of loading spaces required																																																		
a	Any activity where standard car parks are provided; i. At least the minimum amount of loading spaces in accordance with Appendix 7.5.3 shall be provided on the same site as the activity. Loading Bay Requirements 1 bay/1600m2 GFLA	Permitted Loading area will be able to fit multiple service vehicles																																																
7.4.3.4 Manoeuvring for parking and loading areas																																																		
a	Any activity with a vehicle access i. On-site manoeuvring area shall be provided in accordance with Appendix 7.5.6.	Permitted																																																



b	Any activity with a vehicle access to a Collector Road where three or more parking spaces are provided on site: i. On-site manoeuvring area shall be provided to ensure that a vehicle can manoeuvre in a forward gear on to and off a site.	Permitted
7.4.3.5 Gradient of parking and loading areas		
a	All non-residential activities with vehicle access (except visitor accommodation for up to ten guests)	
	i. Gradient of surfaces at 90 degrees to the angle of parking shall be $\leq 1:16$ (6.26%).	Permitted
	ii. Gradient of surfaces parallel to the angle of parking (i.e., parking stall length) shall be $\leq 1:20$ (5%)	Permitted
	iii. Gradient of mobility parking spaces shall be $\leq 1:50$ (2%).	Permitted
7.4.3.6 Design of parking areas and loading areas		
a	All non residential activities with parking https://districtplan.ccc.govt.nz/common/user/contentlink.aspx?sid=123968 and/or loading https://districtplan.ccc.govt.nz/common/user/contentlink.aspx?sid=123846 used during hours of darkness (except hosted visitor accommodation or unhosted visitor accommodation). i. Lighting of parking areas and loading areas shall be maintained at a minimum level of two lux, with high uniformity, during the hours of operation.	Permitted
b	Any urban activity i. The surface of all car parking areas, loading areas, and associated access areas shall be formed, sealed and drained and car parking spaces permanently marked.	Permitted
7.4.3.7 Access design		
a	Any activity with vehicle access. i. Access shall be provided in accordance with Appendix 7.5.7.	Restricted Discretionary Formed width of the northern crossing exceeds maximum permitted width of 9m.
b	Any activity providing 4 or more car parking spaces or residential units. i. Queuing Spaces shall be provided in accordance with Appendix 7.5.8 24m queuing space required for car parks with more than 151 spaces. Can be split across driveways	Restricted Discretionary 17m queuing spaces provided (7m at southern driveway and 10m at northern driveway)



c	Outside the Central City, any vehicle access: i. to an urban road serving more than 15 car parking spaces or more than 10 heavy vehicle movements per day; and/or ii. on a key pedestrian frontage. Either an audio and visual method of warning pedestrians of the presence of vehicles or a visibility splay in accordance with Appendix 7.5.9 shall be provided. If any part of the access lies within 20m of a Residential Zone any audio method should not operate between 20:00 and 08:00 hours.	Permitted More than 15 on-site parking spaces proposed. The driveways meet the visibility splay requirements under normal operation and an audio-visual warning is not required.
d	Within the Central City, any vehicle access to a road serving more than 15 car parking spaces or more than 10 heavy vehicle movements per day, where the site provides access onto any street within the core. i. An audio and visual method of warning pedestrians of the presence of vehicles about to exit the access point shall be provided.	Not Applicable
e	Within the Central City, any vehicle access to a road serving more than 15 car parking spaces or more than 10 heavy vehicle movements per day, in any other location not covered by clause d above.	Not Applicable

7.4.3.8 Vehicle crossings

a	Any activity with a vehicle access to any road or service lane i. A vehicle crossing shall be provided constructed from the property boundary to the edge of the carriageway / service lane.	Permitted
b	Any vehicle crossing on an arterial road or collector road with a speed limit 70 kilometres per hour or greater. i. Vehicle crossing shall be provided in accordance with Appendix 7.5.10.	Not Applicable
c	Any vehicle crossing to any land, building or part of a building located in a rural zone, on or in which rural produce is offered for sale by wholesale and/or retail. i. Vehicle crossing shall be provided in accordance with Figure 14 in Appendix 7.5.10.	Not Applicable
d	Any vehicle crossing on a road with a speed limit 70 kilometres per hour or greater. i. The minimum spacing to an adjacent vehicle crossing on the same side of the frontage road, shall be in accordance with Table 7.5.11.1 in Appendix 7.5.11.	Not Applicable
e	Any activity with a vehicle crossing. i. The maximum number of vehicle crossings shall be in accordance with Table 7.5.11.2 (outside the Central City) and Table 7.5.11.3 (within the Central City) in Appendix 7.5.11.	Permitted Two vehicle crossings on Madras Street.



f.	Any activity with a vehicle crossing. The minimum distance between a vehicle crossing and an intersection shall be in accordance with the Table 7.5.11.4 (outside the Central City) and Table 7.5.11.5 (within the Central City) in Appendix 7.5.11. Separation Requirements: Collector Road to Local Street = 10m	Permitted Madras Street is a collector road. Purchas Street and Canon Street are local streets. Separation from the nearest intersections exceeds 10m
g.	Any vehicle crossing on a rural road. i. The minimum sight lines to vehicle crossings shall be provided in accordance with Figure 18 in Appendix 7.5.11	Not Applicable

7.4.3.9 Locations of buildings and access in relation to road/rail level crossings

a	Any new road or access that crosses a railway line i. No new road or access shall cross a railway line	Not applicable
b	All new road intersections located less than 30 metres from a rail level crossing limit line. i. The road intersection shall be designed to give priority to rail movements at the level crossing through road traffic signals	Not applicable
c	All new vehicle crossings located less than 30 metres from a railway crossings limit line i. No new vehicle crossing shall be located less than 30 metres from a rail level crossing unless the boundaries of a site do not enable the vehicle crossing to be more than 30 metres from the rail level crossing limit line.	Not applicable
d	Any building located close to a level crossing not controlled by automated warning devices. i. Building shall be located outside of sight triangles in Appendix 7.5.13	Not applicable

7.4.3.10 High trip generators

a	This rule applies to activities located outside the Central City, and activities within the Central City that are not exempt from this rule under b. below, that exceed the following thresholds.	
b	Within the Central City - Permitted activities are exempt from this rule.	Not Applicable.
c	Retail Activities (excluding factory shops, retail park zones, trade suppliers and food and beverage outlets). i. More than 500m ² GLFA	Restricted Discretionary

7.4.3.11 Vehicle Access to sites fronting more than one street – within the Central City

a	Vehicle access shall be provided in accordance with Appendix 7.5.14	Not Applicable Not in Central City
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7.4.3.12 Lane formation within the central city

a	The legal width of the central city lane shall be between 6m and 12m and have a minimum height clearance of 4.5m	Not Applicable Not in Central City
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With every community, we redefine what's possible.

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