In the matter of the Resource Management Act 1991

and

In the matter of an application for Resource Consents by Lumo Digital Limited to construct a digital billboard display at 399 Lincoln Road

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Evidence summary of Axel Downard-Wilke

Senior Traffic Engineer and Transport Planner

for

Christchurch City Council

1 December 2020

Introduction

1. My full name is Axel Peter Carl Downard-Wilke. I hold the position of Director at ViaStrada Limited. I have been in this position since May 2007.

2. I hold a Bachelor of Engineering (Hons) – Civil Eng. (1997) and Master of Engineering (Civil Eng) (2003), both awarded by the University of Canterbury.

3. I have been active as a transport planner and traffic engineer in New Zealand since 1998. My specialisations include sustainable transportation, urban traffic engineering, traffic signals, and road safety. With a nation-wide focus, I have developed (and continue to develop) technical guidance, train my peers (since 2003), and was a member of the 2014 Cycling Safety Panel.

4. I was employed by Christchurch City Council from 1998 to 2005 and have been self-employed since (there are ten staff in our consultancy).

Scope of evidence

5. Our company has prepared a review[1] of the applicant's Integrated Transport Assessment (ITA). Upon receiving the applicant's updated traffic assessment memorandum, we have issued an addendum[2] to our report.

6. Our work was mainly undertaken under my supervision by Megan Gregory, who has been on maternity leave since the end of last week.

7. This evidence is in response to the transport evidence of the applicant prepared by Mr Chris Rossiter.

Turner (2016) report

8. Mr Rossiter states he has undertaken a crash review for a digital sign on the Blenheim Road overbridge that was subject to the monitoring conditions recommended by Turner (2016) and he "found no evidence for an increase in crashes following installation of the sign". Mr Rossiter has not supplied the corresponding data or parameters of this review. As crashes are relatively rare events, it is almost impossible that a statistically significant result could be obtained from a single site.

9. The chart in Figure 1 is provided in response to Mr Rossiter's evidence. It is a tool for estimating crash rates within 95% confidence limits, based on a Poisson statistical distribution. It includes a hypothetical example where the analysis was done for a 4-year period (n=4, i.e. the black dotted lines fourth from the outer line) and revealed an average crash rate of 3.5 crashes per year (the vertical line crossing the x-axis at 3.5). In this

[1] *Lincoln Rd billboard review v02.pdf* issued on 2 June 2020
[2] *Lincoln Rd billboard review - Addendum 1 v03.pdf* issued on 4 November 2020

scenario, the 95% confidence limits for that crash rate has an upper limit of 6 crashes per year, and a lower limit of 2 crashes per year (i.e. where the horizontal lines intercept the n=4 lines at x=3.5). A statistically significant change in crash rate would thus require having more than 6 or less than 2 crashes per year, which is a wide variation to the observed 3.5 crashes per year beforehand. This example shows that it is almost impossible to draw statistically relevant conclusions from crash observations at a single site, as was attempted by Mr Rossiter with the Blenheim Road example. It is therefore necessary to have either a much larger sample of sites or employ a different metric (for example behavioural events which are much more common than crashes).

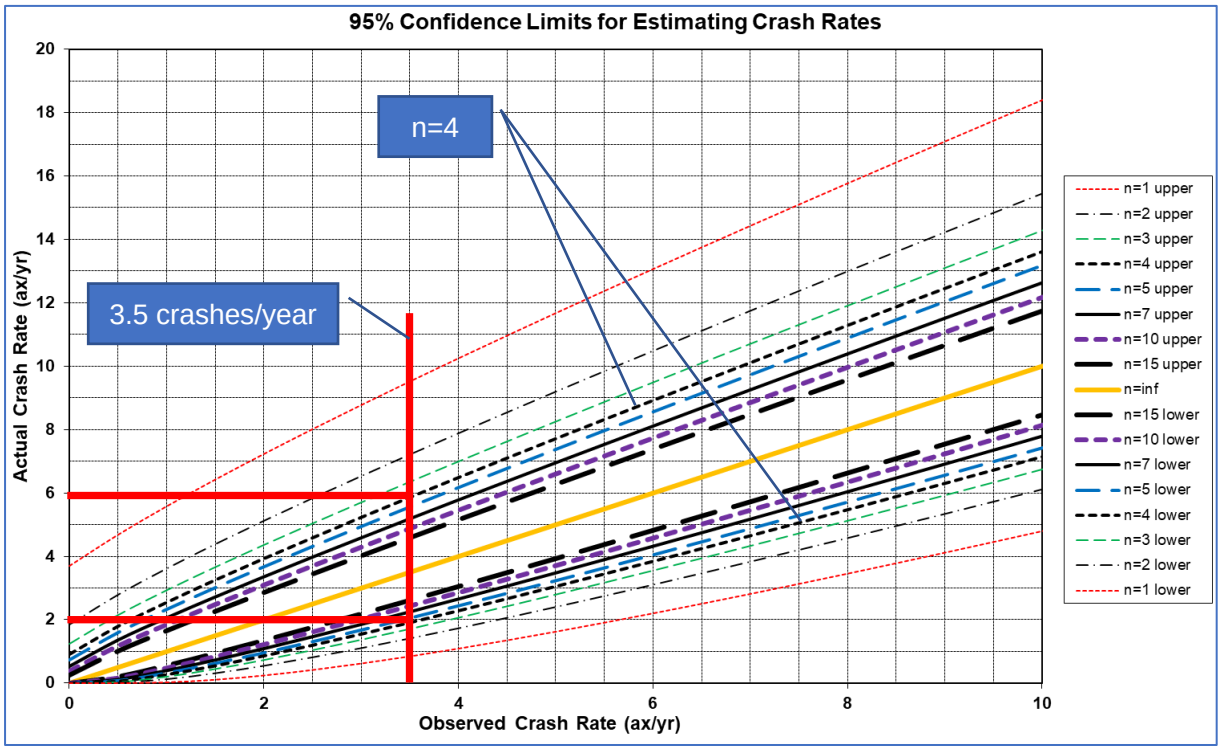

Figure 1: estimating crash rates with 95% confidence limits – example

10. Mr Rossiter later cites a report by Carriageway Consulting Limited which acknowledges that the sample size of 14 sites used in their study was limited. That report's author, Mr Andy Carr, in turn quotes Dr. Shane Turner (i. e. the author of the Turner 2016 report) as saying that "most studies of this type would typically have in excess of 50 sites".

11. Furthermore, Mr Rossiter acknowledges that the Blenheim Road site is a midblock site, with a significant distance between the digital billboard and the closest traffic signals. This makes it very different to placing the billboard within an intersection controlled by traffic signals and therefore should not be considered in comparison to the application site being considered in this hearing, nor should it be considered justification to dismiss the recommendations from Turner (2016).

12. Mr Rossiter suggests that ViaStrada places "considerable reliance" on the 2016 Turner report. I note that Dr. Shane Turner is widely acknowledged to be a leader in road safety

research, both in New Zealand and internationally, especially through serving on the US-based Transport Research Board (TRB) safety research committee.

13. I consider that the onus should be on the Applicant to demonstrate that the adverse effects will be acceptable, and that Council should not be required to undertake a full review of the most current research and the latest guidelines at the time of assessing each application for a digital billboard. I will now respond to the more recent studies Mr Rossiter cites and demonstrate why they do not give cause to disregard Turner's report.

Carriageway Consulting Limited

14. For a previous project, we considered the work undertaken by Andy Carr of Carriageway Consulting Limited; this work is cited by Mr Rossiter.

15. Mr Rossiter states the following:

"*Carriageway Consulting Limited has investigated crash records at 14 signalised intersections in New Zealand with digital billboards located within 50m of an intersection, and in five cases with the billboards located directly behind traffic signal heads. The report notes that both of these factors are commonly mentioned as presenting a particular road safety risk when resource consent applications are made for new digital billboards. While there is a perception that crash rates would rise following the installation of digital billboards, this is not reflected in the crash records and the Carriageway investigation found lower crash rates following the installation. The Carriageway report concluded that there was no evidence that the operation of a digital billboard gives rise to an increase in the number of crashes*."

16. ViaStrada requested from Mr Carr a copy of his analysis and this was provided by him. At a first glance, it may appear that most sites have experienced a decrease in crash rates after the billboard installation. However, due to the billboards being recent installations, there is only 1.2 years on average of data for the period after installation available for each site (with the maximum after period being 2.7 years for the Queen/Wakefield site in Auckland). ViaStrada conducted a chi-squared analysis, which is a type of statistical analysis to determine whether the datasets are independent to one another, on the individual sites, and all sites groups together, and found that the data is insufficient to achieve a statistically significant result with a suitable confidence level. In other words, based on the data analysed for that study, it cannot be concluded that crashes have reduced.

17. This work was undertaken by Mr Carr in 2016. Mr Carr has confirmed to me (bv phone on 27 November 2020) that, due to the short "after-period" for the sites, Mr Carr used CAS data up until the time the analysis was carried out. The problem with such an approach is that it can take anything between 6 days and 6 months for crash data to be entered into CAS. Therefore, any analysis period should normally be based on events at least half a year ago. In this case, many of the crashes that did occur post-installation will

be missing from the analysis. Mr Carr stated to me that he considers that his preliminary work carried out in 2016 should not be used and that subsequent work based on Dr Turner's review is more robust.

Samsa Consulting (2015)

18. The Samsa Consulting (2015) report cited by Mr Rossiter is, in my view, the most useful as it considers driver behaviour, which gives a larger sample of events than a study of crashes, and involves a larger study population (29 participants each exposed to multiple – albeit an unstated number of – advertising signs, including digital billboards).

19. The Samsa study looks at three pre-emptors to crashes: driver fixation, vehicle headways and lateral deviation.

20. The Samsa study does not provide details of the digital billboards included. It mentions that some were "at intersections", but does not state how many, and gives no specifics regarding intersection size, layout, operation or positioning of billboard with respect to traffic signals. The study does not state whether billboards were within drivers' cone of vision (COV) which makes it difficult to compare it with the research cited by Turner (2016).

21. The Samsa study shows that only 2 of the 144 (i.e. 1.4%) of driver eye fixations on digital billboards were above the 0.75s minimum perception-reaction time, and that digital billboards do not have a statistically significant effect on vehicle headway when compared with on-premise advertising. However, the Samsa study did find a statistically significant increase in the average standard deviation of lane position (SDLP) for billboards compared with on-premise signs. This suggests that digital billboards may have some adverse effect on some road safety metrics.

22. The Samsa study also noted that "*Participants may have also only made these longer glances when the driving conditions permitted; for example, when the car was stationary*." – this would increase the chance of drivers waiting at a red signal being distracted by a billboard and making a false start when there is a change in the signals for other movements.

23. Samsa (2015) also notes several limitations, including some seen as particularly relevant to this Application:

23.1 The study did not include a true control condition where no advertising signs were present – rather, the effects of billboards were compared with the effects of on-premise advertising.

23.2 The study did not consider the effects of signage density.

23.3 The study only sampled middle-aged drivers, so the results may not be able to be generalised to younger and older drivers, who may show even greater variability in the driver performance variables.

ARRB (2018)

24. Mr Rossiter cites a 2018 study by the Australian Road Research Board (ARRB). As already noted in ViaStrada's memorandum, this study involved only two intersections, and details of the intersection layout and operation, or the placement of the billboards with respect to the intersections has not been provided.

25. Furthermore, the ARRB study summary includes the caveat: *"It is important to recognise that these results only relate to two specific sites and not to digital billboards generally".*

Mr Rossiter's CAS analysis

26. Mr Rossiter provides a summary of types of driver distraction identified as crash causes in the CAS (Crash Analysis System) database. For a crash to be assigned a driver distraction cause code:

26.1 The reporting police officer should have evidence of this – either by the driver self-reporting it, or some other form of reliable evidence from a witness or recording device.

26.2 The police officer must make some note of this in their report.

26.3 The Waka Kotahi staff member responsible for entering the data into CAS must identify this as a factor.

27. Thus, for a crash where driver distraction was genuinely a factor, there are several possibilities that it would not be coded as such:

27.1 Drivers are less likely to self-report on poor behaviour that leads to a crash, especially if it shows they are responsible for the crash and there could be negative consequences for them.

27.2 Police officers have many details to record, and potentially multiple causal factors to include. Especially in the case of lesser-severity crashes, they may omit some details.

27.3 If distraction was a factor, this must be clear to Waka Kotahi coders, based on the police officer's report.

27.4 There are 344 possible CAS factor codes, of which only 15 are classed as "attention diverted by" – i.e. the distraction codes indicated by Mr Rossiter. For each crash, Waka Kotahi staff can assign multiple causal factors, but it is uncommon that they assign more than 2 or 3.

28. When comparing the rates that the various distraction factors are reported, we should be careful to consider exposure to these factors. For example, most drivers will have a cellphone present in their vehicle throughout the duration of their trip, and therefore have a high rate of exposure to the potential for that becoming a distraction. However, the proportion of a trip where a driver may be exposed to a digital billboard is likely to be much lower. Similarly, drivers are much more likely to encounter other traffic than a digital billboard along their trip.

29. We note that in one third of the cases, the cause of distraction is not recorded.

30. Figure 1 in Mr Rossiter's evidence presents the number of crashes with distraction by advertising or signs as a factor – from 2015 to 2020 the numbers sum to 43 crashes. This does not correlate with the stated 33 crashes in Table 1.

Lincoln Road bus priority project

31. As outlined in ViaStrada's peer review (June 2020), Christchurch City Council proposes to remove the kerbside cycle lane located on the inside of the 45-degree bend negotiated by drivers turning left into Lincoln Road (refer to Figure 2-1).

32. ViaStrada's peer review mentions the issue of drivers cutting into the cycle lane when turning, and that this may happen inadvertently when a driver is distracted. An issue that the peer review does not list is that a semi-trailer turning left from Moorhouse into Lincoln would have to swing wide in order to stay out of the cycle lane (that is, the vehicle would have to go over the centre line into the line of oncoming traffic). The problem is that it is not always possible to swing across the centre line, as right turners out of Lincoln move simultaneously as the left turners into Lincoln during the intersection's C-phase (refer to Figure 2-2 in our peer review). Therefore, very large vehicles must utilise the cycle lane almost to the fender as they otherwise do not fit round this bend (see Figure 2).

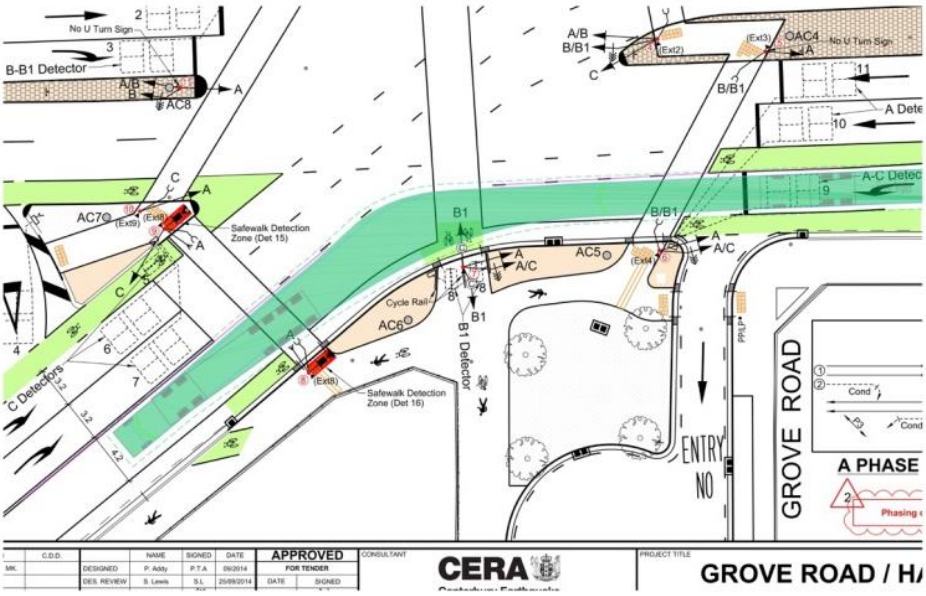

Figure 2: tracking analysis for a semi-trailer

33. It is acknowledged that this situation is not of the Applicant's making. However, truck drivers getting distracted by the billboard may face a higher likelihood of overlooking a person on a bike. Incidents of this type may be infrequent, but should they occur, a fatal outcome is likely, which makes this a moderate issue in the concern assessment rating matrix used for safety auditing.

34. I have been informed by CCC staff that the latest situation with the Lincoln Road bus priority project is that implementation will not be complete until mid-2022 and the project is significantly over budget. To address the budget shortfall, it may be possible that the cycling safety improvements in this location might be cut from the project.

35. Should consent be granted, I recommend that one of the conditions is that the applicant contribute towards establishing the cycle safety improvements in this location, and that the billboard be switched on only after this part of the work has been completed. That said, these improvements will not address other safety concerns that remain.

Summary of ViaStrada evidence

36. Some of the evidence presented by Mr Rossiter does not demonstrate a sound understanding of statistical analysis methods. It is near impossible to draw statistically reliable conclusions from considering crashes at a small number of sites, let alone a single site.

37. Given that Dr Turner is an internationally recognised expert in road safety, we do not consider it appropriate to dismiss his advice.

38. Mr Carr himself has stated to me that his 2016 work is of preliminary nature and that subsequent work based on Dr Turner's review is more robust.

39. The Samsa study is useful, but even this work has many limitations.

40. The caveat that comes with the cited ARRB stufdy is that it relates to two specific sites only, and not to digital billboards generally.

41. The CAS study is heavily influenced by the fact that it almost entirely relies on self-reporting, and drivers have an incentive to not incriminate themselves.

42. An existing road safety issue at the Moorhouse / Lincoln intersection may be exacerbated by truck driver distraction through the proposed billboard. This risk may be removed by mid-2022 through a Council project. Should consent be granted, I recommend that one of the conditions is that the applicant contribute towards establishing the cycle safety improvements in this location, and that the billboard be switched on only after this part of the work has been completed.

43. Overall, our concerns about driver distraction remain, with effects more than minor. We recommend that the Application be declined.

Hearing Statement

Summary of my Urban Design Assessment dated 28 September 2020

The bulk of my report is a review of Mr Knott's visual assessment. I agreed with him on many points, but there are a few areas where we do not agree and I also carried out some additional analysis to help me reach a conclusion.

In my report I found that the points of difference between myself and Mr Knott are as follows:

<u>The Hagley Avenue Shared Path</u>

The main point of difference is that I concluded that the east facing billboard would have high adverse visual effects due to the impact on the Hagley Avenue shared path, for people moving southward through the park.

This is due to the quality of the Hagley Park environment, the size and location of the billboard, the amount of users of the space and their high sensitivity to change, and that people will be walking directly towards the board over some distance. Hagley Park has significant heritage value and is the premier open space of the city. The quality of this space is especially high south of Selwyn Street where there is little traffic noise and cars are not prominent in the view.

<u>Digital Signage</u>

In my report I gave more weight to the increased impacts of digital signage, over equivalent static signage and I outlined issues to do with the way it catches the eye which I consider result in increased visual effects. I will return to this point when I discuss Mr Knott's evidence.

<u>Affected Parties</u>

I found that some residents of 420 Hagley Avenue (with balconies facing the proposed billboard) would be affected by the proposal. Having reviewed Mr Knott's evidence I agree that there are only two apartments with direct views.

<u>Cumulative Effects</u>

I considered that there would be cumulative effects, in conjunction with other digital signage, when viewed from the east or west on Moorhouse Avenue, due to the amount of prominent LED signage on the approach to the intersection.

Richard Knott's Statement of Evidence dated 12 November 2020

I have read Mr Knott's statement of evidence and I have the following comments:

<u>Presentation of Images</u>

Mr Knott has queried some of the images I have used so I think it's worth just clarifying what I have done in my assessment.

In my report I have used images based on photographs taken with a 28mm lens from a Samsung phone. The disadvantage with such a lens is that it distorts the image principally by exaggerating the foreground. As Council staff, this is a conversation we often have with applicants and we do encourage them to use an SLR camera with a 50mm lens, although we do not usually insist on this. In order to reduce the distortion and provide images that can be interpreted at a normal reading

distance, I have cropped the foreground out of the images so that they are easier to view and more closely resemble the view on site.

Note that I have not provided any images as visual simulations as I was able to consider the images provided by the applicant, which are of an appropriate standard. It is worth noting that these are taken with a 28mm lens - which requires that they should be printed at A3 and read at 315mm distance on site.

Whilst I agree that they are accurate, I would not choose to present information in this way for two reasons: the first is that it is somewhat impractical - it is hard to read the image in the context of the background because you have to hold the image quite close to your face. The second is that the foreground can appear more prominent. It is for this reason that I have presented my information in a different manner to Mr Knott – because I consider it is easier to interpret. But the key to using visualisations is to go on site with them and make sure they are correct.

I have deliberately used relatively bright colours for the board in my images – I limited capacity at my disposal and I have coloured the image pixel by pixel so that's why I have used just one colour. As council staff we don't have a lot of resources for images which is why we rely on the applicant to provide them in the first instance. I would note that the submitted images use less visible colours, including black which are likely to reduce the prominence of the board. It is the case that the board will show a variety of images and I think it useful that both extremes are being provided.

Affected Parties

I have studied the diagrams provided by Mr Knott and I agree that it would be the two identified apartments that would have a view of the billboard, on the building identified as B. My opinion on the degree of effect for the occupiers is otherwise unchanged.

Table

Mr Knott is correct that there is an error in the summary table of my evidence, in that the impact for the sign should be "low", for the reasons set out in the description. In this, myself and Mr Knott are therefore in agreement. Whilst the sensitivity of pedestrians is high, the surrounding environment is compromised by traffic and the quality of the backdrop. The amended table is presented below:

Distance	**Quality of the Surroundings**	**Sensitivity of Users**	**Extent of Change**	**Visual Impact**
700m	High	High	Low	Negligible
450m	High	High	Low	Low
300m	Very High	High	Medium	Moderate
220m	Very High	High	High	High
150m	Very High	High	High	High
50m	Low	High	Low	Low

The Impact of a Dissolve

Mr Knott relies on the use of the dissolve as full mitigation for the effects of transitions. It would be useful to have some more evidence or reasoning for this, but at the moment the impact of this measure has not been quantified or described.

I would observe that such a measure would soften the impacts, but I cannot conclude that it would remove them – the motion is still present, but slower. It is less sudden, and I do think less impactful as a result, but it is still perceptible, and the increase in duration also may be eye-catching in its own right, as the effect unfolds slowly.

My observation is that such a transition is less perceptible in peripheral vision, but that it still draws the eye when seen more centrally. I am not able to change my opinion on the basis of what has been provided so far.

Christchurch City Council's reporting officer's comments for the hearing of RMA/2020/702 - establish and operate two digital billboards at 399 Lincoln Road, Addington

Matters raised in evidence

Applicant's evidence

1. In paragraph 12 of Mr Scheele's Statement of Evidence he discusses the permitted baseline. There is no disagreement regarding the maximum number (four, with the two displays on each structure joined at the apex and not separated by an angle greater than 30 degrees) or combined area (72m² (18m² x 4)) of digital billboards permitted on the site; albeit setback a compliant distance from the signalised intersection. However, I would like to clarify that whilst the District Plan does not require minimum separation distances between billboards on this site, that it has yet to be demonstrated by the Applicant how two billboards could be situated side-by-side and facing in the same directions as that proposed given the current configuration of the site, including that consented under RMA/2020/392[1]. It is likely that the billboards would have to be situated on either side of the site along the Moorhouse Avenue and Lincoln Road frontages, or behind one another along the same frontage, as illustrated in the Applicant's permitted baseline drawings. I note that the billboard structures would not be allowed to overhang the road boundary without Council's prior approval.

2. Further to the above, in paragraph 14 of Mr Scheele's evidence he states that *there are no rules in the District Plan that seek to control or protect views of Hagley Park to external surrounding activities*. I agree that one or two digital billboards could be situated opposite Hagley Park as a permitted activity (outside of the 50m setback from the signalised intersection, and subject to compliance with the other applicable activity specific standards). However, it should be noted that there are provisions in the District Plan which recognise Hagley Park as being sensitive to the effects of signage. Furthermore, it has yet to be demonstrated by the Applicant that these permitted billboards would be visible within the same catchment as that proposed. This is discussed further below.

3. In paragraph 31 of Mr Scheele's evidence he states that, *within Hagley Park South, heritage protected areas are limited to the Cricket Pavilion and surrounding setting located adjacent to Riccarton Avenue (separated from the digital billboards by approximately 500 metres)*. I would like to clarify that Hagley Park is itself listed as a 'highly significant' heritage item (number: 1395) under Appendix 9.3.7.2.

4. I address Mr Scheele's objectives and policies assessment in paragraphs 43-49 of his evidence later on.

5. In paragraphs 61-71 of Mr Scheele's evidence he comments on some of the recommended conditions included in Council's Section 42A report. I provide responses to these comments below.
    a. I agree with Mr Scheele that reference to the Advertising Standards Authority Advertising Code of Practice and the Broadcasting Act 1989 could be an advice note. This goes the same for NZTA's Traffic Control Devices Manual (Part 3, Advertising Signs).
    c. This condition has come from previous reports on digital billboards. My understanding is that its intent is to prevent the sequencing of two or more consecutive advertisements (from the same advertiser) as that would increase glance frequency.

[1] Consent granted 10 June 2020 for service station activity (to be operated by Gull NZ Ltd on a self-serve format).

h. Rule 6.3.4.1 P1 requires that *outdoor lighting* (as it relates to light glare) *shall not result in a greater than 2.5 lux spill (horizontal or vertical) into any part of* an arterial road *where this would cause driver distraction*. I agree with Mr Scheele that, in accordance with Rule 6.3.6(a), that compliance with the light spill standards should be measured 2m within the boundary of any adjacent site. However, the lux spill amount should be 4.0 as it relates to that part of the Transport Zone that adjoins Hagley Park (see Rule 6.3.5.1 P1(a)(ii)[2] and Table 6.3.6.1(xvii)[3]).
l. I agree that this condition could be removed.
m. As Mr Scheele's reworded version of the condition conforms to that originally proposed (specifically part ii.) I have no issue with this change.

Summary of Council evidence

6. The Applicant, Lumo Digital Limited, seeks land use consent to establish and operate two digital billboards, each 29.2m² (9.9m x 2.95m) in size, at 399 Lincoln Road.

7. The application was received on 2 April 2020. Following receipt of preliminary feedback from Council staff, including that the adverse traffic safety and efficiency effects were considered to be more than minor on the environment and that there were visual amenity effects related concerns associated with Hagley Park, the Hagley Avenue apartment building, and in an overall cumulative sense, the Applicant requested that the application be publicly notified under section 95A(3)(a) of the Act. The application was publicly notified on Monday 7 September 2020. The submission period closed 2 October 2020. A total of 12 submissions were received - four in support, seven in opposition and one neutral. The submissions in support can be summarised as:
    - The proposal will create jobs; and
    - The proposal will have "no effect" on Gull NZ Ltd's business operating on the same site.

    The submissions in opposition can be summarised as:
    - Traffic safety and efficiency - driver distraction;
    - Visual amenity; and
    - Impacts on neighbouring property - as viewed from Hagley Park and the Hagley Avenue apartment building.

    The submission which did not state a position contained no content.

8. The surrounding area is characterised by a mixture of activities and resulting amenity. As mentioned previously, Hagley Park is listed as a 'highly significant' heritage item in the District Plan. Policy 18.2.2.1 explains that Hagley Park has *important heritage values, botanical, educational, cultural and/or recreational values and provides for entertainment*. Hagley Park is considered to be one of (if not the most) important public spaces in Christchurch City. Along Hagley Avenue activities are predominantly residential and high amenity in nature. Hagley Avenue itself carries a relatively low number of traffic movements. To the south of Memorial Avenue activities are predominantly commercial and industrial in nature. Memorial Avenue contains six traffic lanes at some points and carries a high volume of traffic[4]. In addition, the area contains a lot of signage and little vegetation. Combined, these contribute towards an overall low standard of amenity.

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[2] *where the light from an activity spills onto another site in a zone with a more restrictive standard, the more restrictive standard shall apply to any light spill received at that site*.

[3] *Activities in the Transport Zone must meet the standards for the zones in which the adjacent sites are located.*

[4] According to Council's traffic counts database, Grove / Hagley / Lincoln / Moorhouse intersection is one of the top 20 busiest intersections in Christchurch.

9. Three existing digital billboards are located in close proximity to the application site, including: a 32m² double-sided billboard at 60 Grove Road (RMA/2015/3596), a 32m² single-sided billboard at 420 Hagley Avenue (RMA/2020/211), and an 18m² double-sided billboard at 26 Moorhouse Avenue (RMA/2018/1859).

10. A resource consent application was recently granted for the establishment of a service station activity on the site, to be operated by Gull NZ Ltd. The site is currently under construction. Signage was proposed as part of this application, including two new pylon signs which feature digital fuel pricing displays. The applicant and Gull NZ have confirmed that the digital billboards as is proposed in the application will not interfere with the operation of the consented service station activity.

11. With respect to the relevant planning framework, the proposal does not comply with Rule 6.8.4.1.1 P15 as the digital billboards will each be greater than 18m² in area and as they will be located less than 50m from a signalised intersection. Non-compliance with P15 triggers Rule 6.8.4.1.3 RD3. The overall activity status is restricted discretionary. The matters of discretion relevant to RD3 are contained in Rule 6.8.5.3 (Static and digital billboards). As relevant to digital billboards, they generally consider whether the proposal will have impacts on the character and amenity of the surrounding area. They recognise that large areas or numbers of billboards, including in combination with existing signage, will exacerbate these impacts, particularly in terms of potential visual clutter. They recognise that billboards can enliven spaces (where relevant) and result in orderly/coordinated displays, and that impacts can be lessened as a result of responsive operational parameters. Lastly, and importantly, they recognise that digital billboards have the *potential to cause distraction or confusion to motorists*.

12. I have discussed the permitted baseline previously.

13. With respect to traffic effects, the application was accompanied by a traffic report prepared by Mr Rossiter from Stantec. This report, including subsequent amendments, was peer reviewed by ViaStrada on behalf of Council. The content of these assessments has been addressed previously. The key points can be summarised as follows:
    - The District Plan recognises that digital billboards have the *potential to cause distraction or confusion to motorists* (6.8.5.3(e)(v)).
    - There is a crash history associated with the Moorhouse Avenue / Lincoln Road intersection; albeit not associated with digital billboards, as has been recorded in the NZTA's Crash Analysis System (CAS).
    - The proposed east-facing billboard will, at least, partially obscure key traffic signals[5] from the Moorhouse Avenue westbound approach. The impact of this is different for light and heavy vehicle drivers.
    - Notwithstanding, the above, Turner (2016) recommends that signs *located close to key decision points (e.g. intersections should be located outside the cone of vision*. Both proposed billboards will be located in the cone of vision from multiple approaches to the intersection.
    - Mr Rossiter explains that various research on the matter, including that undertaken by Carriageway Consulting, ARRB and Samsa Consulting (2015), demonstrates that digital billboards at intersections have not been found to cause adverse traffic safety or efficiency effects. He considers this to be reflected in NZTA's CAS records.
    - On review of this research and Mr Rossiter's analysis of CAS records, ViaStrada have found that the findings which Mr Rossiter has relied upon cannot be used as a reasonable basis for demonstrating that the potential adverse traffic safety and efficiency effects are acceptable. This is mainly due to small sample sizes and comparability with the proposal. With respect to CAS records, ViaStrada highlight

[5] Advance Primary and Primary traffic signals on Moorhouse Avenue westbound approach.

that these are heavily influenced by self-reporting, of which drivers involved have an incentive to not admit fault.

14. ViaStrada conclude that, overall, the adverse traffic safety and efficiency effects are expected to be more than minor. I rely upon ViaStrada's specialist advice and accordingly find these effects to be more than minor and potentially significant on the environment.

15. With respect to character and amenity effects, the application was accompanied by an urban design report prepared by Mr Knott. This report, including subsequent amendments, was peer reviewed by Mr Hattam, Urban Designer at Council. The content of these assessments has been addressed previously. The key points can be summarised as follows:
    - The District Plan recognises that *signage collectively contributes to Christchurch's vitality* by: supporting business, infrastructure and community activities; maintaining public safety; and enhancing character and amenity values. The District Plan also recognises that signage, particularly which is of a large size or number, can detract from character and amenity values, particularly in sensitive locations.
    - The scales which Mr Knott and Mr Hattam have used for their visual effects assessments are comparable. Mr Hattam has used the seven point scale provided by NZILA. I note that recent case law[6] has established that a "moderate" visual amenity effect on the NZILA scale corresponds to a "more than minor" effect in terms of the terminology used in the Act.
    - Mr Knott considers the visual effects of the proposal to be between a Low to Negligible impact depending on where the billboards are being viewed from and at what distance. Mr Knott considers that the proposed billboards will not appear out of place or out of scale within the commercial/industrial context and the surrounding built environment. This includes views from Hagley Park and the Hagley Avenue apartment building.
    - Mr Hattam is in general agreeance with Mr Knott on the scale of visual effects, except with respect to Hagley Park and occupants of the Hagley Avenue apartment building. Mr Hattam considers the impact on Hagley Park users to be Moderate. I note my previous comments regarding a Moderate impact on the NZILA scale equating to a more than minor RMA effect. This is due to the high quality of the Hagley Park environment at certain points along the shared path which adjoins Hagley Avenue. He considers that the proposed east-facing billboard terminating this view corridor is not an outcome anticipated by the District Plan and that which will have a more than minor adverse character and amenity effect. This line of thinking is consistent with respect the Hagley Avenue apartment building, although the permitted baseline lessens the associated adverse effects.
    - With respect to potential cumulative effects, Mr Hattam considers the proposal to result in, at most, a Moderate impact, noting what the permitted baseline allows for.

16. Mr Hattam concludes, overall, that the proposal is expected to have a Moderate to High visual impact, particularly as it relates to Hagley Park. I rely upon Mr Hattam's specialist advice and accordingly find the character and amenity effects of the proposal to be more than minor on the environment.

17. With respect to objectives and policies, as above, I agree with Mr Scheele that Objective 6.8.2.1, read in isolation, is generally enabling of signage, specifically in appropriate locations. However, I consider that this must be read in conjunction with the supporting policies. Policy 6.8.2.1.2 seeks to ensure that the character and amenity values of sensitive locations are protected from adverse visual and amenity effects from large areas or numbers of signs. I do not share Mr Scheele's views regarding Policy 6.8.2.1.2 (and therefore Policy 6.8.2.1.3) only applying to signage of the nature proposed within residential, open space or rural zones. This is because Policies 6.8.2.1.3 and 6.8.2.1.6 specifically seek to ensure and limit signage where

[6] *Trilane Industries vs Queenstown Lakes District Council* (2020).

it detracts from the surrounding area and public realm, and where it is not compatible with the surrounding environment. On ViaStrada and Mr Hattam's advice, I conclude that the proposal will be contrary to the relevant objectives and policies.

18. I have appended a list of recommended conditions if the Commissioner is mindful to grant. I note that these are not considered sufficient to address the abovementioned concerns.