BEFORE THE INDEPENDENT COMMISSIONER
AT WAIRARAPA

UNDER	of the Resource Management Act 1991 ("**RMA**")
AND	
IN THE MATTER	of an application by Woolworths New Zealand Ltd ("**Woolworths**") for resource consent in relation to site at 134 Main Street, Greytown known as FreshChoice Greytown

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STATEMENT OF EVIDENCE OF LEO HILL ON BEHALF OF WOOLWORTHS NEW ZEALAND LIMITED

TRAFFIC

15 SEPTEMBER 2023

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1. INTRODUCTION

Background and experience

1.1 My full name is Leo Donald Hills. I am a Director at Commute Transportation Consultants.

1.2 I hold a Masters of Civil Engineering and a Bachelor of Engineering with Honours from the University of Auckland.

1.3 I have over 25 years' experience as a specialist traffic and transportation engineer. During this time, I have been engaged by both local authorities and private clients to advise on traffic and development issues covering safety, management and planning matters of many kinds.

1.4 Projects I have been involved with that are particularly relevant to the Application include:

(a) Countdown Paeroa upgrade;

(b) Countdown Metro Wanaka ;

(c) Countdown Cambridge access / online review; and

(d) Countdown Pukekohe access / loading review

1.2 I have visited the site on a number of occasions with the latest being 28 August 2023. I was also the reviewer of the April 2023 Transport Assessment Report ("**TAR**") which is included in the AEE.

Code of conduct

1.5 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

2. SCOPE OF EVIDENCE

2.1 I have been asked by Woolworths to consider the potential transportation implications of the construction of an amended access at 134 Main Street,

Greytown ("**Site**"), which forms part of State Highway 2, for use by customers and service vehicles to access the FreshChoice supermarket on the site.

2.2 My evidence will discuss:

(a) the Site and the existing environment;

(b) the Application and proposed layout;

(c) the anticipated transportation effects of the Application, and mitigation measures;

(d) the response to the Council's Section 42A Hearing Report; and

(e) response to relevant submitters on the Application.

2.3 In my opinion, the Application results in minimal adverse effects on the operational and safety of the road network, and also ensures that effects on pedestrian safety are appropriately avoided.

3. THE EXISTING ENVIRONMENT

Site location

3.1 The wider supermarket site is zoned under the Combined District Plan as Residential, Industrial and Commercial. The Site at 134 Main Street is wholly zoned Commercial. Main Street comprises of traditional shopfronts and part of the wider supermarket site includes the only Industrial zoned land in the immediate vicinity. Main Street forms part of State Highway 2, bringing traffic through the settlement to the north and south.

3.2 I am aware that Waka Kotahi and Council are considering upgrading State Highway 2 in the near future to improve pedestrian and cycle access. From discussion I have had with Waka Kotahi I understand the works includes:

(a) Moving the existing zebra crossing on Main Street State Highway 2 to the north by approximately 15m (away from the site);

(b) Changing the zebra crossing to a fully raised crossing to slow speeds in the area;

(c) Increasing the lengths of the kerb buildouts at the crossing; and

(d) Inclusion of cycle facilities at the zebra crossing, largely comprising short approach lanes with green markings on the road surface.

3.3 I understand that the funding for the upgrade has been confirmed, and the current construction programme has the upgrade scheduled for the summer months (although this could be subject to change).

3.4 In my opinion these works will improve safety in the area for pedestrians and cyclists by slowing traffic and improving crossing facilities.

3.5 Adjacent to the site, Hastwell Street and West Street are classified as local roads, with Main Street part of the State Highway network (State Highway 2).

3.6 Figure 2 shows the site location in relation to the road network and Figure 3 shows the existing roading environment.

Figure 1: Site Location

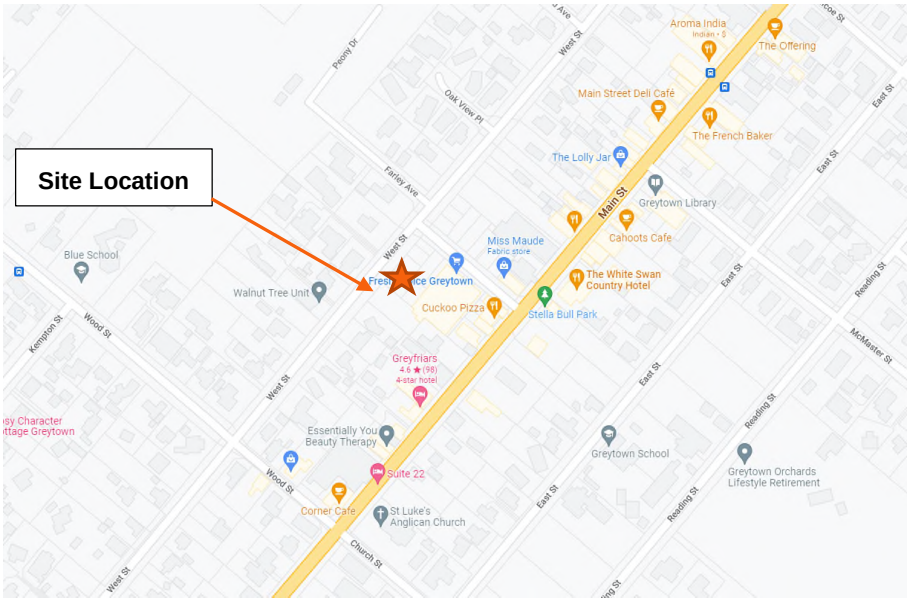


Figure 2: Surrounding Road Environment (site indicatively outlined in orange)

Road Network

3.7 Adjacent to the site, Hastwell Street, West Street and Main Street all provide a single traffic lane in each direction, with footpaths provided on both sides of the road. All local intersections are priority-controlled give way intersections. Access to the supermarket is provided from both West Street and Hastwell Street for both customers and loading vehicles. The residential dwelling features access to Main Street. The posted speed limit is 40km/hr (recently reduced in January 2023 from 50km/hr).

Traffic Volumes

3.8 Peak hour traffic counts at the following intersections were undertaken on Thursday 30 March and Saturday 1 April 2023.

(a) Supermarket access to West Street;

(b) Supermarket access to Hastwell Street; and

(c) Hastwell Street / Main Street intersection.

3.9 I consider the peak hour surveys indicate minimal flows through the subject intersections and are considered typical of local road intersections in Greytown.

3.10 The survey results are detailed in Tables 1 to 6 below.

Table 1: Traffic Volumes - Supermarket access to West Street (Thursday)

	AM					PM				
	Cars	Trucks	Buses	Cyclists	AM Total	Cars	Trucks	Buses	Cyclists	PM Total
West St (East)	**76**	**3**	**0**	**1**	**80**	**107**	**1**	**0**	**0**	**108**
Left into Supermarket Access	1	0	0	0	1	10	0	0	0	10
Thru to West St (West)	75	3	0	1	79	97	1	0	0	98
Supermarket Access	**34**	**4**	**0**	**0**	**38**	**75**	**2**	**0**	**0**	**77**
Left into West St (West)	21	3	0	0	24	46	1	0	0	47
Right into West St (East)	13	1	0	0	14	29	1	0	0	30
West St (West)	**113**	**9**	**0**	**0**	**122**	**122**	**3**	**0**	**0**	**125**
Thru to West St (East)	82	8	0	0	90	75	2	0	0	77
Right into Supermarket Acces	31	1	0	0	32	47	1	0	0	48
Grand Total	**223**	**16**	**0**	**1**	**240**	**304**	**6**	**0**	**0**	**310**

Table 2: Traffic Volumes - Supermarket access to West Street (Saturday)

	IP				
	Cars	Trucks	Buses	Cyclists	IP Total
West St (East)	**122**	**6**	**0**	**4**	**132**
Left into Supermarket Access	11	1	0	0	12
Thru to West St (West)	111	5	0	4	120
Supermarket Access	**69**	**1**	**0**	**5**	**75**
Left into West St (West)	35	0	0	5	40
Right into West St (East)	34	1	0	0	35
West St (West)	**135**	**4**	**0**	**1**	**140**
Thru to West St (East)	88	3	0	0	91
Right into Supermarket Acces	47	1	0	1	49
Grand Total	**326**	**11**	**0**	**10**	**347**

Table 3: Traffic Volumes - Supermarket access to Hastwell Street (Thursday)

	AM					PM				
	Cars	Trucks	Buses	Cyclists	AM Total	Cars	Trucks	Buses	Cyclists	PM Total
Hastwell St (North)	**31**	**3**	**0**	**0**	**34**	**65**	**3**	**0**	**1**	**69**
Thru to Hastwell St (South)	23	1	0	0	24	30	0	0	0	30
Right into Supermarket Acces	8	2	0	0	10	35	3	0	1	39
Hastwell St (South)	**61**	**2**	**0**	**0**	**63**	**65**	**0**	**0**	**0**	**65**
Left into Supermarket Access	32	2	0	0	34	40	0	0	0	40
Thru to Hastwell St (North)	29	0	0	0	29	25	0	0	0	25
Supermarket Access	**21**	**0**	**0**	**0**	**21**	**66**	**2**	**0**	**0**	**68**
Left into Hastwell St (North)	5	0	0	0	5	36	1	0	0	37
Right into Hastwell St (South)	16	0	0	0	16	30	1	0	0	31
Grand Total	**113**	**5**	**0**	**0**	**118**	**196**	**5**	**0**	**1**	**202**

Table 4: Traffic Volumes - Supermarket access to Hastwell Street (Saturday)

	IP				
	Cars	Trucks	Buses	Cyclists	IP Total
Hastwell St (North)	**59**	**1**	**0**	**3**	**63**
Thru to Hastwell St (South)	39	1	0	0	40
Right into Supermarket Acces	20	0	0	3	23
Hastwell St (South)	**73**	**3**	**0**	**1**	**77**
Left into Supermarket Access	40	2	0	1	43
Thru to Hastwell St (North)	33	1	0	0	34
Supermarket Access	**67**	**2**	**0**	**0**	**69**
Left into Hastwell St (North)	39	2	0	0	41
Right into Hastwell St (South)	28	0	0	0	28
Grand Total	**199**	**6**	**0**	**4**	**209**

Table 5: Traffic Volumes - Hastwell Street / Main Street Intersection (Thursday)

	AM					PM				
	Cars	Trucks	Buses	Cyclists	AM Total	Cars	Trucks	Buses	Cyclists	PM Total
Hastwell St	**38**	**1**	**0**	**0**	**39**	**66**	**0**	**0**	**0**	**66**
Left into Main St (East)	34	1	0	0	35	57	0	0	0	57
Right into Main St (West	4	0	0	0	4	9	0	0	0	9
Main St (East)	**398**	**47**	**8**	**0**	**453**	**372**	**39**	**7**	**0**	**418**
Thru to Main St (West)	348	46	8	0	402	319	38	7	0	364
Right into Hastwell St	50	1	0	0	51	53	1	0	0	54
Main St (West)	**316**	**52**	**9**	**0**	**377**	**435**	**45**	**5**	**0**	**485**
Left into Hastwell St	16	1	0	0	17	22	0	0	0	22
Thru to Main St (East)	300	51	9	0	360	413	45	5	0	463
Grand Total	**752**	**100**	**17**	**0**	**869**	**873**	**84**	**12**	**0**	**969**

Table 6: Traffic Volumes - Hastwell Street / Main Street Intersection (Saturday)

	IP				
	Cars	Trucks	Buses	Cyclists	IP Total
Hastwell St	**69**	**2**	**0**	**0**	**71**
Left into Main St (East)	58	2	0	0	60
Right into Main St (West	11	0	0	0	11
Main St (East)	**423**	**25**	**0**	**2**	**450**
Thru to Main St (West)	366	22	0	2	390
Right into Hastwell St	57	3	0	0	60
Main St (West)	**425**	**14**	**3**	**3**	**445**
Left into Hastwell St	35	2	0	1	38
Thru to Main St (East)	390	12	3	2	407
Grand Total	**917**	**41**	**3**	**5**	**966**

Road Safety

3.11 I have undertaken a search of the New Zealand Transport Agency's (NZTA) Crash Analysis System (CAS) to identify all reported crashes in the vicinity of the site during the five-year period 2018 - 2022 as well as any available 2023 data. The study area includes the site frontages to Hastwell Street, West Street and Main Street, as well as the Main Street / Hastwell Street and the

West Street / Hastwell Street intersections. A total of three crashes were recorded within the search area:

(a) One crash occurred on Main Street involving a vehicle stopping or slowing for a queue and resulted in minor injury;

(b) Two other crashes occurred within the search area involving vehicles turning into or out of the site and did not result in any injury.

3.12 The number of crashes within the crash search are considered typical of roads within a town centre area. I note that no crashes recorded resulted in serious injuries. In my opinion the proposal is not considered to detrimentally affect the good existing crash record, with the new crossing designed to ensure safe movements into the site.

4. OVERVIEW OF THE APPLICATION

4.1 The Application includes:

(a) Demolition of an existing residential dwelling;

(b) New entry-only vehicle access from State Highway 2 (Main Street);

(c) New pylon sign at the new entry;

(d) New pedestrian footpath to Main Street;

(e) Reconfiguration of the existing loading dock;

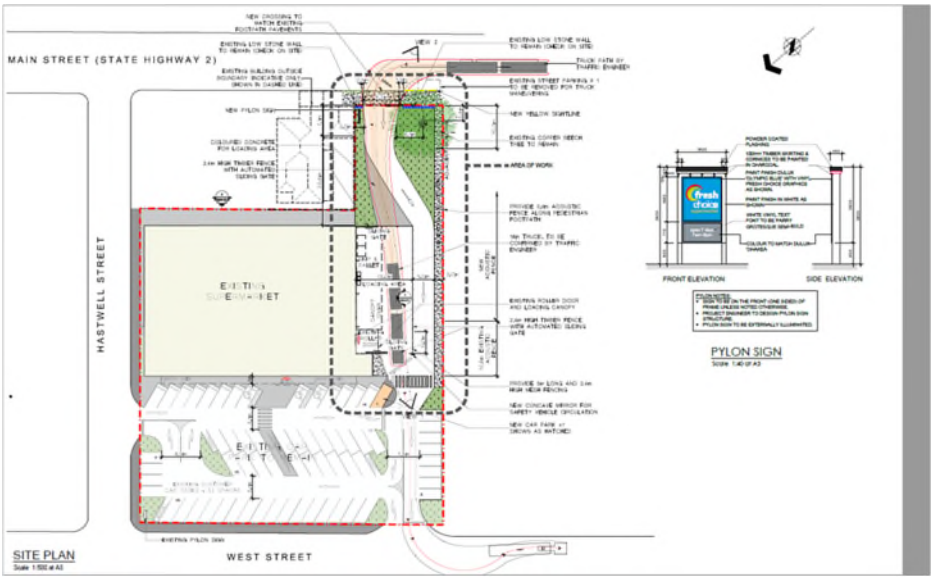
(f) Removal of two on-street parking spaces;

(g) One new customer parking space; and

(h) Minor modifications to the existing carpark.

4.2 Figure 3 shows the proposed redevelopment.

Figure 3: Proposed Redevelopment



4.3 As a result of the proposal the supermarket will have the following access points:

(a) Access 1 – a new entry-only access from Main Street State Highway 2. The access will serve both customer and truck entry and will be further assessed within this report. The existing access to Main Street will be removed and replaced with the proposed entry-only access. The vehicle crossing will measure 8.3m wide at the property boundary, and the internal customer vehicle lane will measure 5.0m wide. Customers and light delivery vehicles (vans and light trucks) will turn both left in and right into the development, with large delivery vehicles only left turning into the site;

(b) Access 2 – existing two-way customer access to Hastwell Street. The access currently serves two-way customer movements and entry-only truck movements. The access will not be modified as part of the redevelopment, however, will no longer serve truck entry movements; and

(c) Access 3 – existing two-way customer access to West Street. The access currently serves two-way customer movements and exit-only truck movements. The access will not be modified as part of the redevelopment.

5. ASSESSMENT OF THE APPLICATION

Traffic Generation

5.1 The proposed works to the existing supermarket do not increase the retail floor area, and therefore no additional traffic is expected to be generated by the proposal. The assessment below details the effects of the redistribution of customer and service vehicles with the introduction of the new access to State Highway 2.

5.2 Information previously provided by the Applicant and as outlined in the original TAR conservatively estimated an average of 6 vans, 2 light trucks and 10 B-trains that may service the supermarket throughout the day.

5.3 I understand from the existing store operator that the store currently has the following truck/delivery movements:

(a) There are on average 5-7 truck deliveries to the supermarket each day.

(b) Of these, there is typically 1 B-train and the rest are smaller or medium sized trucks delivering fresh produce, chilled goods, bread and milk.

(c) Deliveries usually happen in the morning, and there are very few/infrequent deliveries after midday.

5.4 As such, the actual truck numbers at the store (which are not expected to materially change) are around half that originally assessed in the TAR and the number of B-trains is 10% of that originally assessed. The TAR concluded the trucks could be accommodated safely and efficiently (Section 7.2), so the fact that there are less truck movements/smaller truckers accessing the site gives comfort that that there will be no material change to traffic flow.

5.5 All B-trains will arrive from the Distribution Centre in Palmerston North, thereby travelling as they do now by using West Street. Rather than enter the site via West Street the B-trains will travel past the site to Humphries Street and turn left onto State Highway 2 then into the site. The existing B-trains will travel as they currently do which is via West Street and then Humphries Street and turn right onto State Highway 2. The remaining deliveries will be sourced locally.

5.6 The key periods for a supermarket traffic modelling assessment are generally considered to be the weekday evening peak hour and Saturday peak hour.

The traffic surveys detailed previously in my evidence recorded the inbound and outbound customer movements in both peak hours. [Table 1-4]

5.7 As shown in Table 7 of the TAR, provided with the AEE, based on the traffic surveys, the supermarket generates 273 vehicles per hour (vph) and 254vph in the weekday PM and Saturday peak periods respectively. These traffic movements are not expected to materially change as a result of the proposal.

5.8 The trip rates for the proposed supermarket activities have also been checked against the New South Wales Roads and Traffic Authority Guide to Traffic Generating Developments (RTA Guide), the industry standard traffic generation document used in New Zealand and Australia.

5.9 As detailed in the ITA, the calculated trip generation rates for this supermarket based on the surveyed data are almost identical to the industry standard trip rates. I therefore consider them to be appropriate for analysis.

5.10 The new entry-only access from Main Street is estimated to accommodate 40% of customer entry movements into the site, with the other two accesses accommodating the remaining 60% of customer entry movements.

5.11 All service vehicles will now enter through the new access, with B-trains only left turning into the site. The modelling assessment of the new access is detailed below.

Traffic Modelling

5.12 The new access driveway performance is detailed in Tables 8 and 9 of the TAR. The new access accommodates the customer traffic redistribution (40% of existing entry volumes) and all delivery vehicles.

5.13 In my opinion, the TAR demonstrates that the driveway operates well, with minimal queues on the major approaches. Overall, the driveway operates with a level of service ("**LOS**") of A in both peak hours, which I consider to be more than appropriate for a priority driveway.

5.14 Minimal queues of less than one vehicle arise on State Highway 2, and therefore the queuing will have a minimal impact on the operation of the State Highway 2. As noted above, all large delivery vehicles (eg 1 B-train per day) will turn left into the site, and therefore any queuing will not affect the existing pedestrian crossing on State Highway 2.

5.15 I also note that the proposed works on State Highway 2 by Waka Kotahi will move the pedestrian crossing some 15m further away from the proposed driveway thereby further reducing any potential conflict.

5.16 To ensure the operational efficiency of the new access, a sensitivity test was undertaken. The weekday PM peak hour was reassessed with the following conservative parameters:

(a) Increased distribution of customer traffic entering through the new access from 40% to 50%; and

(b) Traffic growth on State Highway 2 of 1% for 10 years, therefore a 10% increase in through traffic volumes.

5.17 The assessment of the additional conservative parameters in a future design year of 2032 result in a 95%ile vehicle queue of only 4.4m (ie one vehicle), and therefore still does not affect the pedestrian crossing.

5.18 The Hearing Report analysis and in particular the Council's consultant traffic engineer has noted that the SIDRA analysis has not likely included the delay to vehicles entering the site as a result of requiring to give way to pedestrians on the footpath. I can confirm that this is a correct assumption.

5.19 As a result, I have undertaken an additional SIDRA analysis assuming all entering vehicles also give way to pedestrians. Based on the pedestrian numbers in Appendix C of the TAR, the weekday (AM and PM) volumes are unlikely to have any bearing on the SIDRA analysis (only up to 17 pedestrians along the footpath per hour or one every 3.5 minutes during these times). During the Saturday peak period the pedestrians along State Highway 2 peak at around 85 pedestrians per hour (1.4 per minute).

5.20 As such I have re-modelling the driveway with pedestrians included. The results show:

(a) the driveway remains at LOS A;

(b) the overall degree of saturation increases from that reported in the TAR from 0.266 to 0.277;

(c) the average delay increases from 0.6 in the TAR to 0.7 seconds per vehicles; and

(d) the 95 percentile queue increase from 2.4 in the TAR to 2.9m (right turn into the driveway)

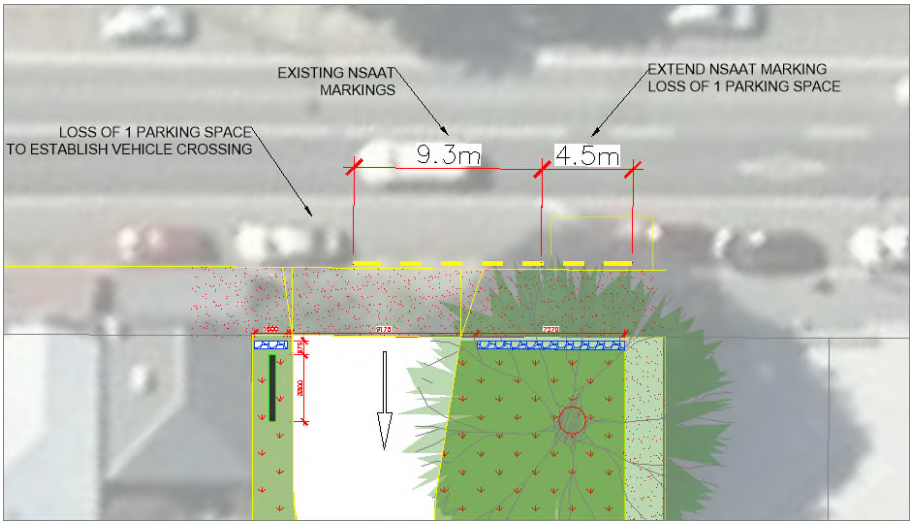
5.21 As such, the inclusion of pedestrians in the SIDRA analysis makes little to no difference to the results in relation to queuing and efficient functioning of the State Highway. In my opinion, the delay / queuing experienced will be minimal.

Loading and Servicing

5.22 All delivery vehicles are proposed to now access the supermarket from the new access.

5.23 The proposed vehicle crossing will be 8.3m wide at the property boundary, with the width required to accommodate the vehicle tracking of the largest anticipated design vehicle. The establishment of the vehicle crossing will require the removal of one on-street parking space, with an additional parking space removed to enable clear sightlines between left turning trucks and pedestrians. The changes to the on-street parking spaces and the proposed vehicle crossing are shown in Figure 4 below.

Figure 4: On-Street Parking Space Changes



5.24 As detailed above, no stopping at all times ("**NSAAT**") markings currently exist in the location of the vehicle crossing. Therefore, an extension to these markings is proposed of approximately 4.5m (approximately one parking space) to enable the sightlines mentioned previously. An additional parking space is required to be removed to establish the new vehicle crossing. This results in a total on street parking space loss of two spaces.

5.25 Vehicle tracking into the site of a 23m B-train is shown in **Attachment A** of my evidence. As shown, the trucks can safely and efficiently manoeuvre into the site. The vehicle crossing will satisfy relevant SWDC design requirements; the footpath either side of the crossings will maintain a consistent surface finish, signalling to drivers that pedestrians have right of way. This is also consistent with other crossings along State Highway 2 in Greytown.

5.26 Trucks are currently required to travel through the customer carpark, and then reverse within the customer carpark up into the loading dock. Reversing manoeuvres within customer carparks are typically avoided where possible, as they can pose safety issues with regards to pedestrians and customer vehicles. The proposal intends to remove the requirement for these reversing manoeuvres and in my opinion therefore results in an improvement in on-site safety.

5.27 The loading vehicles will access the loading area directly from the new access, and then exit to West Street (as per the existing arrangement). Customer vehicles can access the customer carpark from the new access, bypassing the loading area. Customer vehicles can also access the site from the other two existing accesses. Trucks exiting the loading area will give way to customer vehicles and pedestrians. The fencing near this give way area will be visually permeable for 5m and a concave traffic mirror will be provided, to ensure visibility between trucks and customer vehicles. I would recommend that a speed bump is provided within the customer vehicle lane to slow vehicles in this area.

5.28 I consider the proposed operation to be an improvement on the existing operation. Trucks are no longer required to reverse on-site or within the customer carpark, and are able to easily access and egress the loading area. The trucks also are no longer required to travel within the customer carpark in front of the supermarket. With the improvements detailed as part of this proposal, as well as the visibility mitigation detailed above, the proposed access is considered acceptable, and will have positive effects in terms of safety.

5.29 To enter the site, B-trains currently use West Street, turning off State Highway 2 at North Street and travel down West Street to the site. When they leave, they again exit onto West Street and continue south, turning onto Humphries Street to get back to the State Highway 2. With the proposal, B-trains will need to deviate from their existing route to the site and use West Street onto Humphries Street to Main Street, State Highway 2 to access the site. Therefore, B-trains will use the same route but one B-train a day will have to

run it twice in order to turn left into the site. Figure 5 shows this revised route while Appendix A3 shows the tracking of a large truck turning in and out of Humphries Street which I consider to be acceptable. I note the manoeuvre from Humphries Street into Main Street, (State Highway 2) would require the truck to traverse into the southbound right turn bay (but not the through lane). Given the low number of trucks (ie one a day) undertaking this manoeuvre I consider this to be acceptable.

Figure 5 Revised entry route

5.30 Overall, in my opinion the proposed vehicle crossing is considered appropriate.

Positive effects

5.31 In general, the Site is well located within the existing Greytown residential community. In my opinion, the Application will result in the removal of reverse manoeuvring of trucks within the site, as well as the removal of trucks traversing through the main parking area. Both of these are important positive

benefits. I support the grant of consent but I would recommend the following conditions be included:

(a) A speed bump should be provided within the customer vehicle lane internal to the site to slow vehicles.

(b) The development should provide a Construction Traffic Management Plan ("**CTMP**") before construction begins.

(c) A loading management plan should be developed for the site. This should ensure deliveries are staged to avoid any potential queuing onto Main Street.

6. SECTION 42A HEARING REPORT

6.1 I have reviewed the Council's Section 42A Hearing Report with particular regard to the transportation matters in the statement of evidence of Ms Harriet Fraser (Council's consultant transportation engineer).

Additional information

6.2 Ms Fraser identifies two areas in which she seeks further information (paragraph 8.1). These are:

(a) an assessment of the traffic effects associated with large trucks, including B-trains, circulating through the local street network to access the site via a left turn from Main Street; and

(b) further analysis of delays and queuing associated with entering drivers giving way to pedestrians approaching and walking across the vehicle crossing.

6.3 In relation to point (a) above, I have provided additional information regarding a B-train circulating through the local street network and additional tracking for the left turn out of Humphries Street (paragraph 5.29 above). I also note that there is only currently (and as anticipated) to be one B-train truck per day and the route used (North Street / West Street and Humphries Street) is already used by the B-train (essentially the truck uses part of the route twice per day rather than once).

6.4 In relation to point (b) above, paragraphs 5.19-5.20 of my evidence provide further analysis of the delay and queuing, with vehicles giving way to pedestrians. The results of the SIDRA analysis show that inclusion of

pedestrians makes little to no difference to the results. In my opinion, the delay / queuing experienced will be minimal.

Further issues

6.5 Ms Fraser considers at paragraph 4.2j the projected 1% growth to be low and that additional pass-by trips (as well as the issue of pedestrians having priority which I have considered above) have not been taken into account. In this regard I have undertaken further assessment of the State Highway 2 previous growth in my response to a submission by Greytown School. This analysis shows the 1% growth projected for the next 10 years to be conservative.

6.6 In terms of pass-by trips Ms Fraser notes at paragraph 4.2g that she expects some additional traffic associated with passing traffic which are currently not aware of a supermarket in this location. In this regard I note that the exact (if any) increase relating to this is difficult to quantify. This is partly why a sensitivity test was undertaken in the TAR with up to 50% of all supermarket traffic entering the proposed new driveway. Further, any increase from passing by traffic is not purely an "increase" in traffic but rather through traffic being "diverted" to become turning traffic.

6.7 To further review the performance of the driveways I have undertaken an additional SIDRA analysis assuming 75% of the supermarket traffic enters via this driveway and growth being 3% per year (30% increase over 10 years). Note the SIDRA also has vehicles giving way to pedestrians. The results show:

(a) PM afternoon peak - degree of saturation of 0.415, Level of Service B and maximum queue of 11m (2 vehicles)

(b) Saturday midday peak - degree of saturation of 0.379, Level of Service B and maximum queue of 12m (2 vehicles)

6.8 Overall, the result still shows minimal queuing and delay with the queuing not extending near the pedestrian crossing. I would note that I consider this to be an unrealistic scenario, however it does demonstrate that the driveway has significant spare capacity.

6.9 Ms Fraser is also concerned at paragraph 4.4 with drivers giving way to pedestrians when turning right and stopping in the road or not giving way to pedestrians. In this regard I would note my response to the issues raised by Waka Kotahi. From my review of all the supermarkets in the area including all six supermarkets in Greytown, Featherston, Carterton or Masterton I can confirm that in the last 10 years there have been no crashes involving a

pedestrian or a cyclist on any of the supermarket driveways. A number of these driveways are on State Highway 2 and the majority have all movement entering as proposed.

6.10 I would also note the area is low posted speed (40km/hr) and furthermore, Waka Kotahi is in the process of improving safety by upgrading the pedestrian crossing to be a raised table type thereby further reducing operating speeds (and thus reducing and severity if a crash does occur) in the area.

6.11 Ms Fraser notes concern at paragraph 6 over the precision with which a truck driver would need to make the turn into the Site. In this regard I note the vehicle tracking simulation I have used (Autoturn) is industry standard which allows for 500mm clearance (also industry standard). The design also has the low walls along the front boundary set even further away from the vehicle tracking (ie the width between the walls is wider than the driveway) to allow for driver error.

6.12 Overall, in my opinion the additional information I have provided addresses Ms Frasers concerns and / or the remaining concerns are unfounded.

7. SUBMITTERS

7.1 I have reviewed those submissions which raise traffic issues and make the following comments.

Waka Kotahi

7.2 Waka Kotahi lists five primary points of concern and a further four traffic concerns in their submission. I comment on each of these below.

B-train queuing blocking the adjacent pedestrian crossing

7.3 In this regard the proposal is for all B-train trucks to only turn left into the site (ie approach from the south) as I have previously outlined in my evidence at paragraph 4.4. With the nearby pedestrian crossing to the north of the access, this blocking will not occur. I consider this primary point of concern has therefore been fully resolved.

Stationary vehicles on or near the pedestrian crossing will obscure visibility from approaching vehicles

7.4 The assessment on which this statement is based is unclear to me, as the crossing is currently 25m (increasing to 40m as proposed by Waka Kotahi)

away from the driveway and the right turn queuing is only anticipated to be one vehicle. Further, this type of situation (right turning vehicle on a main road potentially obstructing visibility near a zebra crossing) is not uncommon. Waka Kotahi will be aware of many similar situations (for driveways or roads) in a number of zebra crossings in the region on State Highway 2 including:

(a) Zebra crossing at Featherston (near Daniel Street), with potential right turning traffic affecting sightline turning both Daniel Street (45m to the west of the crossing) and turning into the Supervalue Supermarket (10m to the east of the crossing)

(b) Zebra crossing in Featherston (near Birdwood Street), with potential right turning traffic affecting sightline turning into Birdwood Street (7m to the west of the crossing)

(c) Zebra crossing in Greytown (near McMaster Street), with potential right turning traffic affecting sightline turning into McMaster Street (10m to the north of the crossing)

(d) Zebra crossings in Carterton (King Street) with potential right turning traffic affecting sightline turning into King Street (10m to the north of the crossing)

(e) Zebra crossing at Masterton (near Bledisloe Street), with potential right turning traffic affecting sightline turning into Bledisloe Street (15m to the west of the crossing)

(i) Zebra crossing in Masterton (near St Patrick's School), with potential right turning traffic affecting sightline turning into St Patrick's school (10m to the north of the crossing)

(ii) Zebra crossing in Masterton (near Jackson Street), with potential right turning traffic affecting sightline turning into Jackson Street (20m to the south of the crossing)

(iii) Zebra crossing in Masterton (near Perry Street), with potential right turning traffic affecting sightline turning into Perry Street (20m to the south of the crossing)

7.5 In all these situations the driveways / roads are closer that that proposed in the subject site (even before Waka Kotahi moves the zebra crossing as planned).

7.6 I have reviewed the visibility to the zebra crossing in **Attachment B**. I do note that in the current location, a right turning vehicle would partly obscure visibility to oncoming cars however with the new location there is no obstruction. Again, I would stress that this situation occurs throughout the region and New Zealand. I consider that this primary concern is unfounded and/or fully resolved by my assessment and the Proposal.

Pedestrian crossing is well used and in a strategic location and programmed for an upgrade

7.7 While I do not disagree with this comment, in my opinion the entry only vehicle crossing and the upgrade proposed in the Application (including moving the zebra crossing further away from the proposed crossing) do not conflict with each other. Therefore, I do not consider this to be a concern as regards the transport effects of the Proposal.

Conflict cannot be maintained between the proposed crossing (with right turn entry) and pedestrian crossing

7.8 It is unclear the basis of this statement however the traffic modelling indicates a right turn queue length of only one vehicle or less (4.4m or less) while the current separation is around 25m and is proposed to be increased to 40m with the proposed zebra crossing upgrade. As I have shown above this is a common occurrence in the region and New Zealand on State Highways in urban areas. I consider this primary concern fully resolved by my assessment and the Proposal.

Compromising the safety of this pedestrian crossing is not acceptable

7.9 Based on my analysis above I consider the safety of the pedestrian crossing will not be compromised by the new vehicle crossing. I consider this primary concern has been fully resolved by my assessment and the Proposal.

Safety of pedestrians on the footpath navigating the access

7.10 The crossing width has been minimised to the fullest extent possible whilst still retaining adequate width for manoeuvring by the largest truck that needs to access the site, and is only catering for vehicles in one direction (entry).

7.11 The design is also one that provides priority to pedestrians with a continuous footpath through the crossing and the same surfacing as the existing footpath. I have also reviewed all the supermarkets in the area including all six supermarkets in Greytown, Featherston, Carterton or Masterton, and as stated

earlier, confirm that in the last 10 years there have been no crashes involving a pedestrian or a cyclist on any of the supermarket driveways. Of note including in this analysis are:

(a) Six driveways on State Highway 2;

(b) Three driveways within 50m of a zebra crossing;

(c) Seven driveways with 40km/hr speed limit or less;

(d) The majority of driveway on roads in urban locations within shopping areas (including the supermarket itself) and therefore experience moderate to high levels of pedestrian traffic.

7.12 As such I do not consider there to be any inherit safety concerns with these types of driveways. This is further the case in this situation whereby the driveway has been restricted to entry only (as is proposed here) thus removing further conflicts. I consider this traffic concern has been carefully assessed in the TAR and my evidence and the potential safety effects for pedestrians can be adequately mitigated.

Safety of cyclists

7.13 Waka Kotahi comment that cyclists on the inside of a vehicle slowing to turn left into the accessway may not be seen by a right turning vehicle due to a shadowing effect. In this regard any right turning vehicle would need to give way to the left turning vehicle so no conflict would arise. The cyclist may be partly obscured from the left turning vehicle however this is the same situation as all other driveways both in Greytown and New Zealand. I consider the safety of cyclists is not adversely impacted by this proposal. I note the Waka Kotahi upgrade of the pedestrian crossing and associated cyclist facilities will further slow traffic and provide additional cyclist awareness thus further improving cyclist safety.

On street parking loss

7.14 Waka Kotahi have asked for clarification as to the number of parking spaces lost. I can confirm it will be two parking spaces will be removed. I have discussed the loss of on-street parking in my response to the Greytown Heritage Trust later in my evidence. Overall, in my opinion the removal of two on-street spaces will have little effect in overall ability to find a parking space in Greytown.

Accessway separation

7.15 Waka Kotahi notes the proposal does not meet the minimum separation distance in the Planning Policy Manual ("**PPM**"). In this regard:

(a) there are no actual values given in the PPM for a 40km/hr posted speed.

(b) The 160m value quoted in the submission is for road with over 10,000vpd with a 50km/hr posted speed limit. This State Highway carried 9,723vpd in 2022 (North of Wood Street) according to Waka Kotahi traffic counts. So, while near the 10,000vpd it is definitely not a 50km/hr posted speed.

(c) The majority of driveways in the urban areas of Greytown, Featherston, Carterton or Masterton would not meet this 160m separation "desirable" spacing.

7.16 Overall, in my opinion the access separation is both sufficient and appropriate for an urban environment and I consider this primary concern fully resolved by my assessment and the Proposal.

Greytown School

7.17 Greytown School's submission lists a number of traffic related concerns. I comment on each of these as follows:

Sensitivity testing based on incorrect growth

7.18 The school has indicated the growth based on Waka Kotahi data is 18% over the last 5 years. I have reviewed the Waka Kotaki data ID site: 00200908 which is located almost directly outside the site.[1] The results below (taken directly from the website) show traffic has changed from 9,763vpd in 2018 to 9,723vpd in 2022 or actually a reduction of 40 vehicles or 0.4% per year. As such the sensitivity testing of 1% per year is appropriate.

AADT5yearsAgo	AADT4yearsAgo	AADT3yearsAgo	AADT2yearsAgo	AADT1yearAgo
9,763	9,672	8,732	9,998	9,723

1 https://maphub.nzta.govt.nz/public/?appid=31305d4c1c794c1188a87da0d3e85d04

Afternoon peak period

7.19 The school has questioned why an afternoon peak was not surveyed. The afternoon peak was not surveyed in the Commute surveys as typically Supermarkets do not peak at this time and the morning and afternoon peak background traffic is higher. I have however visited the site in the school afternoon peak and have reviewed the Waka Kotahi data during this time. The Waka Kotahi data indicates over the last 12 months the average traffic volume on State Highway 2 of up to 714vph in the morning peak and 762vph in the evening peak while the afternoon school peak ranges from 595vph between 2-3pm and 697vph between 3-4pm. With a lower supermarket traffic generation during this time and a lower through volume on State Highway 2, I consider the delay and queuing will be less at the driveway than the TAR modelling shows.

7.20 I also note that little / no deliveries of trucks occur after lunchtime.

Traffic Volume

7.21 The school considers the traffic generation of the site will increase as a result of the proposal. This is incorrect. The store will be unchanged and still serve the same catchment area. Rather, traffic that is already travelling to the supermarket will be re-distributed to the new access as per the TAR.

Undertaking

7.22 The school is concerned with undertaking right turning vehicles turning into the site. In this regard I would note the queuing assumes there will be no undertaking and thus a worst case for queuing that all through traffic queue behind right turning vehicles.

Safety of Pedestrian crossing

7.23 I note the concern regarding school children using the existing zebra crossing. It is unclear from the submission if the school is aware of Waka Kotahi's plans to upgrade this crossing. In my opinion this will significantly improve the safety of this crossing by raising the crossing and including larger kerb buildouts. This will also increase the separate from the crossing to the proposed driveway to approximately 40m.

Safety of pedestrians / children over proposed crossing

7.24 As I have noted previously, the crossing width has been minimised and is only catering for vehicles in one direction (entry). The design is also one that provides priority to pedestrians. I have also reviewed all the supermarkets in the area including all six supermarkets in Greytown, Featherston, Carterton or Masterton. I can confirm that in the last 10 years there have been no crashes involving a pedestrian or a cyclist on any of the supermarket driveways. As such based on factual data there is no inherit safety concerns with these types of driveways.

Greytown Heritage Trust

7.25 Greytown Heritage Trust's submission lists a number of transport-related concerns. I comment on each of these as follows:

Traffic issues and pedestrians

7.26 The Heritage Trust is concerned regarding the diagrams in the TAR of the large trucks crossing the centreline (when turning left in). Firstly, I note that the intention is no left turning vehicle should need to cross the centreline when entering the site. I do however acknowledge the plans provided in the TAR do show the truck traversing into the southbound lane by approximately 500mm. I have reviewed these and re-run the tracking with a clearer / more up to date 2023 aerial. These are contained in **Attachment A** of my evidence and show the trucks can enter the site without traversing over the centreline.

7.27 The Heritage Trust has also questioned the route the large trucks will take. As I have noted previously to enter the site, large trucks will need to deviate from their existing route and use West Street onto Humphries Street to Main Street (State Highway 2) to access the site. Exiting the site will be unchanged.

Safety issues for pedestrians

7.28 The issues raised by the Heritage Trust are similar to those expressed by Waka Kotahi and the Greytown School which I have address above.

Traffic vs. Pedestrian Safety

7.29 I note the Trust has lobbied for traffic calming along State Highway 2 and thus may be unaware of Waka Kotahi's proposes in regard to the raised zebra crossing in the area. I note the comment regarding heavy vehicles along State Highway 2. In this regard Waka Kotaki's own data suggests up to 20% of traffic

is “heavy” while the Commute survey indicates 10-12% (difference likely due to the way they are classified). In any event the existing road already caters for significant numbers of heavy vehicles.

Parking spaces on-site

7.30 The Trust questions the number of carparks remaining on-site and therefore the change from existing. I can confirm there is a net loss of 5 parks on the site.

Truck operation

7.31 The Trust is concerned with Trucks stopping before the gates to the loading area blocking cars from entering the site. This will be managed by coordinating the opening of the gate ahead of the truck arrival, to prevent delay. The Trust is also concerned with the truck route and the truck crossing the centreline which I have already noted in my response to Greytown School.

Truck blind spots

7.32 The Trust is concerned regarding truck blind spots. While I do not dispute the blind spots of large trucks, I note the diagrams provided relate to travelling along a motorway or similar where cars are travelling in close proximity. In this case the large truck will be entering from the south (left turn in) and when approaching the driveway will be able to observe pedestrians on the footpath before entering the site. I also note that similar situations occur at a number of other supermarkets in the region. As I have noted previously (paragraph 7.11) in the last 10 years there have been no reported crashes involving pedestrians or cyclists on any of these existing driveways.

Onsite vehicle conflicts

7.33 The Trust has made comments regarding internal conflict. In this regard I note:

(a) I have recommended a speed bump be provided within the customer vehicle lane internal to the site to slow vehicles;

(b) All vehicles are travelling in a forwards direction (unlike existing trucks);

(c) There is a gate provided on the exit from the loading area so trucks are required to wait for the gate to open before existing (thus travelling very slowly); and

(d) Visibility to the pedestrian crossing is excellent for both exiting loading vehicles and incoming customer vehicles.

Loss of street parking

7.34 The trust has commented on the loss of on-street parking. From my site visits and from a review of the survey video taken as part of the traffic surveys completed earlier this year (March / April 2023) I note in the immediate area (100m of the Site):

(a) For the Weekday morning, the removal of the two parking spaces will have little effect on parking in the area with a significant number of on-street parking spaces available;

(b) For the Weekday afternoon, the removal of the two parking spaces will have a slightly greater effect than morning in the area however there is still parking available on Main Street (generally 2-3 spaces) and a significant number on Hastwell Street (15-20 spaces) and West Street (over 20 spaces outside the Site);

(c) Saturday lunchtime the removal of the two parking spaces will have the greatest effect. There are typically a small amount (1-2 spaces) available on Main Street (however generally on the opposite / south side of Main Street). There are still some spaces available on Hastwell Street (5-15 spaces) and a significant number on West Street (over 15 spaces outside the site).

(d) Overall, in my opinion the removal of two on-street spaces will have little effect in overall ability to find a parking space in Greytown.

Truck Route

7.35 The Trust has queried the route the large trucks will take. To enter the site, large trucks will need to deviate from their existing route and use West Street onto Humphries Street to Main Street (State Highway 2) to access the site. Existing trucks will use the same route as they currently do.

Greytown Community Board

7.36 Greytown Community Board's submission lists a number of traffic related concerns. I comment on each of these as follows:

(a) Humphries Street. The Community Board is concerned with the left turn out of Humphries Street into Main Street (State Highway 2)

without crossing the centreline going north. As I have noted previously the B-train / Semi-trailer undertaking this manoeuvre would need to do so by crossing into the right turn bay on Main Street but not the southbound through lane which I consider acceptable. This is also already occurring, and I would expect not just in relation to supermarket traffic.

(b) Right turning traffic queuing. The Community Board is concerned with right turning traffic into the new driveway blocking traffic causing queuing. In this regard:

(i) The modelling shows this queuing will be typically 1 vehicle or less.

(ii) Significantly the supermarket already exists. As such the traffic generation also already exists. These right turning vehicles into the site are most likely already turning right from Main Street (State Highway 2) at Hastwell Street. As such these right turning vehicles already exit on Main Street (they move from the busier Hastwell Street intersection to a new driveway).

(c) Loss of parking. I have addressed this issue in the Greytown Heritage Trust comments above.

Greyfriars Motel

7.37 A number of the issues raised by Greyfriars Motel are similar to the issues above. I comment on a few additional issues as follows:

(a) The submission notes that northbound left turning large trucks will still need to wait for an appropriate gap in southbound traffic before turning into the site. This is incorrect. As I have shown previously in my evidence, the large trucks do not need to cross the centreline of Main Street when entering and thus do not need any break at all in southbound traffic to enter the site. I would further note that there is only one larger truck per day undertaking this manoeuvre.

(b) The submission recommends a number of conditions (should consent be granted) including one that states that delivery vehicles should not be allowed to queue on the side of the street outside 134 Main Street while waiting for a vehicle to leave. I completely agree with the sentiment in that under no circumstance should loading

vehicles queue onto Main Street which among other things would block the customer entrance. This can, in my opinion, be contained / stated within a Loading Management Plan condition.

7.38 There are a number of other traffic comments within the submissions. The majority of issues raised I have addressed above. There are however a few remaining issues as follows:

(a) There is extensive discussion in the submission of Mr Lloyd regarding a large truck using the driveway. While I cannot provide advice on driving trucks, I do have considerable experience in designing areas for large trucks including industrial / commercial facilities which require design for large trucks including B-trains. I would also like to note that there will be one large B-train per day and this vehicle will only be turning left into the site.

(b) There are some misconceptions in some submissions regarding the TAR and in particular the traffic generation / distribution which may be a result of reviewing older reports. To be clear, the existing traffic generation (both customer and loading) is not expected to change. The existing traffic will be re-distributed with a reduction on the existing driveways and an increase to the new driveway. The new driveway has been assessed as accommodating 40% of entry traffic using the new driveway (50% in sensitivity). I would note that while not explicitly assessed in the TAR, the proposal will obviously lead to a noticeable reduction in turning movements at the State Highway 2 / Hastwell Street intersection. Supermarket users currently travelling from the south and turning left at this intersection will now be able to enter directly into the supermarket and thus avoiding the intersection and the zebra crossing.

8. CONCLUSION

8.1 On the basis of the assessment / review contained in my evidence, I conclude that:

(a) The proposal will not generate any additional traffic but rather re-distribute some existing traffic to the new driveway;

(b) The proposal will remove an existing safety issue on site by removing the requirement of trucks to reverse within the carpark;

(c) The new driveway has been limited to entry only with large B-train trucks limited through loading management plan to left turns;

(d) The number of trucks using the driveway will be low (5-7 per day) of which only one will be a large B-train;

(e) The traffic modelling (including sensitivity modelling) shows any queuing to be minimal (up to 1 vehicle);

(f) Actual data from other similar supermarket driveways in the region shows no inherent safety concerns and in particular over the last 10 years no reported crashes involving pedestrians or cyclists at these driveways;

(g) The proposal by Waka Kotahi to move and raise the adjacent zebra crossing will only improve safety in the area (including the proposed driveway);

(h) While the proposal will reduce on-street parking supply by two spaces it can be accommodated by on street parking without creating any safety or efficiency issues; and

(i) Overall, in my opinion the additional information I have provided addresses Ms Frasers concerns in the s42a report and / or the remaining concerns are unfounded.

8.2 Accordingly, I conclude that there is no traffic engineering or transport planning reason that would preclude the application as proposed.

Leo Hills

15 September 2023

Revision notes:		
Rev:	Date:	Notes:

Drawn by: JB	Project: Fresh Choice, Greytown Supermarket	Date: 01/09/23	commute TRANSPORTATION CONSULTANTS	Figure: A1
Client: Countdown	Drawing Title: 17.9m Semi Trailer Vehicle Tracking	Scale @ A3: 1:400		
		Revision: D		

AT HPMV 23.0m

mm

First Unit Width	: 2500	Lock to Lock Time	: 6.0
Trailer Width	: 2500	Steering Angle	: 44.7
First Unit Track	: 2500	Articulating Angle	: 70.0
Trailer Track	: 2500		

Revision notes:

Rev:	Date:	Notes:

Drawn by: JB

Client: Countdown

Project: Fresh Choice, Greytown
Supermarket

Drawing Title: 23m truck
Vehicle Tracking

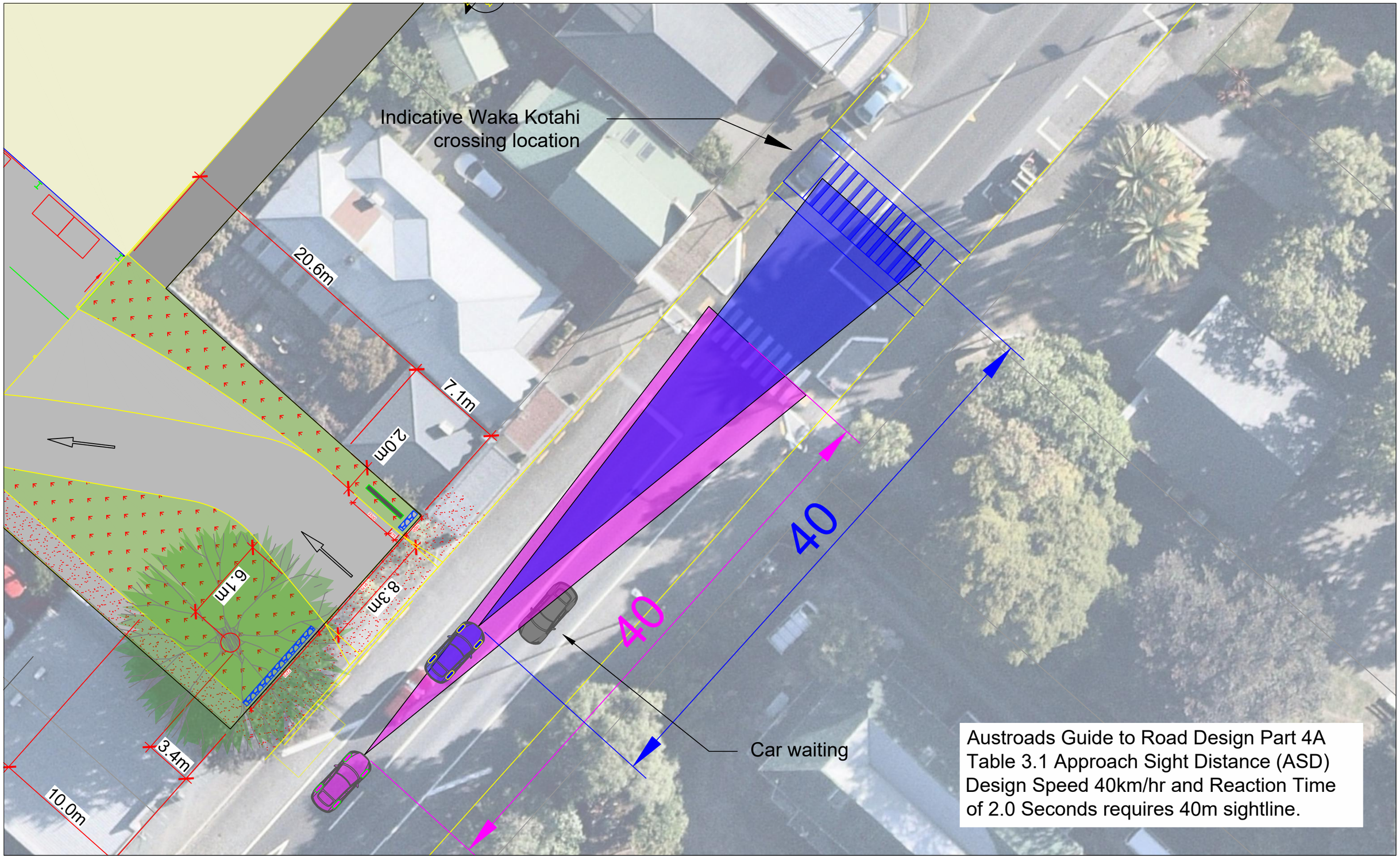
Date: 01/09/23

Scale @ A3: 1:250

Revision: D

commute TRANSPORTATION CONSULTANTS

Figure: A2



Revision notes:		
Rev:	Date:	Notes:

Drawn by: JB

Client: Countdown

Project: Fresh Choice, Greytown
Supermarket

Drawing Title: ASD For Existing and Indicative WK Vehicle Crossings

Date: 01/09/23

Scale @ A3: 1:250

Revision: D

commute TRANSPORTATION CONSULTANTS

Figure: B1