APPENDIX 5:

Transport Assessment

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Dear Justine

Proposed Plan Change: Dairy Processing Management Area, Darfield

Further to our various emails and correspondence, we have reviewed the potential traffic and transportation aspects of a proposed plan change for a Dairy Processing Management Area ("*DPMA*") at Darfield.

We understand that the sole access to the proposed DPMA will be via the existing access to the Fonterra milk processing plant on State Highway 73, and our assessment is based on this arrangement.

Background

Several years ago, resource consents were granted for the construction and operation of a milk processing plant approximately 4km northwest of Darfield and on the eastern side of State Highway 73. As part of those consent applications, detailed evaluations of the (then) proposed site access arrangements were undertaken. The analyses that were produced, agreed with NZTA (as the road controlling authority for the highway) and accepted by the independent commissioner hearing the resource consent application culminated in the construction of a large priority intersection on the highway, with auxiliary left-turn-out, left-turn-in and right-turn-in traffic lanes. The auxiliary right-turn lane was constructed to be 52m in length, sufficient for two tanker+trailer units to wait clear of the northbound through-traffic lane.

Figure 1: Current Site Access to Fonterra Darfield Plant

Based on the traffic flows prevailing at the time and expected rates of growth up to the year 2020, this arrangement was considered to be appropriate for volumes of up to 170 vehicles emerging from the site access within a (peak) 30-minute period. A sensitivity test was carried out which

showed that if these volumes were to emerge over a shorter 15-minute period, then this would result in extensive queuing within the site.

Review of Previous Assumptions

Traffic Growth

The initial traffic-related work noted that historic growth on the highway in the vicinity of the site between 1999 and 2008 was in the order of 4% to 5% per annum, and this value was extrapolated to a nominal 'design year' for the access intersection of 2020.

We have reviewed the traffic growth rate between 2008 and 2015 (the most recent year for which data is available), and our assessment is set out below.

Location	1999-2008 Annual Growth	2009-2015 Annual Growth
SH73 west of Springfield	2%	1.1%
SH73 south of Homebush Road	4%	13.7%
SH73 in Darfield (East of Clinton St)	5%	7.6%
SH73 west of Aylesbury	4%	7.8%

Table 1: Comparison of Annual Growth Rates on State Highway 73

The data shows that the growth rate on SH73 south of Homebush Road has dramatically increased since 2009, and that there has also been an increase on the highway west of Aylesbury. Further assessment of the data however shows that these are both attributable to 'step changes' in traffic flows which occurred between 2011 and 2012, and 2014 to 2015. In particular, total traffic volumes south of Homebush Road increased by up to a quarter at this time, with the number of heavy vehicles increasing by up to 125%. In our view, these increases reflect changes in development patterns, including the plant commencing operation, rather than ambient traffic growth on the network.

Road Safety

The road safety history for the past 10 years was reviewed for the area surrounding the plant as part of the previous assessments. This showed that there had been no reported crashes on the section of SH73 fronting the site between Bleak House Road and Homebush Road, and it was concluded that the lack of reported crashes indicated that the surrounding transport network did not have any identifiable road safety issues.

The same area has been reviewed for any accidents occurring between 2011 to the current date. This showed that two accidents have been recorded on this section of road. One occurred in 2011 at the site access itself, when a driver turned right into the site and collided with another vehicle that was travelling southbound on the highway. The other accident took place just south of Bleak House Road, when a driver lost control on part of the highway which had been shingled just prior to resealing. This also occurred in 2011.

Although two accidents have been recorded, we do not consider that this indicates a particular issue or concern on the highway. One driver lost control on a loose road surface, but the timing of this indicates that it was associated with the construction of the site access itself, which is now complete and thus a contributing factor to the accident has been eliminated. The accident involving a turning vehicle is not unexpected given that the presence of the access necessarily introduces the potential for conflict between vehicles. In this regard, we note that no accidents have been recorded in this location since 2011.

Consequently we consider that the previous assumptions regarding the road safety record of the highway remain valid.

Summary and Conclusions

Since the traffic flows remain within the expected parameters, we consider that the intersection will continue to operate with a high level of service provided that the plan change does not give rise to cumulative volumes of more than 170 vehicles emerging from the site in any 30-minute period.

The road safety record does not indicate that there are any existing deficiencies in the immediate area that would be likely to be exacerbated by increased traffic volumes.

On this basis, the proposed plan change can be supported from a traffic and transportation perspective.

I trust that this is of assistance, but please do not hesitate to contact me if you require any further information or clarification of any matter.

Kind regards
Carriageway Consulting Limited

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