

Rolleston Pak'nSave Resource Consent Application

Outstanding Transportation Matters Response

Prepared for	Foodstuffs South Island Limited
Job Number	FSIL-J085
Revision	A
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1. Introduction

The purpose of this technical note is to respond to the outstanding transportation matters with respect to the Rolleston PAK'n SAVE resource consent application. There are 12 outstanding matters at the time of notification which were highlighted in an email received from Council on 8th April 2022. It is understood that these arise from matters raised through the RFI process which Council's transportation reviewer considers are not fully addressed through the first and second RFI responses prepared by Abley.

Each of the matters is raised in a separate section in this technical note with Abley response. For each matter the original query and RFI response are included as well as a summary of the outstanding concerns in relation to each item. These are taken directly from the email received from Council. The Abley response is then appended to the end of each section.

2. Lowes / Lincoln-Rolleston / Lowes roundabout versus signals

Original query:

The report notes that the Lowes Road / Lincoln Rolleston Road intersection is to be upgraded to traffic signals in 2025-26. Please advise whether funding for this has been confirmed, and hence the reliance that can be placed on this timing. In other words, if the upgrade was to be delayed for several years, what effects would arise at the intersection due to the supermarket?

RFI response:

The roundabout has been modelled at 2024 with the supermarket. Funding is confirmed in the 2021-31 LTP.

Outstanding Concern:

Discussions with Andrew Mazey show that while the scheme is in the LTP, funding may not be forthcoming as early as the applicant hopes. Further, even if funding was provided, it may only be towards the end of this period (2031) which

would mean there would be several years where the roundabout remained in place. As per the original query, what would be the effects of this? One response would be to model the roundabout, with the supermarket, at 2031.

Abley response:

Additional transportation modelling has been undertaken at 2033 without the intersection upgrade in place both with and without the traffic associated with the supermarket application. Intersection delays and level of service are summarised in the following table.

Table 2.1 2033 Levi / Lincoln-Rolleston / Lowes / Masefield Drive intersection modelling results

Road		Baseline					With Development				
		Volume (veh/hr)	AvgDly (sec)	LOS	AppDly (sec)	App LOS	Volume (veh/hr)	AvgDly (sec)	LOS	AppDly (sec)	App LOS
Masefield Drive North	L	114	10	B	11	B	132	32	C	30	C
	T	423	11	B			433	30	C		
	R	45	11	B			39	27	C		
Levi Road East	L	149	38	D	37	D	150	47	D	45	D
	T	329	37	D			313	44	D		
	R	79	39	D			101	45	D		
Lincoln Rolleston Road South	L	95	14	B	14	B	76	20	C	19	B
	T	358	14	B			349	19	B		
	R	82	15	B			132	19	B		
Lowes Road West	L	60	22	C	18	B	53	31	C	33	C
	T	250	17	B			266	35	D		
	R	63	21	C			97	28	C		
Intersection	All	2046			20	C	2140			32	C

There is some increase in delays under the roundabout configuration with average intersection delay increasing from 20 seconds to 32 seconds but remaining at LoS C overall. The worst approach is Levi Road E however this remains at LoS D in the evening peak and has residual capacity for continued future growth. The modelling demonstrates that the supermarket is not reliant on the installation of the proposed signals included within the LTP in the medium-long term.

Should the supermarket open prior to any intersection upgrade, it is confirmed that the intersection in its current form will operate satisfactorily. A concept for the Levi Road frontage has been prepared which is included on page three of the attachment to demonstrate how the development would integrate with Levi Road prior to the intersection upgrade. It is noted that the shared path along Levi Road has been located further to the south within Foodstuffs land (and would be subject to an easement to ensure public access) in anticipation of the future signals and this is a matter to be dealt with in detailed design. It would be plausible to build this facility within the road reserve but seems pragmatic to locate it to futureproof the corridor. Foodstuffs would seek to work closely with Council to ensure the best outcome overall is achieved should this scenario materialise.

Should the supermarket open prior to the intersection upgrade, a pedestrian crossing facility is proposed on Lincoln-Rolleston Road as shown in page three of the attachment to the south of the intersection. This would provide a safe and direct connection between the proposed shared path along the Levi Road frontage and the Lowes Road and Lincoln-Rolleston Road shared paths. Foodstuffs would work closely with Council to determine the most appropriate crossing type and location and the extent to which this should be a temporary or permanent installation. A median refuge would

be expected to be required at this location to provide a two-stage crossing with protection and an appropriate level of storage capacity within the median.

3. Lowes / Lincoln-Rolleston / Lowes layout

Original query:

Regarding the layout of the Levi Road / Lowes Road intersection

RFI response:

Updated plan of the Levi Road frontage provided (*Abley note: in second RFI response*)

Outstanding concern:

The updated plan continues to show that land within the application site is required to form the upgraded Levi Road / Lowes Road intersection. It appears accepted that this is an outcome of the prevailing circumstances but there is still no certainty that the land shown by Abley will be provided by the applicant in order to form the intersection that the application then relies on. One response here would be to be specific in a condition of consent to confirm the applicant is making this land available for the intersection improvement scheme. If not, how can the application rely on an improvement scheme, where the scheme cannot be formed by the Council?

Abley response:

It is reiterated that the supermarket is not reliant on the intersection upgrade however this upgrade is anticipated as it is included within the Selwyn LTP. In the detailed design process for the establishment of Council's intersection upgrade (a process unrelated to the supermarket application as the supermarket is not reliant on the upgrade), Foodstuffs will be happy to discuss this matter directly with Council.

4. Location and extent of footpath

Original query:

Please confirm the location and extent of the footpath that is proposed by the applicant.

RFI response:

A continuous footpath will be provided on the Levi Road frontage within the road reserve until the Levi Road/ Rolleston Lincoln Road intersection is upgraded to signals. At this point if required, a similar width footpath will be provided within the supermarket site between Access C and the intersection due to the lack of road reserve to accommodate the footpath and turning lanes.

Outstanding concern:

"If required" is not a suitable outcome. Please provide a condition of consent specifying exactly what infrastructure is to be provided by the applicant.

Abley response:

The provision of a continuous footpath along both frontages (shared path in the case of Levi Road and footpath only for Lincoln-Rolleston Road) is recommended as a condition of consent. If the provision of this footpath requires Foodstuffs land then an easement (to be agreed between Foodstuffs and Council) is proposed to ensure that the land remains available for pedestrian use.

5. Pedestrian crossing facilities

Original query:

Please advise whether any additional formal pedestrian crossing facilities are justified on either of the frontage roads.

RFI response:

...it is acknowledged that pedestrian crossing facilities in the form of pedestrian refuges may be appropriate...

Outstanding concern:

"may be appropriate" is not a suitable outcome. Please provide a condition of consent specifying exactly what infrastructure is to be provided by the applicant.

Abley response:

The provision of a formal pedestrian crossing prior to the supermarket opening is proposed on Levi Road and on Lincoln-Rolleston Road and indicative locations and forms are included in pages one and two of the attachment to this technical note. The provision of these crossings subject to approval from Council are recommended to be included as conditions of consent. The final design and location of the crossings would be agreed with Council at the appropriate design stage and subject to safety audits to ensure the safety of all road users.

6. Levi Road footpath through the Site

Original query:

The footpath on Levi Road at Access D (main access on Levi Road) is shown as diverting southwards and across a refuge. This means that any pedestrians walking east-west (and not going to the supermarket) will walk outside the road reserve and through part of the site. Please confirm that this is intended (from previous commissions it is understood that this is typically not an acceptable arrangement to developers).

RFI response:

The client has no concerns with pedestrians on Levi Road walking through the site.

Outstanding concern:

Please provide a condition of consent specifying how public access will be ensured

Abley response:

Foodstuffs propose an easement over this portion of the site to enable public access.

7. Weaving on Levi Road

Original query:

Please comment on the road safety effects of the weaving movement between the left-turn exit onto Levi Road and the right-turn lane into Masfield Drive.

RFI response:

No calculation of weaving movement

Outstanding concern:

Matter not addressed.

Abley response:

The left turn out (Access C) is set 65m back from the limit line at the Levi Road signals. As noted in Table 1 of the RFI response the average queue length on this approach during peak hour is 45 metres however at time the queue will extend beyond this access. It is anticipated that under average queueing conditions there is a 20m length for vehicles to turn left into the main traffic stream and then join the back of the right turn queue into Masefield Drive.

At those times when the access is blocked, reverse priority is likely to occur to an extent whereby westbound traffic on Levi Road courteously provide gaps for left turning vehicles from Access C. It is proposed that a right turn bay of only 45 metres be provided (and this is consistent with the modelling presented in the ITA and RFI response) such that at any given time left turners will be required to join the through traffic before having 20m of length to join the right turn lane.

Tracking has been provided to demonstrate the manoeuvre between the Levi Road westernmost exit and the weaving movement across to the right turn lane from Levi Road into Masefield Drive. This is included on page one of the attachment to this technical note.

8. Requirement for auxiliary lanes

Original query:

Please undertake an assessment to identify whether auxiliary turning lanes are required for vehicles turning left or right into the site at each access.

RFI response:

No calculation of warrants has been provided

Outstanding concern:

Matter not addressed

Abley response:

Each access is considered in turn below. For completeness the access references and locations are consistent with those presented in figure 5.1 of the ITA which is reproduced as shown below:



Access A – A right turn bay into the Site is proposed and can be accommodated within the road reserve as shown page two of the attachment.

The warrant for an auxiliary left turn bay has been assessed. The modelled evening peak hour left turn volume is 7 vehicles and major road volume is 563. This is shown in the figure below by the red letter A and does not meet the volumes required for an auxiliary left turn lane.

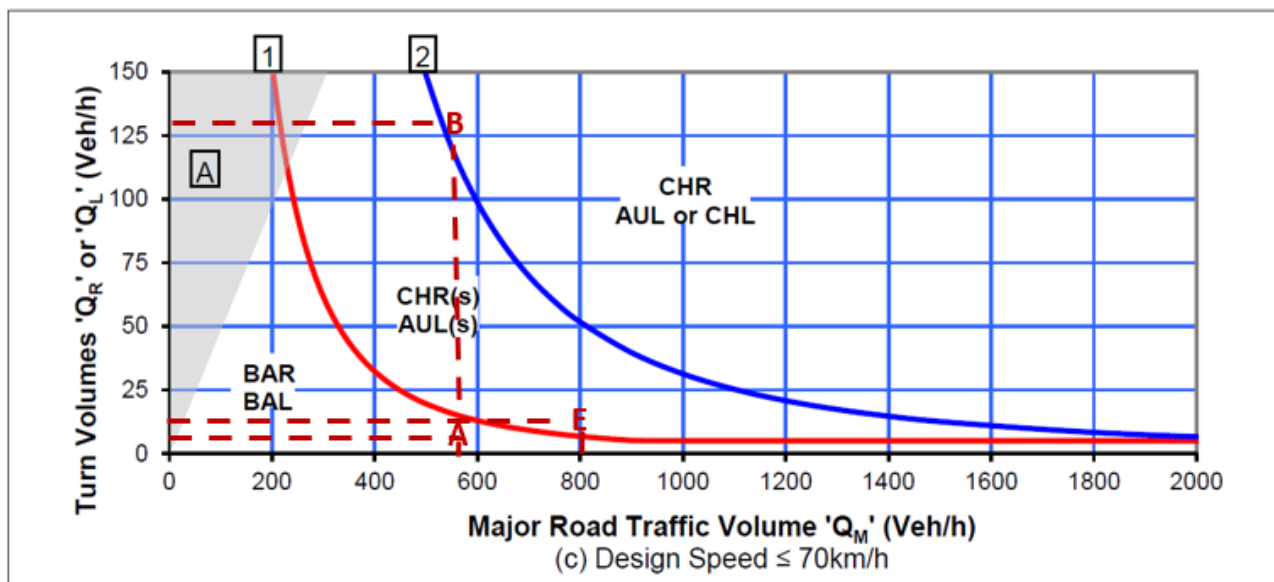
Access B – There is no right turn into the site so the warrant for an auxiliary left turn bay has been assessed. The modelled peak hour left turn volume is 130 vehicles and major road volume is 570. This is shown in the figure below by the red letter B. The warrant is exceeded and a short left turn auxiliary lane is recommended to be included in detailed design for the access. It is confirmed that this can be accommodated within the road reserve as shown on the layout diagram below.

Access C – This is an egress only.

Access D – A left turn lane and right turn lane are both intended at this main access as shown in page one of the attachment. No warrant assessment is required.

Access E - There is no right turn into the site so the warrant for an auxiliary left turn bay has been assessed. The modelled peak hour left turn volume is 14 and major road volume is 806. This is shown in the figure below by the letter E. The warrant is exceeded however noting that the speed environment is much lower than 70 kph and the access is predominantly for service vehicles (there is no signage encouraging use of this access), therefore there is low risk of adverse effects such that an auxiliary left turn lane is required. It is recommended that monitoring be undertaken to confirm that left turning vehicles are not impeding through vehicles during peak hour.

The inclusion of these turning facilities is proposed to be included as part of the application and updated road upgrades are included in the attachment to this technical note for accesses A and B on Lincoln-Rolleston Road (page two of the attachment) and access D on Levi Road (page one of the attachment).



9. Lincoln-Rolleston Road left-in-left-out access

Original query:

Please advise how the left-in/left-out arrangement at Access B be enforced?

RFI response:

A raised median could be installed if customers appear to turn right ignoring the signage. Post-opening monitoring may be appropriate in this instance.

Outstanding concern:

"could" and "may be appropriate" is not a suitable outcome. Please provide a condition of consent specifying exactly what is to be provided by the applicant.

Abley response:

Signage banning right turns is proposed to be installed as part of the application. A monitoring condition is also supported to ensure that right turn movements are not being undertaken. If right turn movements are observed through post-opening monitoring a raised median with appropriate signage is proposed to be installed along Lincoln-Rolleston Road to physically restrict right turn movements. It is recommended that this is captured in a condition of consent.

10. Levi Road vehicle accesses

Original query: Please provide further details regarding the need for three vehicle accesses onto Levi Road, and comment on the benefits for a reduced potential for pedestrian/vehicle conflict by having only two accesses.

Outstanding concern:

Issue was answered however there is a matter arising as follows - does this s92 response change as a result of the shared walking/cycling route now being moved onto the southern side of Levi Road?

Abley response:

The section 92 response remains unchanged as the main drivers behind providing for three accesses is to separate out service vehicles, and to minimise conflicts within the site including with pedestrians and to improve the efficiency of the main access. The shift of the shared path to the south side of the Levi Road corridor does not address these matters and three accesses are still required.

11. Assessment of queuing space

Original query:

Rule E13.1.10.1 (Queuing Space) allows queuing space to be apportioned "in accordance with their potential usage". The calculation shown in the ITA simply divides the queuing space by the number of accesses and therefore has been applied incorrectly. Please revise the assessment of queuing space to take account of the usage of the accesses, as the wording of the Rule requires and comment on any non-compliance that arises.

RFI response:

More detail provided but using incorrect way of apportioning the car parking

Outstanding concern:

Not addressed

Abley response:

The queueing distance has been updated based on apportioning out the number of parking spaces served by each access and the queuing distance requirement recalculated as in the below table.

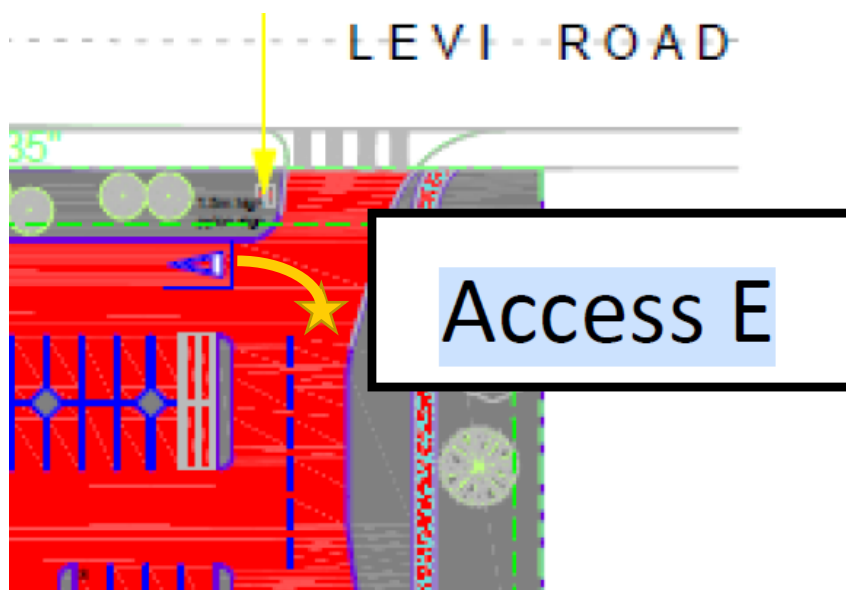
Table 1 Queue length assessment

Access	Access usage	Number of parks served	Queuing distance requirement	Available queuing distance
Access A	35%	181	25.5m	>30m
Access B	17%	88	15.5m	>13m
Access C	5%	26	10.5m	NA (exit only)
Access D	38%	196	25.5m	>30m
Access E	5%	26	10.5m	5m
Total car parks		517		

The queuing distance requirement is met for the three highest volume accesses and is not applicable for access C as this is an exit only. Access E falls short of the minimum queueing distance requirement by 5 metres so is a technical non-compliance on the basis of the queuing space within the site.

In practical terms there are only a limited number of vehicle movements that are likely to occur in the vicinity of the access, and the first point of potential conflict is a vehicle turning right out of the northmost aisle as shown in the diagram below. Based on the likely vehicle path there is an effective queueing space in the order of 10 metres which matches the minimum requirement.

Furthermore, the right turners from the northmost aisle have a marked give way such that they must yield to incoming traffic reducing the likelihood of conflict at this location.



12. Sight distance assessment at Levi Road main access

Original query:

There appears to be signage to the immediate east of Access D. Please confirm that this does not adversely affect sight distances.

RFI response:

Assessment of pedestrian visibility

Outstanding concern:

Query also related to vehicle sight distances - please provide these. There is also a matter arising - does this s92 response change as a result of the shared walking/cycling route now being moved onto the southern side of Levi Road?

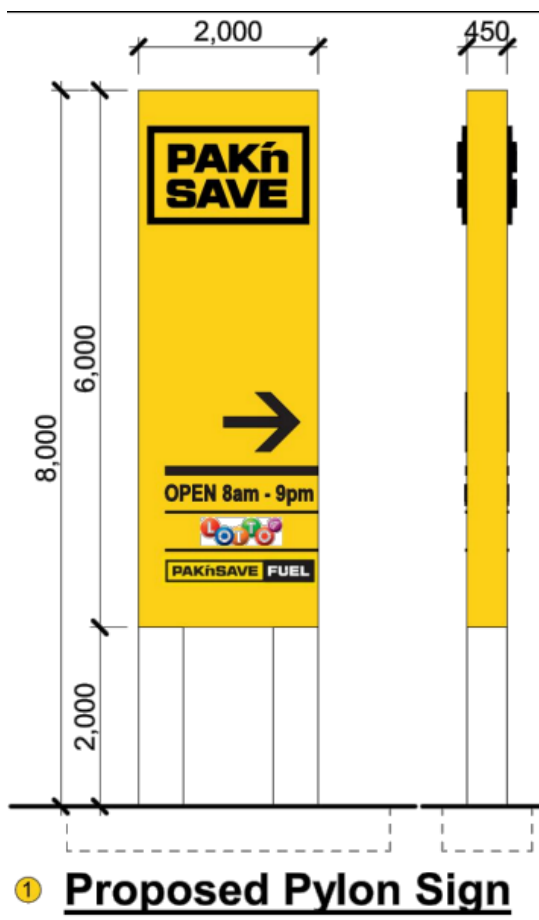
Abley response:

The vehicle sight distance assessment based on *Guide to Road Design Part 4A: Unsignalised and Signalised Intersections* has been undertaken as follows. **Safe intersection sight distance (SSID)** - minimum sight distance which should be provided on the major road at any intersection (Main supermarket access treated as intersection) and **Minimum gap sight distance (MGSD)** for turning traffic based on a critical gap acceptance time of 5s (*Guide to Road Design Part 4A* Table 3.5, page 24) has been calculated.

Based on the existing speed limit of 50km/h (55 km/h operating speed environment) the SSID is 110 metres and the MGSD for a 60km/h operating speed is 83 metres (less for 55 km/h operating speed). The pylon sign slightly overlaps the SSID visibility triangle when measured from 5m from the edge line. However, it should be noted that the bottom two metres of the sign sits on stilts (see below) and does not fully impede intervisibility between vehicles at the access and on Levi Road. If SSID was measured at 3m (minimum set back) from the edge line the pylon sign will not impede visibility at all.

The assessment also demonstrates that the sight distance for left and right turning vehicles measured 3.5m from the edge line comfortably meets the MGSD requirement of 83 metres. Approach sight distance along the supermarket access has not been calculated given the obvious perception of the access intersection.

The assessment of pedestrian visibility remains unchanged with the shared walking/cycling route having been relocated of the south side of Levi Road corridor.



13. Summary of conditions

Arising from the responses to the outstanding transportation issues, the following transport conditions are proposed by Foodstuffs:

- Establish a shared path along the Levi Road frontage and a footpath along the Lincoln-Rolleston Road frontage;
- Subject to approval from Council, provide a formal pedestrian crossing across Levi Road proposed to be located to the east of the main access and across Lincoln-Rolleston Road in line with the main pedestrian desire line from the supermarket;
- Should the supermarket open prior to Council's Levi / Lincoln-Rolleston / Lowes / Masfield Drive intersection upgrade, provide a temporary crossing of Lincoln-Rolleston Road to connect the Levi Road shared path to Lowes Road and Lincoln-Rolleston Road;
- Install signage banning right turns into and out of the Lincoln-Rolleston Road access (access B) and undertake post-opening monitoring to determine any safety issues relating to non-compliant right turning vehicles. Should a safety issue be identified, a raised median with appropriate signage is proposed to be installed along Lincoln-Rolleston Road to physically restrict right turn movements; and
- Undertake monitoring the easternmost access on Levi Road (access E) to confirm that left turning vehicles into the site are not impeding through vehicles during the evening peak hour resulting in safety concerns in the vicinity of the access.