Before the Hearings Panel At Waimakariri District Council

Under	Schedule 1 of the Resource Management Act 1991
In the matter of	the Proposed Waimakariri District Plan
Between	Various
	Submitters
And	Waimakariri District Council

Council Officer's Preliminary Response to written questions on Signs chapter on behalf of Waimakariri District Council

Date: 22 August 2023

INTRODUCTION:

- 1 My full name is Shelley Catherine Milosavljevic. I am employed as a Senior Policy Planner at the Waimakariri District Council.
- 2 The purpose of this document is to respond to the list of questions published from the Hearings Panel in response to my s42 report¹ for the Signs chapter.
- 3 In preparing these responses, I note that I have not had the benefit of hearing evidence presented to the panel at the hearing. For this reason, my response to the questions may alter through the course of the hearing and after consideration of any additional matters raised.
- 4 I also note that given the timing of these questions, my preliminary responses in some instances have not been informed by consideration of evidence or legal submissions lodged with the Council following the issuing of my s42A report. Where I have considered such evidence, I have recorded this within the preliminary answers below.
- 5 Some questions below were directed to Mr Hugh Nicholson Urban Designer and Director of UrbanShift, and Shane Binder - Senior Transportation Engineer at Waimakariri District Council and they have responded accordingly. I have also requested Mr Nicholson and Mr Binder provide a response to some questions directed at myself where the question relates to their area of expertise which I relied on their expert input.

¹ <u>https://www.waimakariri.govt.nz/__data/assets/pdf_file/0025/139255/11.-STREAM-5-</u> <u>FINAL-SIGNS-S42A-SECTION-42A-OFFICERS-REPORT-SIGN-CHAPTER-PROPOSED-DISTRICT-</u> <u>PLAN-21-AUGUST-2023.PDF</u>

- 6 Following the conclusion of this hearing, a final right of reply document will be prepared outlining any changes to my recommendations as a result of evidence presented at the hearing, and a complete set of any additions or amendments relevant to the matters covered in my s42A report.
- 7 The format of these responses in the table below follows the format of questions identified in within the Commissioner's minute.
- 8 I am authorised to provide this evidence on behalf of the District Council.

Date: 22 August 2023

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s42A report	Hearings Panel question	
paragraph		
reference		
s42A Officer's preliminary response pre-hearing		
Para 111	For Mr Nicholson - Is there any evidential/research basis that has informed your view that	
	the information displayed has different associative and perceptual values to an on-site sign	
	which results in landscape and amenity effects - such that a different (and much stricter)	
	rule regime is warranted for off-site signs in Industrial and Commercial zones specifically?	
	(And please clarify what are the 'distinct difference between on-site and off-site signage'	
	you refer to in paragraph 5.7.)	
Response from Mr Nicholson:		
My analysis is based on Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines		
prepared by the New Zealand Institute of Landscape Architects ² . Current professional practice considers		
landscapes, including towns and human structures such as signs, to have physical, associative and		
perceptual dimensions.		
The physical dimension includes both natural and human features. Signs are human structures and in		
general there is no difference between the physical construction of on-site or off-site sign.		
The associative dimension refers to "intangible things that influence how places are perceived". On-site		
and directional signs are directly related to activities in a particular place and contribute to creating a 'sense		

² *Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines*, Tuia Pito Ora New Zealand Institute of Landscape Architects, July 2022, <u>https://nzila.co.nz/media/uploads/2022_09/Te_Tangi a te_Manu_Version_01_2022_.pd</u>

of place'. For example, a main-street or town centre will have signage identifying specific shops and community services which are part of the centre.

Off-site signs are not related to activities in a particular place and the content is generally part of wider regional, national or international advertising campaigns. In this sense they are generic and could be found anywhere.

The perceptual dimension refers to both our direct sensory experience and our broader interpretation through the senses. On-site signs are generally relatively simple and proportional to the scale of the buildings. They use logos, simple colours and names to identify an activity on the site. While signs on supermarkets and large-format retail may be quite large they are generally associated with larger buildings and extensive carparks. It is relatively rare to see changing images or extensive digital screeens.

Off-site signage is generally located to have a higher level of visibility (see photo 1). The signs are large and frequently established on stand-alone pylons. They are sited to be visually prominent in areas with high vehicle or pedestrian traffic flows. The overall brightness of digital screens generally stands out from surrounding flat surfaces, and the changing images draw the eye and attention of passers-by. The images are often more complex, including pictures and subliminal associations, and conveying a greater amount of information (which changes over a short period on digital signs).





Photos 1 & 2: Existing third party billboard and photo simulation without billboard, SH1, Woodend

In common language off-site and on-site signs have different content, different functions and different audiences. The visual impact of off-site signs tends to be greater due to their location in sightlines from highly trafficked areas, and their height, size and brightness.

In my opinion on-site and off-site signs have different associative and perceptual values, and these in turn give rise to different positive and adverse effects (these are the distinct differences referred to in paragraph 5.7 of my statement of evidence). If the Council seeks to support local businesses and to maintain the legibility of their towns, but also seeks to limit the level of signage in order to manage visual clutter and maintain the quality of their streetscapes, then in my opinion it would be justified in having a stricter rule regime for off-site signs. I consider that a different treatment of on-site and off-site signs can be justified by the lesser contribution that off-site signs make to legibility, the sense of place and identity of the town, and the greater visual impact of the off-site signs due to their size and location, and the increased number of signs.

The question also refers specifically to the Commercial and Industrial zones. Different levels of signage (both on-site and off-site) are appropriate in different areas. For example different levels of signage are evident in central Tokyo, central Christchurch, central Rangiora, Ohoka and Arthurs Pass. The Commercial

and Industrial zones in the PDP are less sensitive and can absorb a higher level of signage than many other zones, but they are also important economic areas that are visited by many people.

In my opinion the Council's approach in PDP recognises this and provides for a greater quantum of on-site and off-site signs in these zones, while continuing to manage the overall level of visual clutter, and to ensure that local businesses remain visible, by limiting the size, location and number of off-site signs.

Para 111 For Mr Binder – You have referred to two sources for your evidence that suggest off-site signs are a distraction to drivers (Gitelman et al, and Decker et al,). Are you aware that there may also be a large body of international research (and now New Zealand research) that suggests otherwise. If there is in fact conflicting overseas evidence on this, do you consider we have yet reached the point that warrants a different (and much stricter) rule regime for off-site signs - in Industrial and Commercial zones specifically? (noting also that Waka Kotahi's submission supports RDIS status in Commercial Zones, rather than NC).

Also, please comment on the distinction between 'attention' and 'distraction' in this context.

Response from Mr Binder:

In principle I consider that there is general agreement across the relevant research, both in Australasia and internationally, that signs and billboards in the roadside divert attention away from the task of driving, which is an adverse effect. I further consider that digital billboards likely also attract more attention than static signs due to their luminosity and changing content. However, I would like to give this further matter consideration (including the magnitude of attention diversion and follow-on effects) through a more extensive review of the literature and address this matter via the Signs right of reply.

Regarding the distinction between 'attention' and 'distraction' in relation to my advice that "off-site signs can cause driver **distraction** due to their higher degree of information requiring more cognitive **attention** and time". I would define "attention" as the mental exercise in perceiving and reacting to sensory inputs while working on a task(s). Conversely, "distraction" is when attention is being diverted from one task to another. In the instance of signs, billboards, or markings on the road, drivers' attentions are partially

diverted to perceive, understand, and react to these elements in the roadside (or on the road), diverting mental awareness from the act of steering the vehicle, maintaining speed, and avoiding conflicts.

Para 132Please clarify how a 0.6m² directional sign can cause driver distraction, as it would only have
a very small number of words on it, and maybe an arrow.

I relied on Mr Binder in this aspect and have requested he respond.

Response from Mr Binder:

I consider such a sign, while small in size and with a minimal number of elements, would still be another object for drivers to process when driving past and therefore contribute to distracting driver's attention away from focusing on driving.

Para 132 Could it not be the case that some directional signs may possibly assist traffic safety by simply and effectively showing drivers how to quickly locate and access an activity that is not easily located when driving on the main road?

I relied on Mr Binder in this aspect and have requested he respond.

Response from Mr Binder:

In my opinion, the number of drivers who would benefit from the directions provided by these signs would be far less than the number of drivers who would be distracted by such a sign, both individually and in a cumulative sense.

Para 149 In respect to your recommendation to retain "limiting digital signs", is it not the effects of digital signs that is being limited?

Yes. I consider *"limiting digital signs"* in clause 6 of SIGN-P4 refers to limiting their effects and relates to the various limits applied to digital signs in SIGN-S3. SIGN-S3 limits a digital sign's location, size, number of digital signs per site, content, image display time, transitions, lighting control, and malfunction response. I

consider the wording *"limiting digital signs"* in clause 6 of SIGN-P4 is an appropriate way of summarising these various restrictions.

Para 149 Also, can it not be the case that billboards with fixed lighting shining onto them cause more glare than a low illuminance (internally lit) digital billboard?

I relied on the evidence of Mr Nicholson in this aspect and have requested he respond.

Response from Mr Nicholson:

Yes, I am aware that parts of floodlit static billboards may cause greater glare than some digital billboards. The original intention of *LED Billboard Research: Technical Review of Visual Effects*, a report prepared for the Christchurch City Council³ was to identify a luminance level for digital signage where the visual impact

³ *LED Billboard Research: Technical Review of Visual Effects*, 2016, report prepared by Boffa Miskell Ltd and Connetics Ltd for Christchurch City Council

of digital signage was effectively the same as static signage and the two types of signage could be treated with the same standards. Unfortunately the issue is more complex than this.

There are bright reflections off static signs where the lights illuminating the static billboard reflect off the billboard towards the viewer. These reflections are relatively small areas but have high luminance values.



Photo 3: Static billboard on Moorhouse Avenue showing reflection from top mounted flood lights

The luminance values measured off the sign in Photo 3 at night ranged from 260cd/m² in the lighter areas to 40cd/m² in the darker areas⁴. The luminance in the lighter areas is comparable to the luminance levels of digital signs at night, however, the luminance levels of digital signs are generally more consistent across the entire sign. The 'brightness' of the reflections on static billboards is proportional to the 'brightness' of the floodlights. If the floodlights are too bright the contents of the static billboard will not be visible.

The human eye is used to seeing and interpreting reflections off flat surfaces such as windows or painted walls. The reflections may be relatively bright but only draw our attention when they 'blind' us by being too bright. In contrast the uniform 'brightness' of digital signs together with changing images draws our attention to digital signs.

Researchers analysing video footage of the eye positions of drivers passing digital billboards found that drivers made more and longer off-road glances in the direction of the digital billboards, particularly at the change-over period between advertisements⁵. This confirms extensive laboratory research that has found that rapidly changing or moving stimuli presented in peripheral vision tends to 'capture' covert attention.

Para 150 Could the digital sign standards proposed by GoMedia be considered as a consequential amendment or alternative relief to their submission point?

I did not consider applying the digital sign standards proposed by GoMedia to SIGN-S3 would be an appropriate consequential amendment or alternative relief to their submission point as that would be in the opposite direction to what the submitter was seeking as it would add additional restrictions to SIGN-S3, which permits small scale digital signs, and therefore not align with the direction of their submission which was to include these digital sign standards to support a rule that permits digital billboards. However, if the Panel were of a different view, then I could consider incorporating that relief within SIGN-S3.

Para 154	Do digital billboards signs have an industry standard for illumination that will apply
	regardless of the lack of standards in the District Plan?

I relied on the evidence of Mr Nicholson in this aspect and have requested he respond.

Response from Mr Nicholson:

Yes, digital billboards are covered by AS/NZS 4282:2019 *Control of the obtrusive effects of outdoor lighting* recommends maximum luminance levels for digital billboards of 5,000 cd/m² during the day and 250 cd/m² at night. The Standard states that these levels are intended to avoid lighting "giving rise to excessive annoyance, discomfort, distraction or a reduction in the ability to see essential information"⁶, however, it

⁴ Correspondence from WSP to Christchurch City Council re 590 Moorhouse Avenue, RMA20211182, 15 September 2021

⁵ Belyusar, D., Reimer, B., Mehler, B., & Coughlin, J. F. (2016) A field study on the effects of digital billboards on glance behaviour during highway driving. Accident Analysis and Prevention, 88, 88–96

⁶ AS/NZS 4282:2019: Control of the obtrusive effects of outdoor lighting, , Section 1.4 Definitions

goes on to say that this is "only one of a number of environmental and ecological considerations that will need to be addressed"⁷.

In other words the maximum luminance levels recommended in the Standard are not appropriate in all circumstances, and it may be appropriate to establish different luminance levels for outdoor signage in order to mitigate adverse effects or to complement a particular sense of place or character.

I commissioned the 2016 Christchurch City Council report on the visual effects of LED billboards⁸. This report was prepared by a lighting engineer and landscape architect working together to measure the luminance (the lighting engineer) and to assess the visual impact (the landscape architect) of a number of existing static and digital billboards.

Based on the measurements and observations from the case studies, the authors recommend 'good practice' luminance levels. The recommended low to moderate light levels which I consider to be more appropriate are $1,000 - 2,999 \text{ cd/m}^2$ during the day and $26 - 74 \text{ cd/m}^2$ during the night⁹. The study includes examples of signs which meet these standards.

Christchurch City Council's *Practice Note - Billboards* recommends mitigation measures can include lower luminance values (e.g., 3,000 cd/m² during day and 125cd/m² maximum at night)¹⁰.

In my opinion, if there is scope, it would be appropriate to establish a standard for the maximum luminance of digital signs in LIGHTS-S2. I would recommend maximum levels of 3,000cd/m² during the day and 125cd/m² at night.

Para 156 How does Waka Kotahi's request relate to, or in part address, the issue of the lack of control of lighting for digital signs?

⁹ Ibid, page 71

¹⁰ Practice Note-Billboards, Christchurch City Council, p. 11-12, Condition 9

⁷ AS/NZS 4282:2019: Control of the obtrusive effects of outdoor lighting, , Preface

⁸ Boffa Miskell Limited 2016. LED Billboard Research: Technical Review of Visual Effects. Report prepared by Boffa Miskell Limited and Connetics Limited for Christchurch City Council

Waka Kotahi requested a standard requiring a digital sign screen to *"incorporate lighting control to adjust brightness in line with ambient light levels*". I relied on the evidence of Mr Nicholson in this aspect and have requested he respond.

Response from Mr Nicholson:

The controllers that Waka Kotahi have requested to be added to the digital signs requirements address in part the lack of control of lighting for digital signs.

In particular the controllers would manage the transition between the maximum daytime luminance levels and the maximum night time luminance levels based on the ambient light levels. This is an important consideration that ensures that the brighter daytime luminance levels are not used at night when they would 'blind' or reduce the ability of viewers to see their surroundings.

The proposed controllers would not alter the maximum luminance levels established through resource consent, or the District Plan or industry standards, and would not resolve the issue of how 'bright' the signs should be

Para 215 Please provide some more reasons as to why the amended rule retains a distinction between signs "promoting a temporary activity" and signs "at a temporary activity" – i.e., what is the difference in effects?

The distinction between temporary signs 'promoting a temporary activity' and 'at a temporary activity' is needed because the limits in SIGN-R4 and SIGN-S2 differ.

SIGN-R4 limits the duration of a temporary sign promoting a temporary activity to six weeks before the temporary activity commences, while temporary signs at a temporary activity are limited to the duration of the activity.

SIGN-S2 limits the number of temporary signs promoting a temporary activity to two per site and a maximum area of 3m², while its permits an unlimited number of temporary signs at a temporary activity, with size limit of 8m² in order to ensure sufficient signs are provided for during an event.

In summary, the difference between these signs relates to the duration these signs can be in place, the maximum number of signs per site, and maximum sign size and therefore the effects associated with these.

Para 216 In respect of the proposed amendments to SIGN-R4 – Temporary sign, clause 4 – is the intent that election signs be removed one week before or after the election date?

The intent is that any temporary sign relating to a local election shall be removed within one week *after* the election date. I acknowledge that the wording "removed within one week *of* the election date" does not make this clear, so I recommend SIGN-R4(4) be amended as follows:

"any temporary sign relating to a local election may be erected a maximum of eight weeks prior to the election date and shall be removed <u>by</u> within one week <u>after</u> of the election date;"

Para 235 Is your advice here consistent with other s42A reports, i.e., by including an Advice Note to the effect that there is an NZ Code of Practice that readers need to be aware of (i.e., while the intent may be admirable where should the line be drawn on requests like this - to avoid cluttering District Plans with numerous advice notes on other COP's, standards and regulations)?

I am not aware of other s42A reports that have declined such requests for advice notes to reference Code of Practices, standards or regulations on the basis that they would result in cluttering. I agree that the inclusion of such standards does contribute to cluttering the District Plan, particularly given the lengthiness of them and the minimal relevance, however this is relatively similar in specificity and relevance to other advice notes included in SIGN-AN1. However, if the Panel were of a different view, then I could consider rejecting Transpower's submission that requested this [195.109].

Para 254 Could clause 1 be reworded to be consistent with the wording of clause 3?

Yes, I agree that clause (1) could be reworded to be consistent with the clause (3), as shown below:

"SIGN-P1 Enable specific signs

Ensure that:

- 1. official signs are enabled to that support the safe functioning of activities are enabled;
- 2. community signs are enabled while managing their adverse effects; and

3. on-site signs that support the economic viability and functionality of activities are enabled, while managing their adverse effects."

Para 254 Further to that, is it necessary for a District Plan to permit official signs which presumably are provided for by separate legislation and where there are no conditions or standards for them to meet?

The term 'official sign' originates from the National Planning Standards, where it is defined. While it is likely many signs that meet the definition of 'official sign' would be provided for by specific legislation which would likely override the RMA, some may not. I consider it is important to still distinguish these types of signs in order to provide clarity to plan users that these signs do not need to meet signs rules given such a sign could be considered under the definition of 'sign', 'on-site sign' or 'off-site sign'.

Appendix	Could a consequential amendment arising from Waka Kotahi be an amendment to the
A - SIGN-	heading of this policy?
P3	

Yes, I agree that the heading for SIGN-P3 could be amended to "*Safe, efficient and effective transport system*" in order to better reflect the content of the policy with its recommended amendments.