

8 July 2022

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Dear Jane

**RC216016: Foodstuffs South Island (Properties) Limited:
Peer Review of Transportation Assessment and Supplementary Information**

Further to various correspondence, we have reviewed the transportation-related documentation provided in support of the above application by Abley. The reports reviewed are:

- Integrated Transport Assessment Report (ITA) dated 15 December 2021;
- A response to additional information requested (**Transport RFI Response**), dated 18 February 2022;
- A second response to additional information requested (**Second Transport RFI Response**), dated 20 April 2022; and
- A third response to additional information requested (**Outstanding Transportation Matters Response**), dated 14 June 2022, plus attachments.

In addition to the review of these documents, we participated in expert witness conferencing with the Abley traffic engineers on 17 March 2022¹ and have also provided supplementary comments to clarify our formal requests for further information.

We confirm that we have read and reviewed all sections of the reports, but in this letter we have generally only made brief comment on issues where we agree with Abley, and rather, we have focussed on areas of disagreement or where further information is required in order to fully assess effects.

For ease of reference, we have adopted the same numbering and headings as used by Abley in the ITA and have included a response to the supplementary information provided under the same headings (topics) where possible.

ITA Section 1: Introduction

This part of the ITA does not contain any technical information and we have therefore not commented further.

¹ For clarity, Abley provided an indicative plan for the purposes of the conferencing. However the plan is not (and was never intended to be) part of the application, but rather, simply a way of focussing discussions. A plan is however formally provided as part of the June 2022 Technical Note.

ITA Section 2: Existing Site Data

Section 2.1: Site and Locality

This part of the ITA sets out factual information and we have therefore not commented further.

Section 2.2: Zoning

While we agree that the land is zoned as Living Z, we highlight that this area is proposed to be zoned as General Residential within the proposed District Plan. At the time that the ITA was issued, the area was also subject to a private plan change request (PC71) and we understand that this was indicated as being recommended for approval by an Independent Commissioner on 7 June 2022. Due to the timing of this, there is no mention of the effects of the plan change on the proposed supermarket with regard to the ability to give effect to the PC71 Outline Development Plan, nor the increases in traffic on the adjacent roading network that would arise through development of the PC71 area. We note though that the ITA sets out that the presence of development within PC71 would create greater opportunities for non-car travel (and we discuss this below).

We anticipate that the Applicant will take the opportunity to address any relevant matters regarding PC71 at the Hearing.

ITA Section 3: Existing Transport Data

Section 3.1: Frontage Roads

This part of the ITA sets out factual information and we have therefore not commented further. Of relevance however is Abley's comment that Levi Road is "*the main corridor*" between Rolleston town centre and the Weedons interchange on the Christchurch Southern Motorway, indicating its importance in the roading network. We discuss this subsequently, but at this stage highlight that its importance means that any revisions to the road cross-section need to be carefully designed to recognise this.

Section 3.2: Existing Vehicle Flows

Through the Transport RFI Response, Abley clarified that their assessment is based on traffic flows from the transportation model of Rolleston, rather than the vehicle flows set out in this section of the ITA. Rather, the volumes are provided in the ITA were for historical context only (and have not been relied on for purposes of assessment). Use of the modelled flows is appropriate.

Section 3.3: Walking and Cycling Facilities

This part of the ITA sets out factual information and we have therefore not commented further.

Section 3.4: Public Transport Modes and Accessibility

This part of the ITA sets out factual information and we have therefore not commented further.

Section 3.5: Road Safety

At the time that the ITA was produced, the road safety assessment only included the partial records for 2021. As part of our initial review of the ITA, we took the opportunity that had occurred since that time (up to March 2022) and although three further crashes had been reported, these

did not in our view change Abley's conclusions, that no underlying road safety issues were indicated in the immediate area.

We note though that two of the three additional crashes were associated with heavy traffic in the area, suggesting that this part of the road network is under pressure at peak times, and extensive queuing is indicated in the police records.

We expect that Abley will update the crash analysis and provide the latest figures to the hearing.

ITA Section 4: Future Receiving Environment

Section 4.1: Urban Development

In this part of the ITA, Abley notes that the proposed supermarket lies within the area of Outline Development Plan 4. However no further comment is made in the ITA regarding this, nor the ability to give effect to Outline Development Plan 4 and its associated roading network if the supermarket was to proceed. As set out above, subsequent to the ITA, the Commissioner has indicated that PC71 will be recommended for approval, and the plan change also has an associated Outline Development Plan.

We expect that further commentary will be provided regarding the ability to give effect to the PC71 Outline Development Plan at the Hearing.

Section 4.2: Future Public Transport Opportunities

Abley notes that there is the potential for future bus services to operate along Lincoln Rolleston Road, and that if this progresses, it will provide enhanced public transport access to the site. While noting that the services are not yet confirmed, we agree that this would encourage patrons to travel to the supermarket by bus, and we also note that having a large trip generator/attractor such as a supermarket in this location (plus new residential development through PC71) means that this is an increased potential for new bus stops to be provided immediately adjacent to the site. We agree with this.

Section 4.3: Future Transport Infrastructure

In our view, the key issue highlighted by Abley in this part of the ITA is the potential improvement at the Lincoln Rolleston Road / Levi Road roundabout to traffic signals. Abley notes that this is expected to occur in 2025/26. However, discussions with Council's Transportation Asset Manager, Mr Mazey, have identified that while this is intended to occur, there is no certainty around this timing, and it may in practice take place at a later time. We return to this matter subsequently.

ITA Section 5: Proposed Activity

Section 5.1: Overview

This part of the ITA sets out factual information and we have therefore not commented further.

Section 5.2: Access Arrangements

Within this part of the ITA, Abley notes that it is "*recommended*" that the future shared walking/cycling route on Levi Road is located on the northern side. However, this route is now confirmed to be located on the southern side of the road in order to connect to similar facilities to

the east and west, and which also lie on the southern side of the corridor. We consider that this provides a better outcome in terms of providing a continuous route for these road users, and also avoids the need for them to cross Levi Road twice.

In the Outstanding Transportation Matters Response, Abley assesses the need for auxiliary turning bays at the various accesses. This shows that these are required at Accesses A, B and E (and for completeness they are already proposed at Access D). Abley states that the tuning bays will be provided other than at Access E where it is not proposed to provide this. Rather they suggest that monitoring should be carried out to ensure that no safety-related concerns arise from the proposed arrangement, without the bay.

We do not consider that this is an appropriate outcome. Firstly, no proposal has been made to rectify the situation if such safety concerns arise (that is, the monitoring is an end to itself and does not result, say, in a turning lane having to be provided). We also consider that there is a high risk that the number of drivers turning left into this access will be greater than assessed by Abley (that is, more than the expected 14 vehicles in the peak hours) because this is the first access that westbound drivers on Levi Road will encounter. Abley's own modelling shows that at peak times the queue of vehicles at the Lincoln Rolleston Road / Levi Road intersection (both roundabout and future signals) will extend past the main site access, and in our view drivers will therefore turn into the first available access (Access E) rather than joining this queue before turning into the site at Access D.

We discuss the conditions of consent subsequently.

Section 5.3: On-Site Parking

Although the National Policy Statement on Urban Development has removed parking ratios from District Plans, we confirm that the number of spaces provided is adequate for the anticipated demand, meaning that it is extremely unlikely that there will be overflow parking onto adjacent roads and which could adversely affect their safety or efficiency. The dimensions of the parking spaces are appropriate, and the layout includes provision for pedestrian movements.

Section 5.4: Loading Requirements

A loading yard is proposed towards the southeast of the site, and the ITA notes that there will be up to 44 deliveries per day. We note that one-way operation of the accesses is proposed for larger vehicles (with semitrailers limited to entry via Access E and exit via Access A). The matter of tracking curves is discussed below.

ITA Section 6: District Plan Standards Assessment

This part of the ITA is a summary of compliance with the operative District Plan.

We highlight that the exit from the site closest to the Lincoln Rolleston Road / Levi Road roundabout (Access C) scales as 22m from the Levi Road / Beaumont Drive intersection and is therefore non-complying with Rule E13.2.2.1, which has not been identified by Abley (and hence no assessment of effects has been undertaken in the ITA).

We have previously highlighted to Abley that their application of Rule E13.1.10.1 is not correct – the queuing space is not divided by the number of accesses as they have done, but rather, the process is for the number of spaces expected to be served by an access to be found, and this is then applied to find the appropriate queuing space. The assessment of queuing space presented in both the ITA and Transport RFI Response is therefore not correct but has been corrected in the

Outstanding Transportation Matters Response. This shows a slight shortfall in queuing space at Access E (at the northwestern corner of the site). We discuss this subsequently.

The site is noted as having 517 parking spaces. Under Rule 5.5.1.4 this therefore requires the provision of 12 mobility spaces, whereas only 10 are provided. This is an additional non-compliance that has not been addressed by Abley, although in practice we do not consider that there will be any difficulties with providing the appropriate number of spaces.

ITA Section 7: Appraisal of Transport Effects

Section 7.1: Location of Site

We agree with the concept of pass-by traffic at supermarkets comprising up to a third of trips and agree that it is reasonable to apply this to the calculated traffic generation.

Section 7.2: Modelling Methodology

This part of the ITA sets out factual information and we have therefore not commented further.

We agree that the appropriate model to use for assessing the effects of the proposal is the Council's microsimulation model. We also agree that if there is any travel that occurs from Rolleston to Christchurch for the purposes of visiting a supermarket, this is less likely to occur if the proposed supermarket is consented. As such, there may be some slight reduction in traffic volumes on routes further afield.

We agree with the use of the weekday evening peak hour as the appropriate time to assess the transport-related effects of the proposal. In our experience, supermarkets generate peak traffic flows during weekday peak hours and also around mid-day on Saturdays. However as there is no need to travel from work during Saturdays, often the overall busiest time arises during the weekday evenings.

Section 7.3: Baseline Model

A particular aspect of the baseline model is the inclusion of the signalisation of the Lincoln Rolleston Road / Levi Road roundabout, and in order to do this, Abley has devised a notional layout for the purposes of assessing effects (Figure 7.3 of the ITA). This includes on traffic lane for each turning movement (meaning three lanes at each 'stop' line) with filter turns. As shown on Figure 7.3, this means that the kerblines of Masefield Drive and Lowes Road move very close to the edge of the legal road reserve on the northeastern and northwestern quadrants of the signalised intersection, and it appears unlikely that sufficient width remains for a footpath to be provided in these locations. As the Council would not wish to place itself into a position of acquiring additional land, in our view it is unlikely that it would be possible to provide three traffic lanes on the northern and western approaches to the intersection, and rather, just two lanes would be provided. However, no model runs have been included within the documentation that allow for such a revised configuration.

Moreover, as shown within the additional information subsequently provided, an area in the northwestern corner of the application site is required (that is, the southeastern quadrant of the intersection) for the formation of the signalised intersection. While this land is needed for the layout shown, no provision has been made by the applicant to convert this land into road reserve or otherwise provide it to the Council.

Section 7.4: Trip Generation

We agree with Abley's assessment of the likely traffic generation rates for the supermarket, derived in this part of the ITA.

Section 7.5: Trip Distribution

As noted above, we agree with one third of the trips being pass-by trips, with one third being wholly new trips on the network. The remaining third are existing trips that divert, and so while they are not new trips per se, they are new to this part of the network.

We subsequently queried the specific numbers associated with the calculation, in that the ITA says that in the peak hour the supermarket will generate 1,013 vehicle movements and thus there should be a further 675 vehicles on the adjacent roading network. In the Transport RFI Response, Abley advised that only 36% of the trips were expected to pass through the Lincoln Rolleston Road / Levi Road intersection with 19% using routes to the north and 44% using routes to the west and south.

We have calculated that this equates to the following:

- 36% of the trips were expected to pass through the Lincoln Rolleston Road / Levi Road intersection (we calculate that this equates to 243 vehicles, although in the ITA Abley says that it equates to 274 vehicles (top of page 39))
- 170 trips would use Broadlands Drive Extension (south of the site)
- 70 trips would be made using Lincoln Rolleston Road (south)
- 65 trips would be made via the access to ODP 9/10
- 40 trips would be made using Beaumont Drive
- 25 trips would be made using Ruby Drive

However, this makes a total of 613 trips, and hence around 9% of the traffic generation of the site does not appear to have been accounted for (61 vehicle movements).

In the Outstanding Transportation Matters Response, Abley presents an analysis of the Lincoln Rolleston Road / Levi Road roundabout with and without the supermarket in place. When comparing the traffic flows at the intersection, there is a total increase of 94 vehicles arising at the intersection due to the supermarket (2,046 vehicles under 'baseline' and 2,140 vehicles under 'with development' scenario). However in the ITA Abley clearly states "*there are an extra 274 vehicles per hour through the intersection*".

We expect that the difference arises because when the model has added in the additional traffic generated by the supermarket, it has then reassigned 180 vehicles that currently use the intersection onto different routes, which the model assesses to have a shorter travel time. While this is a function of complex traffic models, it does mean that the comments made about the increase in traffic at the Lincoln Rolleston Road / Levi Road intersection need to be viewed with caution.

Section 7.6: Other Transport Modes

We agree with the approach taken in the ITA of calculating trips made by other modes of travel. While this has an inherent degree of uncertainty, typically the capacity of the transportation networks for non-car modes of transport is greater than demand, and we expect that this will remain the case in this instance also. We also highlight that the proposed shared walking/cycling route will have a very high capacity compared to the number of walking and cycling movements.

We note the comment that “*Foodstuffs intend to provide footpaths immediately outside the site on both Levi Road and Lincoln Rolleston Road*” and return to this matter later.

Section 7.7: Intersection Performance

In this part of the ITA, Abley sets out modelling for the Lincoln Rolleston Road / Levi Road intersection, adopting an approach of assessing queues and delays in 2024 assuming that a roundabout is retained and 2033 with traffic signals.

As set out above though, information from the Council is that it is possible that the timing of the traffic signals will be delayed. In the Transport RFI Response, Abley sets out that the proposal is not reliant on the intersection being upgraded, but no assessment was provided of the roundabout remaining in place beyond 2024, and thus the effects on queues and delays was not presented.

This has been addressed in the Outstanding Transport Matters Response, which includes (Table 2.1) a comparison of the performance of the roundabout in 2033 with and without the supermarket. On Masefield Drive and Lowes Road, the increase in delay per vehicle is around 15-19 seconds but the overall delay remains modest. On Levi Road, where the increases are most likely to be evident, the delay per vehicle is just 8 seconds. However we reiterate that this is on the basis that the model has reassigned other vehicles away from the intersection.

As we discussed above, it would appear to be difficult to implement the traffic signal layout shown by Abley in the ITA on at least two of the four approaches, and thus the capacity of these approaches will be less than has been modelled (because fewer approach lanes typically result in greater delays at traffic signals).

In our view then, there is uncertainty regarding the veracity of the results presented for the intersection due to the model having diverted other vehicles, plus the uncertainty around the layout of a signalised intersection. We discuss this in more detail below.

In the Transport RFI Response, Abley provided details of queue lengths at the Lincoln Rolleston Road / Levi Road intersection for both the existing roundabout and traffic signals. This showed that even with three traffic lanes on each approach, an average queue of 43m would arise on Levi Road with a maximum queue length of around 120m. As such, even under the model presented, the maximum westbound queue from the intersection would reach the supermarket access. We recognise that this arises without the supermarket in place, and that the changes associated with the supermarket appear to be modest, but in our view, it suggests that the results will be very sensitive to changes in the layout (such as reducing the number of traffic lanes on certain approaches, as noted above).

We highlight that we sought information regarding the queue lengths for all modelling shown in the ITA, but the Transport RFI Response only provided information about queuing at the Lincoln Rolleston Road / Levi Road intersection. We cannot therefore comment on whether the lengths of the turning bays proposed on Levi Road are sufficient to ensure that the queues at one do not extend to such an extent that they interfere with the operation of the other.

In Transport RFI Response, Abley noted that they had not explicitly modelled any pedestrian or cyclist crossing phases at the Lincoln Rolleston Road / Levi Road intersection. In the event that these are implemented, as seems likely (and noting that areas for pedestrian crossing are shown on Figure 7.3 of the ITA), this requires further evaluation. In particular, either pedestrians would cross each approach in two stages (which requires additional land in order to provide the raised islands for pedestrians to wait) or a specific signal phase is required for pedestrians to have the

'green person' signal (which in turn means that traffic has less green time and hence delays and queue lengths will increase).

Section 7.8: Vehicle Tracking

In addition to the swept paths provided in the ITA, additional swept paths were provided within the Transport RFI Response. This was in response to a query about how delivery vehicles could safely over-run the centreline of the road at the southeastern corner of the site. Abley confirmed that there will be "*restricted access*" in this location, which we anticipate as meaning that there will be no members of the public in this area. We are therefore comfortable with the arrangement, but we stress that if the public is not expected to be present, this roadway could not be extended any further eastwards in future. This is relevant to matters arising from PC71, which appears to show a public roading connection in this location.

Section 7.9: Consideration of Changes in Planning Environment

We agree that the extent of car parking provided will be appropriate (as discussed above) and that if PC71 is recommended for approved (as seems extremely likely), then it will mean that a greater number of people are able to access the supermarket on foot or by cycle. However, part of PC71 shows roading links towards the eastern boundary of the supermarket, and it appears that these could not easily be formed without connecting to the service lane, or by extending the southern east-west route further eastwards (and as noted above, this cannot occur without eliminating the mitigation that Abley has relied upon associated with larger vehicles crossing the centreline).

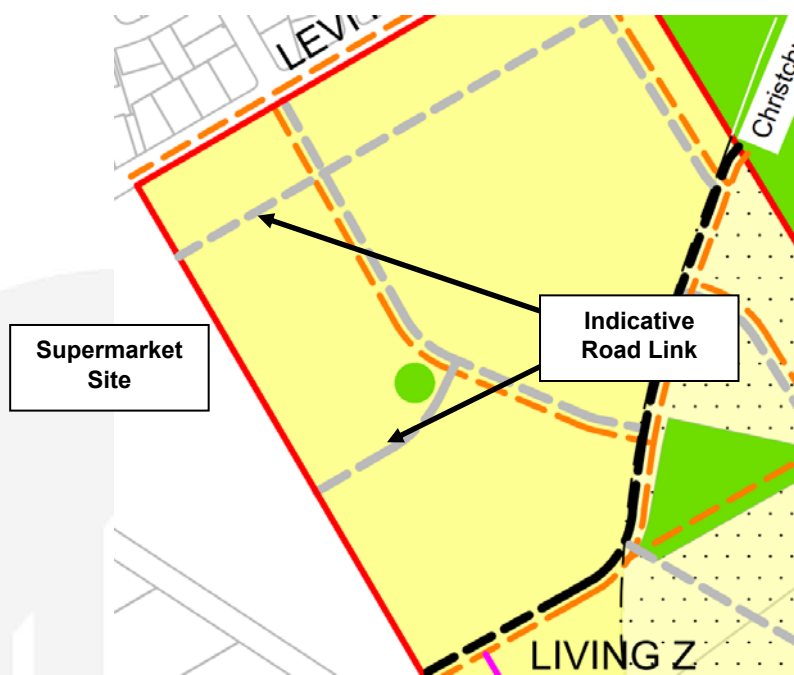


Figure 1: Extract from Plan Change 71 Updated Outline Development Plan

ITA Section 8: Assessment of District Plan Non-Compliances

We consider that there are additional non-compliances with the District Plan that have not been addressed in the ITA.

Section 8.1: Rule 5.3.1.2

Although this Rule specifies that connections are only expected to roads that have the lowest classification in the roading hierarchy, for activities such as major traffic generators, we consider that there are advantages in locating them close to roads that are higher in the hierarchy subject to vehicle crossings being appropriately assessed and designed. Accordingly, we are able to support the non-compliance with this Rule in this case.

Section 8.2: Rule 5.3.1.4

In respect of the number of vehicles expected to be generated by the site, it is evidently more than the threshold of 100 movements anticipated in this Rule. The ITA has been prepared in order to fully address the effects of the additional traffic, and we consider that approach taken is appropriate.

Section 8.3: Rule E13.1.10.1

This Rule specifies the required queuing space at vehicle crossings. The appropriate assessment is set out within the Outstanding Transportation Matters Response, which shows that there is a shortfall at Access E (at the northwestern corner of the site), with 10.5m required and 5m provided. This is based on this access serving 26 of the parking spaces within the site, but in practice, as this is the most convenient route for drivers approaching from the east, we consider that this access will serve a higher number of spaces than this. In our view, the access will serve closer to 50-60 spaces based on travel time to reach those spaces, but we also consider that the queuing space provided in practice is likely to be in the order of 15m. We therefore do not consider that adverse effects associated with queuing space will arise at Access E.

Section 8.3: Rule E13.2.4.2

This Rule limits the number of vehicle crossings to the site. In this regard, the site has three accesses onto Levi Road and two onto Lincoln Rolleston Road.

In the ITA Abley notes that one benefit of the arrangement is that the traffic is spread across different locations and drivers therefore do not have to deviate from their desired route. We highlight though that it means there are three vehicle crossings of a shared walking/cycling route on Levi Road, which creates additional points of conflict compared to a smaller number of accesses.

We have queried the need for the northwestern 'exit only' vehicle crossing (Access C), as it would largely appear to replicate the function of the left-out traffic lane at the main access onto Levi Road. In our view, at this stage, it does not appear that this vehicle crossing is necessary. Moreover, it appears that at peak times, it will not be possible to easily move out of this exit due to the queues of vehicles on Levi Road. We are also concerned that in practice it will be difficult to limit this vehicle crossing to 'left-out' only, and that right-turn movements or even entry movements may also arise. In this regard, Abley proposes that this will solely be controlled by signage whereas in our experience, measures to physically prevent prohibited turning movements are more common.

We agree that there is benefit in separating the movement of delivery vehicles from customers, and therefore agree in principle with two points of access onto each frontage road. However, the northeastern vehicle crossing (Access E) is not only expected to accommodate heavy vehicles but also customer vehicles turning left-in only. It is not clear how the right-turn entry movement will be enforced, and we note that the car park access adjacent to this appears to suggest all turning movements are expected.

Section 8.4: Rule E13.2.4.5

This Rule relates to limiting the width of vehicle crossings, and the ITA notes that all vehicle crossings exceed the expected maximum of 7m. Correctly, Abley identifies that the critical matter relates to safety, although for the Levi Road frontage, both pedestrian and cyclist safety are also relevant. One part of the mitigation related upon for the greater vehicle crossing width is the limitations on turning movements, but as noted above, we are doubtful how this will be achieved / enforced in practice. However, the general approach taken, of separating entry and exit movements and providing an area in-between for pedestrians to wait, is appropriate.

Section 8.5: Rule 10.8.1.3

See our comments under Rule 5.2.1.4.

Section 8.3: Rule 10.9.1.2

This Rule relates to the timing of vehicle movements. However in our experience, the matters in the Rule are amenity rather than traffic-related per se, and we therefore have not addressed this further. However, we note that light-spill into various properties on the northern side of Levi Road may arise during hours of darkness.

Additional Information Provided

In the Second Transport RFI Response, Abley set out a more detailed assessment of the proposed treatment for Levi Road, showing auxiliary turning bays at the main entrance, and signage expected to be provided. Key features of this are:

- A pedestrian refuge, to the east of the main access. We agree that this is a suitable location for the crossing
- Right-turn and left-turn lanes at the main access. We consider that this is appropriate and will avoid through traffic being obstructed by turning vehicles.
- A right-turn bay for vehicles turning into Beaumont Drive. We noted above that no information has been provided on queue lengths and so we cannot confirm that the two right-turn bays will not interfere with one another.
- A site access towards the northeastern corner of the site, which is not expected to accommodate right-turning vehicles. No details have been provided as to how this will be enforced.
- A site access towards the northwestern corner. As noted above this appears to replicate the function of the left-turn lane at the main entrance, as well as creating a point of conflict with pedestrians and cyclists. Moreover, because it is intended for drivers turning left-out only, we consider that drivers will typically be looking towards their right and the direction of approaching vehicles. However the proposed shared walking/cycling route is for two-way traffic, and drivers may fail to look towards their left and exit in conflict with a cyclists or pedestrian.

No detail is provided on this drawing regarding any improvements to Lincoln Rolleston Road.

Conditions of Consent

In the Outstanding Transportation Matters Response, Abley sets out proposed conditions of consent. We appreciate that the wording of these needs refinement and to that end they are not as specific as would usually be expected within a resource consent application. However we comment as follows:

- Shared path along Levi Road frontage and footpath along Lincoln Rolleston Road frontage
 - We agree that this should form a condition of consent, but further detail is required regarding the measures to be put in place. For example, in our experience it would be typical to confirm the width of the paths, whether there will be kerb and channel put in place, and the like.
 - In the attachments to the Outstanding Transportation Matters Response, the formed route on Levi Road is shown is deviating through the application site at the northwestern corner and it is stated that this is a matter where the applicant proposes an easement to achieve this outcome. There is no further mention of how this will be achieved.
- Pedestrian crossing on Levi Road
 - We agree with the intent of this condition of consent
- Provision of a temporary crossing on Lincoln Rolleston Road
 - This is proposed to be installed in the event that the supermarket commences operation prior to the Lincoln Rolleston Road / Levi Road intersection being upgraded to traffic signals (as part of which, pedestrian crossing phases are expected to be provided). We agree that a pedestrian crossing would be beneficial to provide in this location
- Install signage to prevent right-turn movements being made at Access B (onto Lincoln Rolleston Road) and undertake monitoring to show this is being adhered to. Install a raised median if safety issues are seen to arise.
 - While we appreciate the issue which this is intended to address, we consider that further detail is required on the monitoring (how often, over what length of time, how will 'safety issues' be defined, etc). We consider that it might simply be easier to install the median at the outset
- Undertake monitoring at Access E (to confirm that left-turning vehicles are not impeding through traffic in the weekday evening peak hour which result in safety concerns).
 - This condition of consent arises from a left-turn lane being warranted, but which is not proposed to be provided at this stage.
 - The wording of the condition does not set out how 'safety concerns' will be defined, nor what actions are required in the event that safety concerns are seen. There is also no detail on the frequency of monitoring.

Within the ITA it is noted that semitrailers will be restricted to entering via Levi Road and exiting via Lincoln Rolleston Road. The ITA also notes that signage will be put in place to ensure that the staff parking area (near the service yard) is not accessible to the public, and that no obstructions to visibility will be placed within the pedestrian visibility splays at all vehicle crossings. The ITA also notes that roading improvements will be subject to a road safety audit, and that speed roundels showing a maximum speed of 10km/h will be installed on each access (although the Transport RFI Response states 15km/h). We recommend that conditions of consent are put in place for each of these.

Submissions

We have reviewed the submission received on the proposal and have addressed these below. Where the same concern has been raised by several submitter, we have addressed this only once.

Issue raised: The supermarket should only progress if the Lincoln Rolleston Road / Levi Road intersection is signalised

The Applicant's traffic modelling of the effects of the proposed supermarket shows that the traffic associated with the supermarket can be accommodated at the existing roundabout. As noted above though, this depends on a very large diversion of existing traffic away from the roundabout and onto other routes. If the number of diverted journeys is too high, this will result in greater levels of queuing and delay than has been assessed.

Issue raised: Levi Road should be upgraded to handle the additional traffic

The Applicant proposes to widen Levi Road in order to allow for right-turn bays into the main site access and Beaumont Drive, and to accommodate the shared walking/cycling route.

Issue raised: The main site access should be signalised

The volumes at the main site access have been modelled and the delays are modest, under a scenario where the Lincoln Rolleston Road / Levi Road intersection is signalised. Even if the roundabout was to be retained, the traffic flows at the main site access are insufficiently high in our view to justify the access being signalised.

Issue raised: The main access onto Levi Road will create a hazard

We have recommended a condition of consent for a road safety audit, and this will identify any safety-related issues associated with the main site access onto Levi Road.

Issue raised: Congestion on Levi Road will become worse

The Applicant has undertaken traffic modelling of the effects of the proposed supermarket which shows that the traffic associated with the supermarket can be accommodated on the adjacent roading network. As noted above though, the modelling of the Lincoln Rolleston Road / Levi Road intersection being retained as a roundabout shows a very large diversion of existing traffic away from Levi Road once the supermarket is present. The effects of existing traffic flows, plus the supermarket traffic, have therefore not been assessed.

Issue raised: Increased traffic will make it more difficult for residents to exit their driveways

The supermarket will increase traffic and as such, we agree that there will be fewer opportunities for residents to exit their driveways. Conversely, once the Lincoln Rolleston Road / Levi Road intersection is signalised, the signals will create additional gaps for residents, which will offset this.

Both Lincoln Rolleston Road and Levi Road are Arterial Roads under the District Plan roading hierarchy. As Arterial Roads, they are expected to carry higher traffic volumes and accommodate longer-distance journeys. Consequently traffic volumes on the roads could also increase as a result of development further afield, and not just in the local area. As a result, we anticipate that traffic flows on these roads will continue to rise irrespective of the presence (or otherwise) of the supermarket.

Issue raised: The proximity of the site access to Lincoln Rolleston Road / Levi Road intersection and Levi Road / Beaumont Drive intersection will create safety/congestion issues

The Applicant has assessed the matter of the proximity of Access C to the Lincoln Rolleston Road / Levi Road intersection. The modelling shows that the queue of vehicles at the intersection would extend past this access. For this and other reasons, we recommend that Access C is not progressed.

With regard to the Levi Road / Beaumont Drive intersection, the Applicant proposes to form a right-turn bay to enable vehicles to turn right into Beaumont Drive without obstructing vehicles on Levi Road. However no details have been provided of the queue length, to ensure that this does not interfere with the right-turn bay serving the site.

Issue raised: There will be adverse road safety issues at the main site access

The main site access is proposed to be formed as a priority intersection. This has been assessed by the Applicant and only modest delays are expected to arise as shown on Table 7.5 of the ITA. We note that these model results are based on the Lincoln Rolleston Road / Levi Road intersection being signalised. One aspect of the signals is that they will break up the eastbound flow of vehicles on Levi Road and thereby create gaps in the traffic stream which can then be used by drivers turning right out of the supermarket. Without the traffic signals, there will be fewer gaps and thus we would expect that the delays for right-turning vehicles will increase. However in view of the modelling results showing delays of 15 seconds per right-turning vehicle, we do not consider that this is likely to increase to such an extent that the access would not operate satisfactorily.

The main site access will cross the proposed shared walking/cycling route on the southern side of Levi Road. The Applicant has advised that suitable sight distances will be provided between all road users in this location and the inbound and outbound traffic lanes of the access have a raised island provided between them so that crossing movements can take place in two stages.

We have recommended a condition of consent that the safety audit is carried out (as suggested by the Applicant), and this will also specifically look at the safety issues associated with the main site access.

Issue raised: Demand for on-street parking will increase

The concern expressed is that there will be an increase in on-street parking due to staff seeking to find a parking space. However we consider that the amount of parking provided within the site is sufficient for both customers and staff, and we note that the ITA states that staff parking will be specifically marked as such. We also do not consider that there is a need to widen Levi Road to provide for a parking lane, arising from parking demand due to the supermarket.

Issue raised: Additional pedestrian and cycle crossings should be provided at the Lincoln Rolleston Road / Levi Road intersection

The Applicant proposes to install a formal crossing point onto Lincoln Rolleston Road just south of Levi Road to support cyclists and pedestrians crossing the road. When the roundabout is upgraded to traffic signals, we anticipate that formal crossing facilities (pedestrian phases) can be provided.

Issue raised: The cycle path should be extended along Levi Road

The Applicant proposes to extend the cycle path along the southern side of Levi Road.

Issue raised: There will be adverse road safety issues for pedestrians and cyclists

As part of the proposal, the Applicant proposes to install crossing places on Lincoln Rolleston Road and Levi Road, a footpath on Lincoln Rolleston Road and a shared footpath/cyclepath on Levi Road. We consider that these will improve road safety for pedestrians and cyclists.

We have also recommended a condition of consent for a safety audit of the proposed scheme (as suggested by the Applicant). This will specifically consider matters of safety relating to pedestrians and cyclists.

Issue raised: There will be damage to road surface due to additional vehicles

Damage to roads typically arises from the movement of heavy vehicles rather than light vehicles. Although the proposal will generate heavy vehicles, both Lincoln Rolleston Road and Levi Road are Arterial Roads under the District Plan roading hierarchy and therefore routes where heavy vehicles are already expected to be present. The use of these roads for supermarket deliveries is therefore appropriate in our view.

Issue raised: Construction traffic has not been addressed

Although construction traffic has not been specifically addressed, because the building of the supermarket would change the normal conditions of the road, it will be required through the Code of Practice for Temporary Traffic Management (CoPTTM) to put in place a Temporary Traffic Management Plan (TTMP). This has to be approved by the Council before any construction vehicles can use the roads. Provision of a TTMP is a process that occurs separately to the Resource Management Act.

One part of any TTMP is ensuring that the anticipated construction traffic volumes are known and the routes which they can use are specified. It is also able to specify routes that will not be used. Similarly, the timing of the movements of construction traffic can be specified, meaning that such vehicles can be required to avoid (say) the morning or evening peak hour and/or the end of the school day.

Although not strictly necessary, it is possible to include the requirement for a TTMP as a condition of consent.

Discussion on Lincoln Rolleston Road / Levi Road Intersection

At a general level and under a technical approach which does not use a complex transportation model, the way in which the traffic effects of a development such as this would be assessed is through calculating the traffic generation of the proposal and then adding this to the prevailing traffic flows at the intersection. The approach used by Abley, via the transportation model, adds an extra step to this in that the model calculates the delays at the intersection and then reassigns existing traffic away and onto different routes.

By way of example, in terms of specific volumes:

- In 2033, with a roundabout in place and no supermarket, there would be 557 vehicles travelling westbound on Levi Road (Table 2.1, Outstanding Transportation Matters Response);
- The supermarket will generate 274 vehicles passing through the intersection (ITA, page 39). This indicates 137 extra vehicles exiting the site and traveling westbound on Levi Road

- However, with a roundabout retained at the intersection, the increase is shown to be just 7 vehicles (Table 2.1, Outstanding Transportation Matters Response). This arises because when the model has added 137 supermarket trips onto the approach, it has also reallocated 130 other vehicles away from the intersection and onto wholly different routes. This represents 23% of the prevailing traffic flow being diverted away.

In the Outstanding Transportation Matters Response, Abley sets out that their analysis shows that the Lincoln Rolleston Road / Levi Road intersection is not required to be upgraded as part of the supermarket proposal. However this conclusion is based on the modelled increase in traffic flow, which is greatly diminished because it takes into account a reduction in traffic due to the model reallocating other passing traffic to different routes. This is, whereas a simple traffic engineering approach would have added 137 vehicles to the Levi Road westbound approach, the modelling approach adds only 7 vehicles (equivalent to 5% of the generated traffic).

We stress that this approach is not incorrect per se, but is highly dependent on the accuracy of the reallocation. In the Transport RFI Response (page 2) Abley notes that the model is “*considered to provide a realistic and reliable representation of levels of diversion*”. We conclude that they are comfortable that a net increase of 7 vehicles is therefore appropriate. However no specific details of this have been provided to justify such a low net increase.

We are aware that the model has been used on a wide range of projects, by both developers and also the Council. Accordingly, we consider that it can be afforded a high degree of weight. Conversely, if the model has overestimated the extent of diverted trips, we consider it is plausible that queues and delays at the intersection could be considerably greater than forecast. This presents a high risk on a corridor described by Abley as “*the main corridor*” between Rolleston town centre and the Weedons interchange on the Christchurch Southern Motorway.

We stress that this issue largely seems to arise with the intersection retained as a roundabout, and that with signalisation, the amount of traffic that is diverted by the model is much lower (albeit that this modelling is based around an intersection design that appears difficult to achieve without third party land).

With this in mind, we consider that:

- The modelling has not demonstrated that the supermarket can be accommodated with the Lincoln Rolleston Road / Levi Road intersection retained as a roundabout. This is because the extent of diverted trips is very high, meaning that the increase in traffic flows arising from the supermarket is substantially mitigated;
- The modelling has not shown how the supermarket can be accommodated with the Lincoln Rolleston Road / Levi Road intersection being signalised due to being tested with a layout that seems difficult to construct, and without modelling the effects of pedestrian crossing movements.

We further highlight that the main site access has only been assessed assuming that the Lincoln Rolleston Road / Levi Road intersection has been signalised. One aspect of the signals is that they will break up the eastbound flow of vehicles on Levi Road and thereby create gaps in the traffic stream which can then be used by drivers turning right out of the supermarket. Without the traffic signals, there will be fewer gaps and thus we would expect that the delays for right-turning vehicles will increase from those that have been presented in the ITA.

Overall Conclusions

At the current time, we consider that there remain a number of transportation matters outstanding:

- Whether transportation-related effects arise through PC71 that have not yet been identified;
- Whether the model has over-estimated the extent of diverted trips with the Lincoln Rolleston Road / Levi Road intersection retained as a roundabout, and if so, what the effects of this will be, both at the roundabout and also at other intersections along Levi Road;
- How the scheme for the signalisation of the Lincoln Rolleston Road / Levi Road intersection could be constructed without third party land being (or alternatively, the effects of supermarket traffic at a smaller intersection with less capacity);
- A lack of precision around the wording of the conditions of consent which mean that the mitigation proposed is not specific and open to interpretation; and
- How the Council can have certainty regarding the public use of the proposed walking/cycling route at the northwestern corner of the site and around the main access, since it is on the Applicant's land.

In view of this, we are unable to fully identify the transportation effects of the proposal on the adjacent roading network, and consequently, cannot make a robust assessment as to whether these effects will be more than minor or less than minor.

However sufficient detail has been provided such that we recommend that Access C (at the northwestern corner of the site) is not formed. In our view, the adverse road safety effects arising from this will be more than minor due to the access crossing the proposed shared walking/cycling route and the potential for drivers to attempt movements that are not permitted. This conclusion applies irrespective of whether the Lincoln Rolleston Road / Levi Road intersection is retained as a roundabout or is signalised.

Please do not hesitate to contact me if you require anything further or clarification of any issues.

Kind regards

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