

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of hearing of a submission and further submission lodged by the **OUT OF HOME MEDIA ASSOCIATION OF AOTEAROA** in respect of the 'Signs' Chapter of the **PROPOSED LOWER HUTT DISTRICT PLAN 2025**

STATEMENT OF EVIDENCE OF BRETT HARRIES

1. INTRODUCTION

Name, Qualifications and Experience

- 1.1 My full name is Brett Harries.
- 1.2 I am a director of Harries Transportation Engineers Ltd which is a specialist transportation engineering consultancy that I founded in 2022. Prior to my current role, I was:
 - (a) Market Leader - Transport for Stantec (NZ) Limited (2018 to 2022); and
 - (b) Traffic Engineer and ultimately Managing Director of Traffic Design Group Limited (1982 to 2018).
- 1.1 I am a New Zealand Chartered Professional Engineer and am registered as an International Professional Engineer / APEC Engineer.
- 1.2 I hold a Bachelor of Civil Engineering degree from the University of Auckland (1982).
- 1.3 I have 44 years' of professional experience as a practising specialist traffic and transportation engineer.
- 1.4 I am:
 - (a) a Fellow of Engineering New Zealand;
 - (b) a Fellow of the Institute of Transportation Engineers (USA);

- (c) a Life Member of the Association of Consulting and Engineering (NZ);
 - (d) a Life Member of the Transportation Group of Engineering New Zealand; and
 - (e) an Associate Member of the NZ Planning Institute.
- 1.5 Throughout my 44 years as a specialist transport engineer, I have been engaged by both public and private sector clients from throughout New Zealand, Australia and the South Pacific to provide designs, assessments and advice on all manner of traffic engineering and transport planning projects.
- 1.6 As part of this broader experience, I have gained significant experience and expertise in human factors associated with driver behaviour, and the safety-related driver responses to various traffic environments. Much of this expertise has been obtained through my involvement as an expert vehicle crash analyst. I have qualifications in vehicle crash analysis from Northwestern University in Chicago and am one of a small handful of professional engineers in New Zealand that, through qualifications and experience, has been accepted as an expert vehicle crash analyst in the High Court of New Zealand.
- 1.7 I describe this background in crash analysis because it is directly relevant to the assessments I routinely undertake in relation to how drivers might respond to a wide range of visual stimuli that make up the traffic environment, including those that are directly related to the driving task (for example, traffic control devices, other vehicles, etc.), and some of which form parts of the fabric of the wider driving environment (such as surrounding activities, people, scenery, buildings, and of course advertising signs and billboards).
- 1.8 With regard to experience that is particular to the assessment of the road safety effects of signs and billboards, I estimate that I have undertaken or contributed to the formal assessment of over 600 digital signs throughout New Zealand.¹ Of these, I have been involved in the consenting of, or change of conditions to, at least 30 large-format digital signs and numerous small-format bus shelter / pedestrian shelter digital signs within the Wellington Region.

¹ For the purposes of my evidence to follow, I refer to "signs" as encompassing both smaller-format third-party advertising signs, and larger-format third-party advertising billboards.

- 1.9 In addition to the assessments undertaken for consenting purposes, I have also been involved in numerous post-consent reviews of road safety performances at operating digital sign sites, often undertaken either as part of monitoring conditions of consent, or as part of the processes associated with Section 127 applications for changes to conditions of consent as apply to existing digital signs.
- 1.10 I have presented evidence in relation to static and digital signs on numerous occasions at council hearings throughout New Zealand.
- 1.11 I have a sound understanding of:
- (a) the relevant international research and international practical operational experiences associated with digital signs; and
 - (b) the distinctions between perceived versus actual likely road safety implications of signs.
- 1.12 I maintain my knowledge of the traffic safety implications of static and digital signs through ongoing reviews of published papers on the subject; and through regular attendances at international conferences that relate to the matters that potentially influence driver performances or driver behaviours. In particular, I am a regular attendee of the "*International Conference on Driver Distraction and Inattention*".
- 1.13 I also participated in a 2012 trial of digital billboard operating characteristics (dwell times², image transition³ methods and times, and luminance levels) which was held in Auckland during daytime and night-time conditions, and was also attended by various experts from, and consultants representing, Auckland Council, Auckland Transport, and industry representatives.

Purpose of My Evidence

- 1.14 In this matter, I have been instructed by Counsel for the Out of Home Media Association of Aotearoa (**OOHMAA**) to provide traffic engineering and road safety evidence in relation to:
- (a) The primary submission (Submission PDP/413) lodged by OOHMAA with the Hutt City Council dated 2 May 2025 (**OOHMAA**

² "Dwell time" is the minimum duration of display of an individual image on a digital sign.

³ "Image transition" is the means by which one individual image transitions to the following individual image

Submission) in respect of the Signs provisions of the Proposed Lower Hutt District Plan 2025 (**Proposed Plan**);

- (b) The further submission (PDP/F21) lodged by OOHMAA dated 24 July 2025 (**OOHMAA Further Submission**) in relation to the primary submission of Waka Kotahi New Zealand Transport Agency (**NZTA**) (Submission PDP/385) (**NZTA Submission**).

1.15 The particular parts of the OOHMAA Submission that are addressed in my evidence include:

- (a) Submission Point 413.10 which seeks amendment to rules SIGN-R3.1.a.vii and SIGN-R3.1.a.viii in relation to the dwell time standards to apply to digital signs on roads speed limits of less than 80km/h, and 80km/h or more, respectively.
- (b) Submission Point 413.11 which seeks amendment to rule SIGN-R3.1.b in relation to the nature of transitioning between images on digital signs.
- (c) Submission Point 413.22 which seeks amendment to standard SIGN-S8.6 that requires all signs that are within 10m of a legal road or visible from any state highway to comply with specified minimum lettering heights than range between 150mm and 300mm relative to the speed limit of the road that they are visible from.

1.16 The particular parts of the OOHMAA Further Submission that are addressed in my evidence all relate to the NZTA Submission, and include:

- (a) NZTA Submission Point 385.80 in relation to SIGN-P4.6 which currently provides for digital signs and illuminated signs when visible from state highways or roads with speed limits of 80km/h or less, but which NZTA seeks to have applied to state highways or roads with lower speed limits of 70km/h or less.
- (b) NZTA Submission point 385.84 in relation to SIGN-R3.1.a which lists the rules to be met for digital signs to achieve restricted discretionary activity status, and which NZTA seeks to make more restrictive by:
 - (i) modifying SIGN-R3.1.a.iv in relation to the applicable speed limit of the road;
 - (ii) modifying SIGN-R3.1.a.vii in relation to both dwell time and the applicable speed limit of the road;

- (iii) adding a new SIGN-R3.1.a.ix in relation to visibility from state highway on- and off-ramps; and
 - (iv) adding a new SIGN-R3.1.a.x in relation to the visible presence of any other digital billboards.
 - (c) NZTA Submission point 385.91 in relation to SIGN-S8.4 which lists the standards to apply to signs and the transport network, and which NZTA seeks to make more restrictive by:
 - (i) applying the standard to state highways and roads with speed limits of 70km/h or less, rather than 80km/h or less as currently applies; and
 - (ii) excluding the display of logos on the sign.
- 1.17 I have read the Council's Section 32 analysis in relation to Signs; the OOHMAA and NZTA Submissions; the OOHMAA Further Submissions, and Council's Section 42A Report.

Scope of Evidence

- 1.18 I note at the outset that in my evidence to follow, when I refer to 'signs', I am referring generally to third-party advertising signs and billboards, both static and digital; and when I refer to 'digital signs', I am referring to both small-format and large-format digital third-party advertising signs and billboards that have changeable electronic displays.
- 1.19 Prior to addressing the specifics of the traffic engineering and road safety implications of the OOHMAA submission and further submission, my evidence will provide a general overview of the actual road safety implications of digital signs. I do so by reference to:
- (a) the current state of applicable New Zealand and international research regarding the road safety outcomes of, and the optimum operating characteristics for, digital signs; and
 - (b) the extent to which 13+ years of digital sign operations in New Zealand have actually influenced road safety.
- 1.20 I consider that provision of this broad outline of how digital signs can in practice influence road safety represents a critical background to the relief sought in the OOHMAA submission and further submission. This is especially so given that, in my opinion, some aspects of the Signs chapter of the

Proposed Plan, and the NZTA submission matters that I address, appear to be based more on perception and / or speculation and / or 'tradition', than they are on robust evidence and operational experience.

1.21 My evidence is therefore structured as follows:

- (a) Section 3 provides a summary of the international research basis for the assessment of digital signs, with a particular focus on the research that is appropriate and relevant to New Zealand conditions;
- (b) Section 4 provides a detailed examination of the actual road safety implications of signs in general, and digital signs in particular, by reference to the NZTA Crash Analysis System (**CAS**);
- (c) Section 5 provides comments on the traffic engineering and road safety aspects of the OOHMAA submissions;
- (d) Section 6 provides comments on the traffic engineering and road safety aspects of the OOHMAA further submissions in relation to the NZTA submissions; and
- (e) Section 7 provides my conclusions.

1.22 An executive summary of my evidence is provided in Section 2.

Expert Witness Code of Conduct

1.23 I have been provided with a copy of the Code of Conduct for Expert Witnesses as contained in the Environment Court's 2023 Practice Note. I can confirm that I have read it, and I agree to comply with it. In particular, I can confirm that this evidence is within my area of expertise, and that I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

2. EXECUTIVE SUMMARY

Background to the Road Safety Effects of Digital Signs

2.1 Relevant international research, along with 13+ years of operational experience of digital signs in New Zealand, confirms that they do not inherently compromise road safety. I estimate that there are now more than 1,300 digital signs located in towns and cities throughout New Zealand, yet there is not a single recorded crash that has been attributed to a digital sign, nor a single known site where the presence of a digital sign has adversely

impacted on the road safety performance of that site in any identifiable manner.

- 2.2 The vast majority of digital signs in New Zealand operate within an already tightly bound set of well-established operational parameters that have been thoroughly assessed, including as a consequence of post-implementation safety monitoring studies.
- 2.3 On that basis, I consider that the need for additional novel and/or more restrictive controls on digital sign operations, as have been proposed by the some of the Proposed Plan provisions and particularly by NZTA, are both unfounded in terms of evidence, and unnecessary to ensure the ongoing acceptable management of the road safety effects of digital signs.
- 2.4 In other words, the more restrictive and/or new controls as proposed have been conceptualised to address perceived adverse traffic safety effects when there is no probative evidence of those effects. With such a large database of existing digital signs that have operated in New Zealand over a long period of time and which been subject to close scrutiny throughout, there is in my opinion no credible basis for taking the highly precautionary approaches to assessment and management of new digital signs, especially as NZTA propose.

OOHMAA Submission

- 2.5 OOHMAA Submission **SP 413.10** in relation to **Rule SIGN-R3.1.a** seeks modified minimum dwell times of 8-seconds on lower speed roads (in preference to 15-seconds as notified and 10-seconds as recommended by the s.42A reporting officer); and it seeks 30-seconds on higher speed roads (in preference to 35-seconds as notified). I fully support both of the proposed amendments on the bases that they:
 - (a) are supported by empirically-derived, New Zealand relevant, international research;
 - (b) are supported by 13+ years of New Zealand operational experience, insofar that both values have become default industry standards, and have been validated by New Zealand's unblemished road safety record in relation to digital sign operations; and
 - (c) will enable consistency with the Wellington City 2024 District Plan (**Wellington District Plan**).

- 2.6 OOHMAA Submission **SP 413.11** in relation to **Rule SIGN-R3.1.b** seeks confirmation and clarification of the use of cross-dissolve transitions between digital images, which I fully support. However, while not sought by the OOHMAA submission, my professional opinion is that the duration of cross-dissolve transitions should be set at 0.5-seconds, and not the 0.1 to 0.5-second range as notified. This is for the reason that the shorter a transition period is below 0.5-seconds, the greater is the potential for that transition to catch the involuntary attention of road users.
- 2.7 OOHMAA Submission **SP 413.22** in relation to **Standard SIGN-S8.6** seeks that the letter height standards as notified only apply to the primary (i.e. main) message within an image, and not to all text within an image. I fully support that proposed amendment on the bases that:
- (a) the requirement as notified is unnecessarily and unjustifiably restrictive;
 - (b) it would be impracticable for the display of all text (particularly with necessarily smaller text such as occurs in product labels, logos, terms and conditions, legal and medical disclaimers, etc); and
 - (c) it would generate an inconsistency between the District Plan, and the recommendations provided within NZTA's guidance documents that are specific to signs.

OOHMAA Further Submissions (F21)

- 2.8 OOHMAA's Further Submission to the NZTA Submission **SP385.80** in relation to **Policy SIGN-P4** seeks rejection of the change to the speed limit threshold for higher speed roads from which visibility of a digital sign is excluded. I fully support OOHMAA's recommended rejection of NZTA's submission to amend the speed limit threshold down from 80km/h to 70km/h on the bases that:
- (a) there is no probative evidence to support the proposition that signs visible from roads that operate with a speed limit higher than 70km/h, but less than 80km/h, adversely impact on road safety;
 - (b) a reduction in the speed limit threshold to 70km/h would create an inconsistency with the Wellington City 2024 District Plan that applies an 80km/h threshold; and
 - (c) a reduction in the speed limit threshold would create an inconsistency with the definitions of lower speed environments and higher speed

environments in the "*Digital advertising billboards and state highway road safety – Planning Policy Manual*" (**PPM**) which refers to an 80km/h speed limit threshold.

2.9 OOHMAA's Further Submission to the NZTA Submission **SP385.84** in relation to **Rule SIGN-R3.1.a** seeks rejection of:

- (a) a proposed reduction in the speed limit threshold for the exclusion of signs (**R3.1.1.iv**);
- (b) a proposed bespoke dwell time calculation methodology (**R3.1.a.vii**);
- (c) a new rule to require exclusion of signs that are visible from, or within 100m of an on-ramp or off-ramp (**R3.1.a.ix**); and
- (d) a new rule to require exclusion of signs that may be visible contemporaneously with another sign (**R3.1.a.x**).

2.10 I fully support OOHMAA's requested rejections of NZTA's proposed amendments and additions to SIGN-R3.1.a on the following bases:

- (a) In relation to the NZTA's requested reduction in the speed limit threshold to apply to higher speed roads, for the reasons I have already addressed in paragraph [2.8] above;
- (b) In relation to NZTA's recommended bespoke dwell time calculation methodology, for the reasons that the methodology is:
 - (i) unjustifiable insofar that it lacks a sound technical basis;
 - (ii) impracticable; and
 - (iii) unnecessarily restrictive.
- (c) In relation to NZTA's recommended exclusion of signs from on-ramps and off-ramps, for the reasons that:
 - (i) there is a fundamental difficulty of establishing (in Lower Hutt's context), what constitutes an on-ramp or off-ramp given that most connections to/from SH2 occur by way of at-grade intersections;
 - (ii) where a sign is to be directed at the state highway it will already be encompassed by other rules; and

- (iii) sign placement in relation to any road feature should be a matter of technical assessment and not a rule, (especially given the inherent uncertainty of interpretation of the rule in Lower Hutt's context).
 - (d) NZTA has recommended a rule that new signs should not be established if an existing sign is visible in the same field of view. In my opinion, that is not a matter that can or should be subject to a rule, but is a matter that should be subject to technical assessment as would occur for any other element of a sign's traffic environment, especially given that both the "*Traffic Control Devices Manual Part 3 – Advertising Signs*" (**TCDM3**) and the PPM address sign separation distances as matters for assessment rather than absolute requirements.
- 2.11 OOHMAA's Further Submission to the NZTA Submission **SP385.91** in relation to **Standard SIGN-S8.4** seeks rejection of the lowering of the speed limit threshold for higher speed roads from 80km/h to 70km/h for the exclusion of contact information within an image; and it seeks rejection of **Standard SIGN-S8.4.a** that seeks to have logos added to the list of contact details that would be excluded from images displayed on higher speed roads.
- 2.12 I fully support the OOHMAA further submission in relation to the following amendments and additions to SIGN-S8.4 as proposed by NZTA:
- (a) in relation to the NZTA's requested reduction in the speed limit threshold to apply to higher speed roads, for the reasons I have already addressed in [2.8] above; and
 - (b) in relation to NZTA's recommended exclusion of logos from images, for the reasons that:
 - (i) there is no credible basis for that exclusion, as logos do not place demands on a road user's attention as might potentially be the case with the contact details that the remainder of the standard refers to;
 - (ii) logos actually assist in the quick and easy identification of an organisation or product (hence their frequent use on NZTA signs); and
 - (iii) the exclusion of logos is not something that is sought in either the TCDM3 or the PPM.

3. TRAFFIC SAFETY IMPLICATIONS OF DIGITAL SIGNS

Research Relevance and Applicability

- 3.1 The international research that relates to the road safety implications of digital signs varies significantly in terms of its age, relevance to New Zealand, and the extent that the research has been validated to real-world situations. This has sometimes led to inconsistent research outcomes and misconceptions by experts.
- 3.2 However, by focussing more on recent studies that are based on:
- (a) Empirically derived real-world evidence in preference to either inferred evidence or laboratory-derived evidence; and
 - (b) More importantly, research that relates to the manner in which digital signs operate in New Zealand, (i.e., with more comparable and relevant digital sign operational characteristics, traffic environments and traffic conditions) –
- a clearer picture emerges.
- 3.3 Some of the key research papers are briefly summarised below.

Relevant International Research Examples

- 3.4 An Australian study by Samsa (2015)⁴ describes on-road experiments that involved comparative assessments of driver responses to the presence of on-premise signs⁵, static signs, and digital signs. The research found that:

"Generally, participants tended to fixate most on the road ahead when driving, which is a positive finding in terms of road safety. There were also no differences in this on-road viewing between the three signage types", [i.e. on-premise advertising signs, standard billboards and digital billboards].

"When participants looked at billboards and on-premise signs, the average fixation durations were all well below 0.75s, which is considered to be the equivalent minimum perception-reaction time to the slowing of a vehicle ahead".

⁴ Samsa, C. (2015) "Digital billboards 'down under': are they distracting to drivers and can industry and regulators work together for a successful road safety outcome?" Proceedings of the 2015 Australasian Road Safety Conference 14 – 16 October, Gold Coast, Australia.

⁵ On-premise signs are first-party advertising signs that relate to the activity within the site on which they are located. They predominantly consist of business identification signs.

"In regard to driver performance variables, the data showed no significant differences in average vehicle headway for any of the signage types", and "... the headways found in the present study would have given drivers enough time to detect the slowing of a vehicle in front and respond accordingly".

"... the findings show that digital billboards do not draw drivers' attention away from the road for dangerously long periods of time compared to other signage types, and drivers maintained a safe average vehicle headway in the presence of these signs".

[Underlining is mine.]

- 3.5 The key point to be drawn from Samsa's research is that digital signs are no more distractive to drivers than any other signage type, and that when glances are made at digital signs, those glance durations are below the threshold that would likely result in road safety issues.
- 3.6 Research that is specific to digital signs was undertaken by Goodsell *et al* (2018) of the Australian Road Research Board (now "**NTRO**"),⁶ and involved an evaluation of the impact on driving performance associated with new digital sign installations within complex traffic environments. This evaluation took the form of a video survey with the aim of assessing the before and after impacts on driving performance and road safety of the digital signs when they began operation. The concluding paragraph from Goodsell *et al* (2018) is as follows:

"In conclusion, the current evaluation investigated the impact of the presence of digital billboards on vehicle control performance. The sites evaluated were relatively complex signalised intersections. Because of the cognitive demands associated with negotiating a signalised intersection, these are the kinds of sites where it might be expected that drivers would display impairment from distraction. However, there was almost no evidence that the digital billboards at these locations impaired driving performance. Clearly, in real world situations, the impact from the visual distraction from digital billboards is complex, and in some situations such as the installations evaluated here, there can be an apparent positive impact on driving performance from the presence of a digital billboard. If the parameters of how and when this positive impact occurs can be precisely specified, this would prove enormously valuable for all stakeholders."

[Underlining is mine.]

⁶ Goodsell R, Dr Roberts. P "On-Road evaluation of the driving performance impact of digital billboards at Intersections" Project No. PRS17074 – ARRB, (2018).

- 3.7 The Goodsell *et al* (2018) research supports other similar research and demonstrates that digital signs do not cause a reduction in driver performance or compromise driver behaviour, either of which could lead to a deterioration in road safety.
- 3.8 This was further demonstrated in a study by Cunningham *et al* (2016) also of NTRO, which describes a safety evaluation of a digital billboard mounted over the Kwinana Freeway in Perth.⁷ Comparisons were made between a digital billboard not operating and then operating; and between the billboard site and a matched control site. This evaluation took the form of a video survey of vehicle movement with a view to quantifying driver performance measures including incidents, lateral control⁸, and headway.⁹ The study revealed no incidents in any of the time periods examined; no impact on headway time; and reduced lane drift episodes.
- 3.9 The discussion from the study included the following extracts:

"There was no evidence that headway time was affected by the illumination of the LFDS [large format digital sign] suggesting that by this measure at least, the LFDS was not having a negative impact on driver behaviour"

"Importantly there was a significant difference in the number of lane drift episodes attributable to the illumination of the LFDS. Unexpectedly, there were less lane drift episodes when the LFDS was illuminated compared to when it was not."

[Underlining is mine.]

Driver Situational Awareness

- 3.10 There is also research that indicates that the presence of digital signs may assist to enhance a driver's situational awareness. That is, they may assist drivers to maintain engagement with the driving task and remain looking at the road ahead instead of being either distracted by elements within the vehicle (particularly by the use of cell phones and /or in-car technology), or being inattentive due to mind wandering.¹⁰

⁷ Cunningham, M., Mitchell, B., Roberts, P., "Bull Creek LFDS Evaluation" ARRB contract report for Department of Transport WA, September 2016.

⁸ Lateral control is the ability to stay in-lane.

⁹ Headway is the following distance to the vehicle in front.

¹⁰ Including Young *et al* (2015), Goodsell *et al* (2018), and Cunningham *et al* (2016).

- 3.11 An Australian study by Young *et al* (2015) of Monash University relates to situational awareness.¹¹ That research examined static signs in freeway situations, but is pertinent based on its following conclusions:

"Overall, the driving performance and situation awareness results indicated that drivers were not overly distracted by roadside advertising in the freeway environment, as indicated by a lack of serious driving errors being made in the vicinity of the billboards".

"The billboards examined were a key element of a drivers' situation awareness when driving demand was low, such as when driving on the freeway under free-flowing, low traffic conditions. However, ... when driving demands increased, drivers focused less attention on the billboards".

"These results suggest that drivers can self-regulate their attention to billboards, reducing the attention given to them when required to focus on the immediate driving situation".

[Underlining is mine.]

- 3.12 The key point to be taken from this study is that as a driving environment becomes more complex, drivers self-regulate their focus toward the driving task (such as roadway and traffic interactions), with less focus on the things that are unnecessary to the driving task (such as looking at an advertising sign).
- 3.13 When the Young *et al* (2015) study is aligned with the previous Australian research studies that I have referred to, the research implies (albeit does not yet conclusively prove) that there appears to be a net road safety advantage to enabling the presence of digital signs as a means of off-setting driver inattention and/or mind-wandering.

Summary of International and Domestic Research

- 3.14 Overall, it is my opinion that the body of New Zealand relevant, empirically-derived research and analysis that is now emerging is increasingly confirming that digital signs are:
- (a) little or no different from any other sort of advertising sign including static signs and on-premise signs;

¹¹ Young K.L., Stephens A.N., Logan D.B., Lenne M.G. "An On-Road Study of the Effect of Roadside Advertising on Driving Performance and Situation Awareness", Proceedings of the 4th International Driver Distraction and Inattention Conference, Sydney, Australia, 2015.

- (b) not inherently distractive to drivers to the extent that they are adversely impacting on safe driver performances and behaviours; and
- (c) not inherently hazardous to the traffic environment, even in complex traffic situations.

New Zealand Digital Signs and Road Safety Performance

- 3.15 I have undertaken a detailed assessment of the CAS crash database for the whole of New Zealand for the 13¾ years from 2013 to 2026¹² that digital signs have been operational, which, as previously noted, I estimate to now involve over 1,300 throughout the country.
- 3.16 This assessment was undertaken by searching on the crash factor "*attention diverted by advertising or signs*".¹³ That search revealed 89 recorded crashes. I note in this regard that this crash factor picks up any crash that is related to any sort of sign, not just advertising signs. These therefore include street name signs, road works signs, directional signs, speed signs, election hoardings, and so on.
- 3.17 For each crash identified by CAS, I have examined the relevant NZ Police 'Traffic Crash Report' and associated driver and witness statements and, where necessary, cross-referenced crashes to the situational context at the crash locations.
- 3.18 The following categories of signs associated with the '*attention diverted by advertising or signs*' crashes were identified:

¹² Search date 27 September 2026

¹³ CAS crash factor 356.

Category	Nature of sign	No.
Third-party advertising billboards	Digital sign / billboard.	0
	Static sign / billboard.	4
Commercial first-party on-premise signs	shops / fuel price board / real estate / roadside stall.	17
Looking for, or at, directional signs	Street name signs / directional signs / motorway gantry signs.	24
Traffic signs	Traffic sign / roadworks traffic management / VMS / digital speed signs / detour sign / motorway travel time sign.	21
Personal / community	Election hoarding / community noticeboard / place identification / protest sign.	6
Inappropriately coded as sign distraction	Looking for or at shops or buildings, a circus blimp, a horse statue, a navigation device, a computer, or no sign evident.	17
Total		89

Table 1: 'Attention diverted by advertising or signs' crashes 2013- 2026

- 3.19 Table 1 shows that no crashes involved a digital sign, and only four crashes involved static third-party advertising signs. In my opinion, this clearly demonstrates that the presence of digital signs (and indeed third-party advertising in general), is not currently generating material road safety issues.
- 3.20 To put these sign-related crashes into perspective, during the same 13¾-year search period there was an overall total of just under 450,000 recorded crashes in New Zealand. Even if the combined total of 21 crashes involving some sort of advertising is considered (that is, the 4 static third-party advertising signs, and the 17 first-party business identification signs), they represent 0.005% of all crashes. The four third-party advertising sign crashes represent 0.0009% of all crashes.
- 3.21 To put the four advertising sign-related crashes into further perspective, the CAS data reveals that a driver is:
- (a) 73 times more likely to have a crash due to a wheel coming off the vehicle being driven;
 - (b) 580 times more likely to have a crash due to looking at scenery or people outside the vehicle; and
 - (c) 4,650 times more likely to have a crash due to an in-vehicle distraction.
- 3.22 A commonly posited view in relation to the CAS crash database is that drivers might, in reporting on crashes, be unwilling to admit to, or be unaware of,

being distracted by signs in general, and digital signs in particular. However, there is no reason why drivers who have been involved in a crash would not want to point to distraction by a sign, any more or less than they would point to distraction by any other element of the external traffic environment (such as scenery or people), or elements internal to the vehicle.

- 3.23 It is also noted in this regard that research from Queens University in Ireland found that while distraction due to objects inside the vehicle (particularly the use of cell phones and in-car technology) are under-reported and hence under-represented as a crash factor, no such difference was found with regard to outside the vehicle distraction.¹⁴ This further supports the analysis of individual crash records as providing a useful tool to understand the potential impact of third-party advertising on driver attention and safety.
- 3.24 The lack of crashes relating to digital signs is also evident when a broader examination of crash histories is undertaken (usually in relation to post-implementation monitoring conditions related to consented digital signs). Such studies typically look beyond individual crash causes, to determine whether there have been any identifiable changes to general crash patterns or crash numbers at individual digital sign sites.
- 3.25 Based on the numerous monitoring studies that I have undertaken myself, and other studies that I am aware of that have been undertaken by others, even when examinations are made that look beyond the face of the crash records to overall influences, it has, without exception, been found that digital signs are not identifiably compromising the safety of their traffic environments.
- 3.26 Significantly, therefore:
- (a) Digital signs are not a new phenomenon that we know nothing about. Rather, there is now a significant database of such signs to examine, which provides the advantage of being able to directly observe, measure and evaluate their actual effects. This is, of course, far preferable to inferring potential effects from theoretical or laboratory-based studies, or making assessments based on unfounded perceptions.
 - (b) Digital signs are not featuring at all in the crash statistics.

¹⁴ Regev S, Rolison JJ, Feeney A, Moutari S "Driver distraction is an under-reported cause of road accidents: An examination of discrepancy between police officers' views and road accident reports", Queen's University, Belfast, presented at Fifth International Conference on Driver Distraction and Inattention, (2017).

- (c) Based on numerous monitoring studies that have been undertaken at digital sign locations, there are no sites where digital sign operations have resulted in any identifiable adverse change to overall crash numbers, crash patterns, or crash severities.
 - (d) There is no evidential basis for suggesting that drivers do not admit to, or are unaware of, being distracted by a digital sign, especially given that so many other external and internal distractors have made their way into the crash statistics.
- 3.27 Clearly, digital signs demonstrably do not generate identifiable adverse road safety effects, even when concerted efforts are made to find those effects. The evidence therefore strongly indicates that digital advertising signs, as they are currently operated and controlled, represent a negligible level of road safety risk to road users.

4. **NZTA PLANNING POLICY MANUAL - DIGITAL ADVERTISING BILLBOARDS AND STATE HIGHWAY ROAD SAFETY**

- 4.1 Sections 2 and 3 of my evidence refer to NZTA's PPM operational guidance document released earlier this month. In order for the Commissioners to fully understand aspects of my evidence, it is necessary to provide a brief overview of that document.

Background

- 4.2 The predecessor to the PPM was the draft "Planning Policy Manual – Digital Advertising Billboards and Road Safety" (**Draft PPM**) which NZTA issued for consultation purposes on 30 September 2025. OOHMAA lodged a submission that was highly critical of the Draft PPM, on the basis of its flawed research base, poor crafting, and inappropriate controls. This was subsequently supported by evidence from OOHMAA's CEO, Kath Mitchell; and evidence from Mr. Blomfield (planning), Mr. Kern (lighting), and me, and legal submissions from Mr. Berry.
- 4.3 Engagement between OOHMAA and NZTA resulted in some improvements to the final version of the PPM but in my view that document still reflects some outmoded thinking and inappropriate controls based on unsupportable assumptions about the effect of digital signs on driver performance, as outlined in Sections 2 and 3 of this statement.

Overview

4.4 One of the PPM's stated intents is to provide an operational framework to assist NZTA staff, councils, and developers in navigating transport planning, corridor protection, and land use consent processes to ensure the safety and efficiency of the state highway network.

4.5 In addition to this internal guidance, NZTA specifically developed the PPM to influence RMA processes and decision-makers in the context of resource consent applications and district plan processes such as this one, its stated purpose being to:

"...inform territorial authorities, decision-makers, and digital billboard proponents of the matters NZTA expects to be considered when designing, locating, and assessing digital billboard proposals..."

4.6 Rather than relying solely on standard static controls, the PPM has attempted to establish a complex technical framework governing how digital signs should operate in practice. For example, it:

- (a) introduces a dynamic formula to calculate minimum dwell times based on legible exposure distance, vehicle operating speed, and road complexity adjustment factors, while enforcing an absolute 8-second baseline floor;
- (b) mandates precise display characteristics, including strict maximum luminance thresholds, explicit message-length restrictions limiting content to no more than 10 main message words and 15 secondary message words, and entirely subjective image content controls; and
- (c) imposes a blanket policy prohibition on digital displays in speed environments of 80 km/h or above.

4.7 I have technical concerns with all of these aspects of the PPM. The submissions of legal counsel will address issues relevant to the weight to be accorded to the PPM so I will not comment further on that other than to observe that, as non-statutory agency guidance, the PPM should in my opinion carry less weight than site-specific traffic engineering analysis (which will often demonstrate that the NZTA restrictions or formula are inappropriate or inaccurate) or the provisions of district plans which have been subject to testing via Schedule 1 processes.

5. **OOHMAA SP 413.10 - RULES SIGN-R3.1.a.vii AND SIGN-R3.1.a.viii – DWELL TIMES**

5.1 Rule SIGN-R3.1.a of the Proposed Plan, and the amendments sought by OOHMAA in SP 413.10 are as follows:

Activity status: Restricted discretionary

Where:

a. The sign

...

vii. Displays images for a minimum of ~~35~~ 30 seconds before transitioning to the next when visible from a road with a speed limit of 80km/h or more, and

viii. In any other case, displays images for at least ~~15~~ 8 seconds before transitioning to the next,

5.2 As is apparent, the OOHMAA Submission seeks to amend the Rule to require a minimum dwell time of 30-seconds on roads that have a speed limit of 80km/h or more; and 8 seconds on roads that have a speed limit above 80km/h.

5.3 Council's traffic advisor (Mr. Mike Smith) recommends:

"...that the dwell time for roads of ≥ 70 km/h be set at a value that is consistent across the greater Wellington Network. This will require the supply of relevant dwell time values for Wellington City Council".¹⁵

5.4 In relation to Mr. Smith's comment, I note that the Wellington District Plan's standard SIGN-S8.2.b. requires an 8-second minimum dwell time in lower speed environments (i.e. below 80km/h); and 30 seconds in higher speed environments (i.e. 80km/h and above), as follows:

"Each image on a digital sign shall:

b. Be displayed for a minimum of 8 seconds for roads with posted speed limits of less than and equal to 80km/h and a minimum of 30 seconds for roads with a posted speed limit of greater than 80km/h;"

¹⁵ Appendix 4: HCC Signs Chapter – Review of Submissions by Mike Smith at [60]

5.5 Mr. Smith also comments that:

*"...I do not accept the relief sought to lower the dwell time for other roads to 8 seconds. Should a change be sought, I could support an absolute minimum dwell time for other roads of 10 seconds."*¹⁶

5.6 Having considered the submissions in relation to dwell times, and Mr. Smith's response to those submissions, the s.42A reporting officer recommends:

*"... a minimum dwell time of 10 seconds for roads with posted speed limits less than or equal to 80km/h and minimum dwell time of 30 seconds for roads with a posted speed limit greater than 30km/h."*¹⁷

5.7 In relation to the s.42A Report's recommended threshold speed limit of 80km/h or below for lower speed environments, I disagree with the adoption of a 10-second dwell time as recommended by Mr. Smith, in preference to the 8-second dwell time as sought in the OOHMAA submission. However, I agree with the s.42A Report that the lower speed traffic environment threshold speed limit should be 80km/h, and not 70km/h as preferred by Mr. Smith. I address the point about the speed limit threshold later in my evidence.

5.8 In relation to Mr. Smith's second comment above, I note that his justification for the 10-second minimum dwell time is by way of reference to a secondary research paper¹⁸ by Oviedo-Trespalacios *et al* (2019) which relies predominantly on laboratory research and/or inferred findings by others, none of which provides any empirical, real-world justification for the suggested 'absolute minimum' dwell time of 10-seconds that Mr. Smith has chosen to adopt.

5.9 As far as I am aware, the only research that has examined the actual implications of different dwell times on driver performances, driver behaviours, and road safety in real-world complex traffic environments is the Australian NTRO research by Goodsell *et al* (2018) that I have previously referred to. That research involved an evaluation of the impact on driving performance of new digital billboard installations at complex traffic signalised intersections. The study is relevant to this assessment of dwell time because

¹⁶ Appendix 4: HCC Signs Chapter – Review of Submissions by Mike Smith at [63]

¹⁷ S.42A Report at [153]

¹⁸ 'Secondary research' is research that does not contain any original research. Rather it is based on literature reviews of research undertaken by others.

at each of the digital billboard sites that were evaluated in detail, six different dwell times were examined, being 8, 10, 16, 20, 24 and 30 seconds.

- 5.10 An extract from its findings is provided as follows:

"Contrary to a hypothesis that digital billboards at demanding locations will inevitably create enough distraction to negatively affect vehicle control performance, the current evaluation found that, at all dwell times, vehicle lateral control performance either improved or was unaffected by the digital billboard's presence."

[Underlining is mine.]

- 5.11 The only consequence of applying longer dwell times (above the currently recognised 8-second minimum) is that fewer road users will be 'exposed' to an image transition. In this regard (and noting that it will always be the case that some road users will be exposed to an image change), a commonly held perception is that reducing the proportion of passing road users who might see an image transition improves road safety. The reality, however, is that there is no evidential basis to suggest that image transitions of the type used in New Zealand (that is, the 0.5-second cross-dissolve transitions that are most commonly applied) have any adverse influence on road safety. This is because the 0.5-second cross-dissolve transitions result in subtle image changes that inherently mitigate the potential distractive effects associated with those image changes, and hence makes the need for fewer transitions, by way of longer dwell times, are largely irrelevant to road safety.
- 5.12 Further, empirically-based Australian research is that those drivers who might choose to look at an advertising sign will only glance at that sign for a momentary period of less than 0.75 seconds.¹⁹ Drivers simply do not intently hold their stare at a digital billboard as a consequence of, or in anticipation of seeing, an image-change.
- 5.13 If the perception that reducing exposure to image changes (by virtue of longer dwell times), in some way enhances road safety, then that implies that those road users who are exposed to image transitions are having their safety impacted upon. However, I am unaware of any empirical evidence of compromised road safety as a consequence of digital sign image changes to substantiate that perception. To put that perception into context, (and

¹⁹

Samsa, C. (2015) "Digital billboards 'down under': are they distracting to drivers and can industry and regulators work together for a successful road safety outcome?" Proceedings of the 2015 Australasian Road Safety Conference 14 – 16 October, Gold Coast, Australia.

noting my estimate that around 90% to 95% of the approximately 1,300 digital signs in operation in New Zealand do so with an 8-second dwell time), then that suggests that every day, New Zealand road users are exposed to around 13.5 million image transitions. Over a year that equates to around 5 billion image transitions.

- 5.14 However, and as detailed in my [3.15] to [3.27] above, in the whole history of digital sign operations in New Zealand, there is nothing from either the NZTA CAS crash database, or from the various before-and-after road safety studies undertaken at individual billboard sites, or from any other source, to suggest that digital signs have had any identifiable adverse road safety effect. Demonstrably, road users are not having their safety compromised by image transitioning, which in effect confirms the operational safety of the 8-second dwell time that commonly applies throughout the country.
- 5.15 I also note that there would undoubtedly be value in having regional consistency with digital sign operational characteristics. In this regard, given that the Wellington District Plan has recently adopted an 8-second dwell time for lower speed environments of 80km/h or less, then application of the same minimum value in the Lower Hutt District Plan would seem to me to be both sensible and appropriate. I am aware that other, older, district plans in the Wellington Region use different dwell time standards or entirely different rule mechanisms for digital signs. However, in my opinion, the Wellington District Plan is the most apt comparable example in that it was recently prepared (in the last two years) and was developed with involvement by OOHMAA and the Out of Home Media industry generally.
- 5.16 In short, because there is no evidential basis for the perception that image transitions are hazardous, and given that most digital signs in New Zealand already operate with dwell times of at least 8-seconds, there is no credible basis to suggest (at least in lower-speed traffic environments of 80km/h or less), that dwell times greater than 8-seconds are necessary to ensure road safety. There is certainly no substantive evidential basis that I am aware of that explains why an 8-second dwell time in lower-speed environments is unacceptable; nor is there any evidence provided as to why 15-seconds or even 10-seconds is more acceptable.
- 5.17 Based on all the above, I consider that the proposed adoption of an 8-second minimum dwell time for lower speed environments as submitted by OOHMAA is preferred for the reasons that:
- (a) it is supported by empirically derived and New Zealand relevant international research;

- (b) it is operationally underpinned by New Zealand's unblemished road safety performance as relates to digital signs, the vast majority of which operate with 8-second dwell times;
 - (c) it will enable consistency by aligning with the recently reviewed Wellington District Plan; and
 - (d) it is consistent with industry best practice in New Zealand.
- 5.18 In higher-speed environments (i.e. above 80km/h) a longer dwell time is justified for the reasons that:
- (a) the road safety databases as relate to digital signs within higher-speed environments are less extensive, meaning that road safety conclusions are less confidently drawn. What I mean by this is that while there are no reported crashes relating to digital signs within higher-speed environments, there are comparatively fewer digital signs in such environments;
 - (b) general risk tolerances reduce at higher travel speeds; and
 - (c) those digital signs in New Zealand that are currently operating in higher-speed traffic environments predominantly do so with 30-second dwell times, this being the default industry-standard dwell time for such environments.
- 5.19 The 30-second minimum dwell time for higher-speed environments was originally sourced from the standards that several Australian main road authorities apply (including Transport for New South Wales, Queensland Department of Transport and Main Roads, and VicRoads), which are typically either 25-seconds or 30-seconds. I note in this regard that, compared to New Zealand, those authorities have considerable experience in the operation of digital billboards within higher-speed arterial road environments including freeways.
- 5.20 Based on the Australian main road experience, supported by the limited number of New Zealand digital signs that are visible from higher-speed traffic environments, it would appear to me that an appropriate minimum dwell time for Lower Hutt's higher-speed road environments (80km/h or higher) would be 30-seconds, rather than what appears to be the arbitrarily chosen value of 35-seconds per the Proposed Plan. I therefore agree with the OOHMAA Submission, and the recommendations of Mr Smith and the s.42A reporting officer, and recommend that SIGN-R3.1.a.viii be modified to

provide for a dwell time of 30-seconds on roads with a base speed limit of 80km/h or higher.

- 5.21 Based on all the above, I fully support the OOHMAA Submission SP 413.10 in relation to amending the dwell time references in sub-parts vii and viii of Rule SIGN-R3.1.a as follows:

vii. *Displays images for a minimum of ~~35~~ 30 seconds before transitioning to the next when visible from a road with a speed limit of 80km/h or more, and*

viii. *In any other case, displays images for at least ~~15~~ 8 seconds before transitioning to the next,*

6. **OOHMAA SP 413.11 - RULE SIGN-R3.1.b – IMAGE TRANSITIONS**

- 6.1 Rule SIGN-R3.1.b, and the amendments sought by OOHMAA in SP 413.11 are as follows:

Activity status: Restricted discretionary

Where:

a. ...

b. *Transitions between images take between 0.1 seconds and 0.5 seconds by way of a cross-dissolve, without flashing, blinking, fading, ~~dissolving~~, or wiping,*

- 6.2 As apparent, the OOHMAA Submission seeks to amend the rule to require image transitions to occur only by way of a cross-dissolve between two images.
- 6.3 Both Mr. Smith and the s.42A reporting officer, concur with OOHMAA's submission.²⁰
- 6.4 The predominant application of 0.5-second cross-dissolve transitions (along with controls on both daytime and nighttime luminance levels, and regardless of dwell time duration), ensures subtle transitions that do not catch the involuntary attention of road users, and therefore do not give cause for road users to be distracted by an image change.
- 6.5 The method and duration of transitioning between images is one of the fundamental areas of safe digital sign operations, as the method of transition must be such that it does not create a visual 'flick' that could otherwise catch the involuntary attention of road users, particularly in their peripheral vision.

²⁰ S.42A Report at [154]

In that regard, all image transitioning should occur by “cross-dissolving”. Cross-dissolving gently blends one image into the next in a manner that substantially minimises the potential for any involuntary distraction.

- 6.6 Use of 0.5-second cross-dissolving is the default industry standard that is predominantly applied by the majority of digital sign operators in New Zealand. The subtle blending between images that it provides is far less eye-catching than other more ‘wholesale’ transitions such as fading or wiping; and other ‘flickier’ transitions such as flashing or blinking.
- 6.7 I therefore support OOHMAA’s submission that SIGN-R3.1.b should be amended to specifically require cross-dissolving.
- 6.8 While I recognise that modifications beyond those referred to in the submissions may be out of scope, it would be professionally remiss of me not to also recommend that SIGN-R3.1.b be further refined to remove the transition duration range of 0.1 to 0.5 seconds as currently drafted, and to replace it with the single value of 0.5 seconds. This is because transitions as fast as 0.1 seconds, even if occurring by way of cross-dissolving, may still have some potential to catch the involuntary attention of road users, and in that regard have potential road safety implications.
- 6.9 I also note in this regard that the PPM recommends in its list of ‘digital billboard standard conditions’ (Appendix C), the following in relation to image transitions:

4. *The digital billboard must have a transition time of 0.5-seconds cross dissolve between image displays*

- 6.10 Based on all the above, I therefore strongly recommend the following further refinement to SIGN-R3.1.b:

Activity status: Restricted discretionary

Where:

a. ...

b. Transitions between images take ~~between 0.1 seconds and~~ 0.5 seconds by way of a cross-dissolve, without flashing, blinking, fading, ~~dissolving~~, or wiping,

7. **OOHMAA SP 413.22 - STANDARD SIGN-S8.6 – LETTER HEIGHTS**

- 7.1 Standard SIGN-S8.6 of the Proposed Plan, and the amendments sought by OOHMAA in SP 413.22 are as follows:

Signs and the transport network

6. The primary message of Ssigns within 10 metres of a legal road or visible from any state highway must comply with the following minimum lettering heights:

Speed limit of road (km/h)	Minimum lettering height (mm)
0-50	150
51-70	200
71-80	250
81 and above	300

This does not apply to authorisation statements on election signs or statements about the status of trademarks.

- 7.2 As apparent, the OOHMAA Submission seeks to amend the Rule to require the minimum letter heights as specified to apply only to the primary message within an image, (that is, not to all text within an image).
- 7.3 Mr. Smith’s review does not support the OOHMAA submission, stating that:

*"I am of the opinion that this removal of control of all text size restrictions, a large number of characters, or small font, intended or not, creates a longer dwell time by a driver on a message in an attempt to determine if the text is of importance. This increase in dwell time increases the driver’s level of distraction and will result in an unsafe outcome to road users."*²¹

- 7.4 The s.42A Reporting officer concurs with Mr. Smith, and states that:

*"I consider the resource consent process is the appropriate process to consider proposals for signage that exceed this standard."*²²

- 7.5 With regard to Mr. Smith’s assertions that “removal” of controls on letter heights will create longer glance durations for drivers, increase driver distractions, and compromise road safety, those assertions are not borne out by any probative evidence that I am aware of.
- 7.6 This therefore means that if what Mr. Smith claims about the adverse effects of displaying text heights that do not meet the current SIGN-S8.6 standard,

²¹ Appendix 4: HCC Signs Chapter – Review of Submissions by Mike Smith at [105]

²² S.42A Report at [251]

are indeed the case, then some evidence of those effects must inevitably be already apparent. The reality is that there is none. When text heights that are less than the SIGN-S8.6 standard are displayed, there are no evident changes to road user behaviours or performances, road users do not display longer glance times, and there is no evidence of any adverse road safety effects. In short, Mr. Smith has theorised outcomes that do not occur in reality.

7.7 If all lettering within an image was required to achieve the heights currently required by SIGN-S8.6, then that would be particularly problematic in terms of displaying:

- (a) text that must legally be displayed but which is not intended to be “read” *per se*, such as terms and conditions, legal disclaimers, and medical disclaimers;
- (b) text within product labels; and
- (c) text that is incidental to an image.

7.8 Some examples of such text are provided as follows:



Figure 1: Example sign image –NZ Police

- Incidental text includes the word 'Police' that appears twice on the policeman's uniform;
- the words 'Slow down' may or may not achieve the SIGN-S8.6 letter height standards, (as it will depend on the size of the screen that the image is displayed on), but are nevertheless a simple and clearly legible component of the message that the billboard is imparting;
- the logos of the four sponsors at the base of the image all contain text that is well less than 150mm, but achieves part of an easily recognisable whole (i.e. each logo *in toto*

achieves the required recognition, without the need to read the 'small print' within each logo).

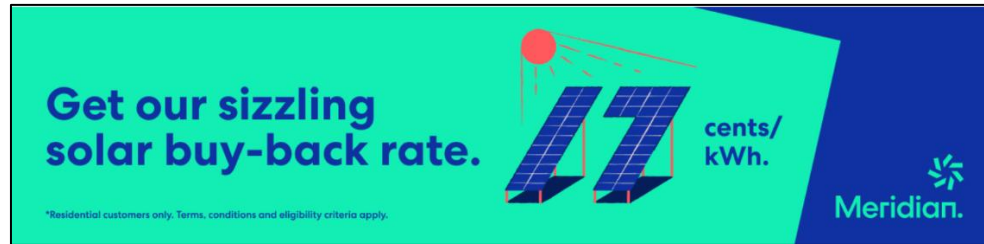


Figure 2: Example sign image – Meridian

- contains 'terms and conditions' text at the base of the image that must be displayed, but is not intended to be "read";
- The Meridian logo forms an integral part of the overall message, is easily recognisable as a whole, but contains a text component that that would not achieve the SIGN-S8.6 letter height standard.

7.9 The TCDM3 and PPM guidelines do specifically refer to text heights within roadside advertising signs, but both make a distinction between the heights of Main Message text, and other text. I further note in this regard that in my experience, where a resource consent contains a minimum letter height condition, it typically relates to the 'primary or main message' following the structure of TCDM3.

7.10 The letter heights recommended by TCDM3 are provided in its Table 6.2 as reproduced below: ²³

Posted speed limit (km/h)	Letter height (mm)		
	Main message	Property name	Secondary message
50	150	100	75
60	175	125	90
70	200	150	100
80	250	175	125
100	300	200	150

Figure 3: Screenshot of NZTA TCDM3 Table 6.2 re letter heights

7.11 I note that the letter heights that are referenced in SIGN-S8.6 are generally consistent with the Main Message letter heights per TCDM3 Table 6.2, apart from the fact that the TCDM3 table includes a specific height for 60km/h

²³ TCDM3 Table 6.2, Section 6.4, Page 6-5

speed limits, whereas SIGN-S8.6 folds the 60km/h value into a 51 - 70km/h speed range. The key point to note however, is that the letter height minima in SIGN-S8.6 appear to have been extracted from the Main Message values of TCDM3, without consideration to Secondary Message text or any other text that would normally form a part of an advertising image.

- 7.12 The more recently released PPM essentially adopts the TCDM3 Table 6.2 values; it retains the distinction between Main Message text and Secondary Message text; and it helpfully clarifies what should not be included in the text height requirements. It states as follows:

*"The minimum lettering height of the main and secondary message, on the digital billboard should be as per Table 6.2 in the TCDM Part 312. Lettering height requirements exclude legal disclaimer text or text forming part of logos, symbols, brand marks or product images, if text is incidental and is not intended to be read by drivers as part of the advertisement."*²⁴

- 7.13 Based on all the above, I fully support the OOHMAA Submission SP 413.22 in relation to Standard SIGN-S8.6 regarding minimum letter heights, particularly for the reasons that:

- (a) the wording as currently anticipated by the Proposed Plan is both unnecessarily restrictive and will be particularly difficult for advertisers to achieve in practice;
- (b) there is no evidentiary basis to support such a restrictive text height standard;
- (c) virtually every sign and billboard in New Zealand (whether static or digital) currently operates without such restrictive text height restrictions applying to all text within an image, yet there have demonstrably been no identifiable adverse consequences as a result; and
- (d) The proposed standard would be materially inconsistent with the most recent guidance on the matter as published by NZTA earlier this month.

- 7.14 I therefore concur with the amendment sought by OOHMAA as follows:

²⁴ PPM Section 7.8, Bullet Point 7, Page 12.

Signs and the transport network

7. *The primary message of ~~S~~igns within 10 metres of a legal road or visible from any state highway must comply with the following minimum lettering heights:*

<i>Speed limit of road (km/h)</i>	<i>Minimum lettering height (mm)</i>
<i>0-50</i>	<i>150</i>
<i>51-70</i>	<i>200</i>
<i>71-80</i>	<i>250</i>
<i>81 and above</i>	<i>300</i>

This does not apply to authorisation statements on election signs or statements about the status of trademarks.

8. **OOHMAA FURTHER SUBMISSION F21 TO NZTA SP 385.80 – SIGN-P4 – VISIBILITY OF SIGNS FROM STATE HIGHWAYS**

- 8.1 The OOHMAA Further Submission F21 to the NZTA SP 385.80, opposes NZTA's amendment to Policy SIGN-P4.6 that relates to the state highway speed limit threshold from which signs should not be visible; and opposes the introduction of a new Policy SIGN-P4.7 that relates to the management of the cumulative effects of digital billboards. I wish to address only the NZTA proposed amendment to Policy SIGN-P4.6.

- 8.2 Policy SIGN-P4.6, and the amendments sought by NZTA in SP 385.80, are as follows:

SIGN-P4 Digital and Illuminated Signs

Provide for digital signs and illuminated signs where:

...

6. *The sign is not visible from a state highway or road with a speed limit of ~~80~~ 70 km/h or more*

- 8.3 Mr. Smith's review supports the NZTA submission, and notes as follows:

"A threshold of ≥ 70 km/h, as sought by NZTA, aligns with an Arterial road or similar status. A review of the National Speed Limit Register for Hutt City reveals that roads of 70 km/h are best described as peri-urban, Industrial, or rural (e.g. Harcourt Werry Drive) and align in characteristics with that of 80 km/h and above.

*The relief sought by NZTA to amend the policy to a 70 km/h threshold reflects the intent of the TCDM, therefore the relief sought should be adopted."*²⁵

²⁵

- 8.4 The s.42A Reporting Officer supports the NZTA submission, noting that:

*"...I agree with their assertion that the reduction in the speed limit will result in an increase in safety and that there is a potential benefit from the proposed amendment."*²⁶

- 8.5 In my opinion, there is no credible basis for lowering the speed limit threshold from which signs should not be visible from a state highway. There is certainly no information available from the NZTA CAS database to suggest that existing signs facing state highways with speed limits below 80km/h are compromising road safety in any identifiable way.
- 8.6 I note that the Wellington District Plan refers to an 80km/h threshold speed limit for consideration of digital signs that face a state highway. There would be beneficial consistency if that same threshold was also applied in the Proposed Plan as per the originally notified version of Policy SIGN-P4.6.
- 8.7 I also note that following a multi-year process of development, the PPM has considered the distinction between lower-speed state highways and higher-speed state highways in its introductory guidance to the assessment of digital billboards. In particular, it specifically refers to "lower-speed state highway environments" as having a speed limit below 80km/h, and "higher-speed state highway environments" as having speed limits of 80km/h and above.²⁷ SIGN-P4.6 as notified aligns directly with the NZTA PPM definitions; whereas the amendments to SIGN-P4.6 as sought by NZTA (in its submission that pre-dates the PPM) would make it inconsistent with their own guidance.
- 8.8 For the above reasons, I endorse OOHMAA's further submission that requests rejection of the SIGN-R3.1.a.vii. amended speed limit threshold as sought by NZTA in SP 385.84.

9. **OOHMAA FURTHER SUBMISSIONS F21 TO NZTA SP 385.84 – SIGN-R3.1.a – RESTRICTED DISCRETIONARY CRITERIA**

- 9.1 The OOHMAA Further Submission F21 to the NZTA SP 385.84, opposes NZTA's amendments to subparts iv and vii of Rule SIGN-R3.1.a; and it opposes the introduction of two new sub-parts ix and x to that Rule.

²⁶ S.42A Report at [93]

²⁷ NZTA PPM September 2026, Section 7, paragraphs 2 and 3, Page 6

Rule SIGN-R3.1.a.iv

- 9.2 Rule SIGN-R3.1.a.iv relates to signs not being visible from a state highway or road with a speed limit of 80km/h or more. This rule, and the amendments sought by NZTA in SP 385.84, are as follows:

SIGN-R3 Digital Signs

1. Activity Status: Restricted discretionary

Where:

a. The sign:

...

*iv. Is not visible from a state highway or road
with a speed limit of ~~80~~70km/h or more,*

- 9.3 For the same reasons as I have just addressed in relation to NZTA's requested amendment to SIGN-P4 ²⁸, I consider it unnecessary to lower the speed limit threshold as suggested by NZTA. I therefore fully support OOHMAA's opposition to the requested amendment, and I agree that it should be rejected.

Rule SIGN-R3.1.a.vii

- 9.4 Rule SIGN-R3.1.a.vii relates to image dwell times. This Rule, and the amendments sought by NZTA in SP 385.84, are as follows:

a. The sign:

...

vii. Displays images for an appropriate dwell time determined so that no more than 5 per cent of drivers are exposed to image changes ~~minimum of 35 seconds before transitioning to the next~~ when visible from a road with a speed limit of 80km/h or more,

- 9.5 I have already comprehensively addressed image dwell times in relation to SIGN-R3.1.a.vii as part of the OOHMAA submission SP 413.10 in my Section 4 at [5.1] to [5.21]. As noted therein, it is my opinion that SIGN-R3.1.a.vii should be amended to lower the dwell times from 15 seconds to 8 seconds for lower speed road environments, and from 35 seconds to 30 seconds for higher speed road environments.

²⁸

Per paragraphs [8.1] to [8.7] on Pages 32 and 33

9.6 The NZTA submission seeks a significant departure from the Rule that would require measurements of sight distances and travel speeds, and subsequent calculations, to determine a dwell time. It is not a straight-forward process, and the results will vary in every case, even for digital signs on the same road.

9.7 Mr. Smith's review does not support the NZTA dwell time calculation methodology, noting as follows:

*"The relief sought by NZTA would require a specific calculation in the first instance and could be subject to a poor understanding of the principles that underly the calculation to arrive at a figure."*²⁹

9.8 The s.42A Reporting Officer does not support the NZTA submission with its dwell time methodology, recommending instead the set dwell time values for both lower speed and higher speed roads as follows:

*"Given the advice of Mr Smith, and despite a general preference for regional consistency, I recommend a minimum dwell time of 10 seconds for roads with posted speed limits less than or equal to 80km/h and minimum dwell time of 30 seconds for roads with a posted speed limit greater than 80km/h."*³⁰

9.9 The dwell time methodology as proposed in the NZTA submission for higher speed roads is bespoke, and the specified limit of 5% of road users who may see an image change is, in my opinion, completely arbitrary (i.e. it has no technical foundation whatever). I am aware that the methodology has in the past been occasionally promulgated by NZTA. Significantly, however, its lack of a credible technical foundation, and its questionable utility, is probably best illustrated by that fact that it has not been included in either the TCDM3 or the recently released PPM, (although to reiterate, I do not entirely agree with the PPM's included dwell time calculation methodology, and in this instance, as set out above, I support 8 seconds and 30 seconds depending on the speed environment that a digital sign is oriented to).

9.10 Accordingly, for all the above reasons I support OOHMAA's further submission that the amendments to SIGN-R3.1.a.vii as sought by NZTA in SP 385.84 should be rejected.

²⁹ Appendix 4: HCC Signs Chapter – Review of Submissions by Mike Smith at [58]

³⁰ S.42A Report at [153]

Proposed New Rule SIGN-R3.1.a.ix

- 9.11 The proposed new Rule SIGN-R3.1.a.ix as proposed by NZTA relates to visibility from, or within, 100m of a state highway on ramp and/ or off-ramp, as follows:

a. *The sign:*

...

ix. Is not visible from, or within 100m of, a State Highway on ramp and/or off ramp.

- 9.12 Mr. Smith's review in relation to the NZTA submission is supportive of the exclusion of digital signs within 100m of state highway on-ramps and off-ramps. He comments as follows:

*"As presented in SIGNS P4, on and off ramps are typically complex intersections that demand full concentration of the driver. They are also locations where driver distraction is often cited as a causative factor in a crash. While a crash may be very unlikely, the resultant injury would be serious to fatal. Utilising the Safe System Audit process as a quantitative measure, this would result in a risk rating of Significant to Serious. This requires remedial action to be undertaken. I therefore assess, based upon this quantitative measure, that the inclusion of digital billboards with 100m of would have effects on user safety that are more than minor."*³¹

- 9.13 I note that the s.42A reporting officer has not evaluated the submission at all, but has recommended inclusion of the rule in the amended provisions at Appendix 2 of the s.42A report.

- 9.1 In my opinion, a rule that requires separation from an on-ramp or off-ramp, or for that matter any other road feature, is inappropriate, as such details should more appropriately be matters of assessments rather than absolutes. I note that all digital signs require a resource consent, and that the matters of discretion (for restricted discretionary digital signs) and the objectives and policies of the SIGN chapter, comprehensively cover transport safety matters.

- 9.2 It should also be borne in mind in this regard that on-ramps and off-ramps have two ends. At the state highway end of an off-ramp or on-ramp, other rules already manage digital signs that are visible from higher speed state highways, with the result that another rule relating to on and off-ramps is unnecessary.

³¹

Appendix 4: HCC Signs Chapter – Review of Submissions by Mike Smith at [52]

- 9.3 Where an on-ramp starts or an off-ramp terminates within the surface street network, typically in Lower Hutt's case by way of standard signalised or roundabout intersections, then it would in my opinion be both unreasonable and unnecessary for the 'non state highway' ends of ramps to be subject to a 100m digital sign exclusion.
- 9.4 This complexity becomes even more apparent with Lower Hutt's connections to SH2 where consideration of whether a surface street is part of an on-ramp or off-ramp or both, can be particularly vague, as SH2 is predominantly connected to the surrounding road network by surface street intersections. As an example of potential difficulties of interpretation, is it logical for the Harbour View Road / Melling Link connections to SH2 to realistically be considered as on-ramps / off-ramps? And if so, where does each on-ramp / off-ramp start and finish?
- 9.5 In my opinion, while the proposed Rule ix might work for true interchange on-ramps and off-ramps serving a grade-separated motorway (where ramp start and end points are readily identifiable), that is not the case in Lower Hutt. In this context, and noting that many of the 'on-ramps' and 'off ramps' are actually simply intersections with local roads, I certainly do not agree with Mr Smith that digital signs that are within 100m of an on-ramp/off-ramp will have adverse traffic safety effects that are more than minor, in every and all instances.
- 9.6 Accordingly, for the reasons that the addition of Rule SIGN-R3.1.a.x is impracticable, and already largely encompassed within other rules or provisions that require an assessment in a resource consent application, I support OOHMAA's request in its further submission that it be rejected.

Proposed New Rule SIGN-R3.1.a.x

- 9.7 NZTA's proposed new Rule SIGN-R3.1.a.x relates to the presence of other digital signs within a driver's field of vision as follows:
- a. The sign:
- ...
- [x. Is not located where there are any other digital billboards in a driver's field of vision.](#)
- 9.8 Mr. Smith's review in relation to the NZTA submission is not supportive of the addition of Rule SIGN-R3.1.a.x. He comments as follows:

"In reviewing the material supplied by Council staff, ... they rebut with the following "It is not practical to preclude a digital billboard in an environment where

another digital billboard may be in a driver's field of vision. Digital signs already require resource consent in every circumstance, and the matters of discretion (and objective and policies) direct an assessment of cumulative effects. An additional rule is not necessary."

It is noted that SIGNS P4 considers submissions that the "cumulative effects of digital billboards are managed". This provision, if included, requires an applicant to respond to the cumulative effects of digital billboards, and is considered a suitable level of assessment.

Accordingly, I recommend that the relief sought by NZTA, being "Is not located where there are any other digital billboards in a driver's field of vision", not be adopted..."³²

- 9.9 I note that the s.42A reporting officer has not evaluated the submission at all, but has recommended inclusion of the rule in the amended provisions at Appendix 2 of the s.42A report.
- 9.10 In my opinion, this proposed new rule regarding the presence of a digital sign that may be interpreted to sit in the same road user field of vision as another existing sign, is a matter to be included in an effects assessment when undertaking an 'in the round' technical assessment of any digital sign location, (as much as any other road feature would come into that assessment). All digital signs require resource consent, and its relationship to other signs and digital signs would be comprehensively assessed in that process. However, given the absence of any probative road safety basis for requiring it as a limiting rule, it should not in my opinion be included in SIGN-R3.1.a at all.
- 9.11 In terms of the need for such a rule, I am unaware of any situation where the contemporaneous visibility of two or more digital signs within a road user's forward field of vision has resulted in compromised road safety. There are now numerous examples (including in Wellington City but more especially in Auckland) of locations where two or more digital signs are contemporaneously visible. In all cases, however, these visual relationships exist without any evident road safety effect whatsoever.
- 9.12 In my opinion, the rule as proposed in the NZTA submission appears to have been arbitrarily promulgated, with no recognised technical basis.
- 9.13 In terms of existing guidance that is available to assist in the effects assessment of multiple digital signs in the same field of vision, I note that:

³²

Appendix 4: HCC Signs Chapter – Review of Submissions by Mike Smith at [54] – [56]

- (a) The TCDM3 Guide provides a table of minimum recommended and desirable longitudinal spacing between adjacent roadside advertising signs, where the minimum recommended values range between 50m in 50km/h speed environments to 80m in 100km/h speed environments.³³ Even then, TCDM3 notes that the recommended spacings:

...may not be achievable in many circumstances, such as those in lower speed, urban area (eg 60km/h or less). However, where they are, both advertisers and road users will benefit from the resulting layout.

- (b) The PPM guide, which is specific to state highways, recommends that:

... the longitudinal spacing between digital billboards be considered against Table 5.3 of TCDM Part 3 desirable spacing criteria. However, where the Table 5.3 desirable spacing cannot be achieved, the applicant should demonstrate that the proposed spacing will not result in unacceptable driver distraction, or cumulative demand on driver attention.

A greater spacing distance (or other operational controls) may be required where a site-specific safety assessment identifies that multiple digital billboards would be within a drivers' field of vision⁹ or readable at the same time, may be perceived as sequential messaging, or are located in a complex road environment...

- 9.14 Neither of NZTA's signage guidance documents (particularly the most recently released PPM) describes absolutes in relation to sign separations. Certainly, neither guideline prescribes that two or more digital signs cannot exist with the same field of vision. Rather, both documents recognise the need for assessment. In short, therefore, what NZTA are proposing by way of the addition of Rule SIGN-R3.1.a.x is inconsistent with its own published guidance on this matter.
- 9.15 For all the above reasons therefore, it is my opinion that the addition of sub-part x to Rule SIGN-R3.1.a is impracticable, inconsistent with published guidance, and addresses a matter that is already required to be assessed for all digital sign proposals. Accordingly, I support OOHMAA's recommendation in its further submission that Rule SIGN-R3.1.a.x should be rejected.

³³

TCDM3, Section 5.4 'Sign Position', Table 5.3, Page 5-4

10. **OOHMAA FURTHER SUBMISSIONS F21 TO NZTA SP 385.91 – SIGN-SIGN-S8 – SIGNS AND THE TRANSPORT NETWORK**

Standard SIGN-S8.4 – Applicable Speed Limit

- 10.1 Standard SIGN-S8.4 as notified requires standards relating to image content for signs that are visible from a state highway, or from roads with a speed limit of 80km/h or more. Part of NZTA submission SP 385.91 seeks to reduce the speed limit threshold of roads from which the image content standards would apply from 80km/h to 70km/h, as follows:

SIGN-S8

Signs and the transport network

...

4. *Signs visible from any state highway or road with a speed limit of ~~80~~ 70 km/h or more must not:*

- 10.2 Mr. Smith's review agrees with the NZTA submission that a reduction in the speed limit threshold is appropriate. He notes that:

*I concur with a reduction in the assessment speed value from 80km/h to 70 km/h. This ensures consistency with other chapters.*³⁴

- 10.3 The S.42A Reporting Officer also accepts a reduced 70km/h speed limit threshold as a 'precautionary approach':

*In response to Waka Kotahi's submission, I accept that lowering the threshold to 70km/h could result in a decrease in crashes. I consider a precautionary approach is prudent in this circumstance.*³⁵

- 10.4 Previously in my evidence I have already addressed the reasons why I consider the reduction in the speed limit threshold from 80km/h to 70km/h to distinguish lower speed from higher speed environments is inappropriate. Those reasons include:

- (a) The lack of any credible road safety basis for the amendment;
- (b) The inconsistency it would create relative to the Wellington District Plan; and

³⁴ Appendix 4: HCC Signs Chapter – Review of Submissions by Mike Smith, at [97]

³⁵ S.42A Report at [245]

(c) The inconsistency it would create with NZTA's own published guidance as to how lower speed traffic environments are distinguished from higher speed environments when assessing signs.

10.5 In my opinion, those same arguments remain relevant to the consideration of image content standards.

10.6 Accordingly, for the reasons I have already outlined, I support OOHMAA's recommendation in its further submission that the NZTA proposed amendment to Standard SIGN-S8.4 related to the reduction in the speed limit threshold be rejected.

Standard SIGN-S8.4.a – Image Content – Logos

10.7 Standard SIGN-S8.4.a as notified specifies that contact details are not to be displayed on signs that are visible from a state highway, or from roads with a speed limit of 80km/h or more.

10.8 The NZTA submission SP 385.91 also seeks to include logos in the list of contact details that are to be excluded from display on signs that are visible from a state highway, or from higher speed roads. The resultant amendments to SIGN-S8.4.a would be as follows:

SIGN-S8

Signs and the transport network

...

4. *Signs visible from any state highway or road with a speed limit of ~~80~~ 70 km/h or more must not:*

a. *Contain phone numbers, email addresses, web addresses, social media handles, physical addresses (other than the address of the site on which the sign is located), or any other form of contact details, or logos, or*

10.9 Mr. Smith does not agree with the exclusion of logos - although (without any supporting basis) does seek to restrict the display of logos to a single company logo. He notes as follows

I consider such a restriction as submitted by NZTA as being unworkable. However, I do present that an advertising sign should have a SINGLE company log only.³⁶

10.10 The S.42A Reporting Officer also rejects the exclusion of logos:

³⁶

I do not agree with Waka Kotahi's submission seeking to include a restriction on logos. I note that OOHMAA opposes the Waka Kotahi submission, arguing that logos are a common element to signage and do not result in adverse effects on the transport network. I accept Mr Smith's advice that the proposed amendment is unworkable.³⁷

- 10.11 While I can understand the potential logic of controlling the display of contact information that might induce a road user to either attempt committal of that information to memory (perhaps at the expense of full concentration on the driving task), and/or to attempt to record that information in some way, that same logic does not apply to logos.
- 10.12 Indeed, the display of logos is an efficient means of identification insofar that logos are typically recognisable at a glance without the need to 'read' the identification. Hence, why logos are frequently used in signage graphics, including most (if not all) NZTA advertising signs.
- 10.13 I am unaware of any evidence whatsoever (either in practice or from the literature) of any actual or potential adverse road safety outcomes associated with the display of logos.
- 10.14 Figure 1 and Figure 2 on Pages 29 and 30 above, are excellent examples of the effective inclusion of logos. As apparent in the graphics, the logos contribute to the overall message and assist to emphasise the import and impact of each graphic in a way that does not require or cause the observer to linger on the graphic.
- 10.15 Accordingly, for the reasons I have described, I endorse OOHMAA's request in its further submission that the NZTA proposed amendment to Standard SIGN-S8.4.a be rejected.

11. SUMMARY AND CONCLUSIONS

- 11.1 My evidence has addressed the traffic engineering and road safety issues relevant to OOHMAA's Submissions and Further Submissions in relation to the Signs provisions of the Proposed Plan. In particular, my evidence has addressed:

- (a) Dwell times;
- (b) Image transitioning;

- (c) Speed limit thresholds to distinguish between higher-speed and lower-speed environments;
 - (d) Image content including:
 - (i) Letter heights;
 - (ii) Use of logos
 - (e) Signs that are visible to other signs; and
 - (f) Sign proximities to on-ramps and off-ramps
- 11.2 This evidence draws upon the actual road safety implications of digital signs in New Zealand, and is based on the combined inputs of relevant research, current best practice; consistency with applicable New Zealand guidelines; and measured road safety performances. This has enabled me to objectively assess the various Proposed Plan changes that have been promulgated.
- 11.3 From those assessments, I am able to state my full support for the following submissions by OOHMAA:
 - (a) SP413.10 in relation to SIGN-R3.1.a which addresses dwell times to apply to digital signs in lower-speed and higher-speed traffic environments.
 - (b) SP413.11 in relation to SIGN-R3.1.b which addresses cross-dissolve image transitions. In this regard, I go beyond the OOHMAA submission to also recommend that the image transition duration should be specified to be 0.5-seconds, and not the 0.1 to 0.5 second range as currently drafted.
 - (c) SP413.22 in relation to SIGN-S8.6 which addresses text height within images.
- 11.4 I am also able to fully endorse the OOHMAA further submissions to reject the following submissions by NZTA:
 - (a) NZTA submission SP385.80 to SIGN-P4 in relation to the speed limit threshold to distinguish between lower speed and higher speed environments.
 - (b) NZTA submission SP385.84 to SIGN-R3.1.a in relation to:

- (i) the speed limit threshold to apply for exclusion of signs (SIGN-R3.1.a.iv);
 - (ii) the inclusion of a bespoke dwell time calculation (SIGN-R3.1.a.vii);
 - (iii) the addition of a new rule that excludes digital signs that are visible from an off-ramp or on-ramp (SIGN-R3.1.a.ix); and
 - (iv) the addition of a new rule that excludes digital signs that may be contemporaneously visible with another sign (SIGN-R3.1.a.ix).
- (c) NZTA submission SP385.91 to SIGN-S8.4 in relation to:
 - (i) the speed limit threshold to apply for controls on image content; and
 - (ii) the addition of logos as one of the image content items to be excluded from signs in higher-speed environments.

Brett Harries

29 September 2026