

**BEFORE INDEPENDENT COMMISSIONER APPOINTED BY
HUTT CITY COUNCIL**

IN THE MATTER Resource Consent for the installation of a
digital billboard at 47 The Esplanade, Petone.

APPLICANT Mediaworks Outdoor Ltd

**STATEMENT OF EVIDENCE OF LUKE MICHAEL BENNER
TRAFFIC ENGINEERING
MAY 2024**

1. INTRODUCTION

- 1.1** My Name is Luke Michael Benner. I am the sole owner and director of Luke Benner Consulting Ltd, a traffic and transportation engineering consultancy based in the Wellington Region. I hold a New Zealand Diploma in Engineering (Civil) and I am a member of the Engineering New Zealand Transportation Group.
- 1.2** I have approximately 8 years' experience and my career to date has involved 5 years working within Local Government across the areas of traffic engineering, road safety and the planning and design of walking and cycling projects with my most recent role between 2019 and 2021 as Porirua City Council's Traffic and Road Safety Engineer.
- 1.3** I have worked within my own consultancy since 2019 (part-time) and full-time since early 2021 providing traffic engineering services to public and private clients across the Wellington & Manawatu Regions. My experience includes completing traffic impact assessments as well assessing consents from a transport perspective for several councils. I have also carried out road safety audits, intersection design projects as well as the planning and delivery of public transport projects.

2. CODE OF CONDUCT

- 2.1** Although this is a council hearing, I have read the Environment Court's Code of Conduct and agree to comply with it. My qualification as an expert is set out above. I can confirm that the issues addressed in this statement of evidence are within my area of expertise.

3. INVOLVEMENT AND BACKGROUND

- 3.1** I was engaged by Hutt City Council in April 2024 to prepare traffic engineering evidence on behalf of Council with respect to the resource consent application by Mediaworks Outdoor Ltd for the installation of a digital billboard at 47 The Esplanade, Petone.
- 3.2** I have reviewed a prior assessment carried out by councils previous traffic consultant – David Wanty of Wanty Transportation Consultancy Ltd. I have also reviewed the original resource consent application documents including

the original AEE and transport assessment by Stantec. I have also reviewed the additional documents prepared by the applicant for public notification, in particular the planning information report and the supplementary traffic report.

- 3.3** I confirm that I have read through the submissions received, where they relate to traffic safety and detailed feedback from submitters in this regard.

4. SCOPE OF EVIDENCE

- 4.1** My evidence will cover the following matters:

- a). The existing transport environment
- b). Proposed digital billboard.
- c). Traffic/road safety assessment
- d). Responses to submissions
- e). Conclusion & Proposed Conditions

5. THE EXISTING TRANSPORT ENVIRONMENT

- 5.1** Under the Operative District Plan, The Esplanade is classified as an arterial route, serving as a key transport corridor for public transport, freight movement and general traffic accessing residential and commercial areas. Within the vicinity of the proposed billboard location, The Esplanade contains a single traffic lane eastbound and two traffic lanes westbound, one of which operates as a bus lane during the morning peak period. A wide vegetated median separates the opposing traffic lanes.
- 5.2** The Esplanade features kerbside parking along its northern side while there are pockets of kerbside parking on its southern side, with most of the parking located off street. Predominant land uses include commercial and office as well as areas of retail and residential. There are several side streets off The Esplanade with most operating as left in and left out while some also have right turns permitted. Pedestrian crossing opportunities are limited, particularly to the west of Victoria Street, noting that Petone foreshore is an attractor for people on foot.
- 5.3** The Esplanade within the vicinity of the proposed billboard has an estimated annual daily traffic volume (ADT) 11,201 vehicles per day with 9% estimated

to be heavy vehicles. Source – Mobile Road. Further east (east of Cuba Street) the ADT is closer to 20,000 vehicles per day.

- 5.4** For the purposes of understanding the crash frequency along The Esplanade, it is typical to review the crashes that have occurred over the prior five-year period. On this basis a search of NZTA's crash analysis system (CAS) has been completed covering an area 200 metres east and west of the proposed location of the billboard with this showing that there have been thirteen crashes over this time with twelve being non injury and one resulting in minor injuries. The location of the reported crashes is shown as attachment 1.
- 5.5** Of the thirteen reported crashes, just over 50% were related to overtaking and or merging with the remaining crashes being a mix between crossing/turning and rear end/obstruction type crashes. Just one of the crash reports mentions a driver being distracted however this was related to the inside of the vehicle as opposed to anything within the road environment. There have been three rear end type crashes, with all being related to slow moving or heavy traffic. Importantly none of the reported crashes have involved pedestrians or cyclists.

6. PROPOSED DIGITAL BILLBOARD

- 6.1** It is proposed by the applicant (Mediaworks Outdoor Ltd) to install a large double sided electronic billboard within the eastern extent of on off street carpark that is associated with a Bunnings hardware store and a range of other businesses. Based on the second supplementary planning report prepared by applicant it is understood that the applicant had originally sought resource consent for a double-sided portrait digital billboard at 9.5m high with each face to be 7m by 3.5m wide with a separation from the ground of 2.5m. A second option has been proposed by the applicant for a landscape digital billboard that is 8m high with each face to be 9m wide by 3m tall with a separation from the ground of 4.7m.
- 6.2** The New Zealand Transport Agency holds guidance on the design and installation advertising signs with this located within the Traffic Control Devices Manual – Part 3. Noting there is a lack of guidance on digital billboards specifically, TCDM part 3 is considered to still provide adequate guidance for these types of signs. Throughout this section, commentary is included on each of the proposed billboards design characteristics.
- 6.3** The proposed positioning of the digital billboard, whether installed in a portrait or landscape orientation means that it will be well within a driver's field of vision when approaching along the Esplanade from the East or West. A drive through was carried out in both directions with it expected the billboard will be visible from more than 100 metres away. Given the posted speed limit of 50km/h and the fact that traffic through this area is often moving much slower, the recommended forward sight distance of 80m is satisfied under TCDM – part 3.
- 6.4** At a minimum the bottom of the digital billboard will have vertical separation of 2.5m from the ground which is highly unlikely to obscure the sight distance of a vehicle joining the road from a vehicle crossing or intersection (both being relevant in this case), or risk concealing other traffic signs from view of an approaching driver. The positioning of the sign is generally consistent with the guidance on this matter.
- 6.5** The digital billboard will be located wholly within private property, with each face to be well within the boundary line (i.e. not hanging out over the

footpath). Given the posted speed limit of 50km/h on The Esplanade, the sign positioning meets the minimum lateral offset requirement of at least 1.5m under the guidance.

- 6.6** The proposed digital billboard will be located around 40 metres of the existing Bunnings static billboard/sign to the west. While the posted speed limit on The Esplanade is 50km/h the actual average operating speeds are expected to be somewhat lower given the often-congested traffic conditions in this location. The Bunnings billboard also does not contain advertising material as such. These two factors contribute to the assessment that the 40m separation distance between billboards is appropriate and acceptable.
- 6.7** The indicated location of the digital billboard is such that given it will be highly visible over a distance greater than 100 metres, the risk of a motorist needing to slow down to read it will be low.
- 6.8** The position of the proposed digital billboard to the nearest intersection will be less than the 100 metres recommended under TCDM – part 3. Nevis Street will be within 30 metres of the billboard. While there could be concerns around a driver becoming distracted when waiting to enter the traffic flow, the position of the Nevis St intersection hold line is such that a full line of sight is still achievable beneath the billboard without a driver having to look past or around it.
- 6.9** It is noted that the sign support/foundation will be located well within the adjacent property boundary, with the area being slightly raised from the level of the road. The sign support & foundation appears to be well setback from the road, such that the risk of it being struck by an errant vehicle is particularly low.
- 6.10** TCDM – part 3 contains recommendations around sign design including legibility, messaging, style, and layout. Some of these considerations are particularly prescriptive and are fundamental to maintaining a safe road environment, as such where appropriate, consent conditions should be stated to ensure alignment with guidance.
- 6.11** The applicant is proposing each image or message on the digital billboard will be displayed for a minimum of 8 seconds with a 0.5 second cross fade between different images. This is generally consistent with TCDM – part 3.

Given the high volume of traffic along The Esplanade, a longer minimum dwell time of 20 to 30 seconds may be more appropriate to reduce the number of times the image changes while a driver is approaching.

- 6.12** Given the proposed location of the billboard will be where road users are not being required to perform several actions at the same time (i.e. mid-block vs an intersection) it is assessed that the risk of distraction is low, however where distraction does occur from time to time, the consequence and associated severity of this in the event of a crash will be low. This is discussed further within section 7 of this evidence.

7.0 ROAD SAFETY ASSESSMENT

- 7.1** This section of my evidence discusses any potential implications on road safety as result of the proposed digital billboard being granted resource consent.

- 7.2** As mentioned in section 5 of this statement of evidence, there has been 13 reported crashes within 200 metres east and west of the proposed digital billboard location on The Esplanade. None of the reported crashes have resulted in serious injuries or worse. This crash record would suggest that where crashes are occurring., the impact speeds are within safe system limits (i.e. survivable without death or serious injuries).

- 7.3** It can be expected that current free flow vehicle operating speeds eastbound on The Esplanade are lower than the posted speed limit of 50km/h. This can be attributed to the density or volume of traffic as well as the presence of numerous driveways and side streets feeding traffic on and off The Esplanade. At peak times, heavy congestion is experienced for vehicles traffic travelling in both directions along The Esplanade with vehicles often moving at a crawl.

- 7.4** As mentioned briefly in section 6 of this statement of evidence, the applicant is proposing to introduce a minimum 8 second dwell time for each image/message on the digital billboard. During times of free-flowing traffic, the digital billboard can be expected to change image or message once if not twice during the time in which an approaching driver can see it. Based on the existing crash history there is no pattern with respect to driver

distraction that is likely to be exacerbated by the installation of the digital billboard.

7.5 If in the circumstance a driver is distracted by the digital billboard, the likely crash types would be rear end/obstruction or potentially a side impact with a vehicle exiting the Nevis Street intersection. Based on the traffic environment and likely operating speeds (less than 50km/h when free flowing) and potentially as low as 10-20km/h when congested, the impact speeds will be within safe system limits (side impact: 50km/h, rear end/obstruction: 70km/h), Source – Austroads.

7.6 The existing traffic and speed environment creates an environment where if a mistake is made by a driver (such as getting distracted), the severity of any crash is highly likely be low resulting in a situation where serious injuries or worse are very unlikely. On this basis, there is not expected to be any significant effects on road safety because of the digital billboard gaining resource consent.

8.0 SUBMISSIONS & MY RESPONSES

8.1 Of the 62 submissions received on the proposed electronic billboard installation, over half have raised concerns with respect to traffic safety, in particular in respect to the proposed minimum 8 second dwell time as well as effects on vulnerable road users including cyclists.

8.2 Firstly, consideration is given to the matter of minimum dwell time. My own drive through along The Esplanade, suggests that the billboard would start to become visible when within about 150 metres of it. On the basis of approaching the billboard at the posted speed limit of 50km/h, this equates to travelling at around 14 metres per second. If the image on the billboard were to change as soon as it came into view of a driver, it would be expected to change again when a driver is within 40 metres of it in which case that driver would only see the second image for a few seconds before passing the billboard.

8.3 It is recognised that due to the often congested nature of the Esplanade, vehicle operating speeds are regularly much lower than the posted speed limit (for instance 20-30km/h), and in this instance an approaching driver would potentially see the sign switch images or messages three times. In

reviewing available research on the matter of dwell time, it is pretty inconclusive around identifying a heightened crash risk where a digital billboard is located midblock or between intersections.

- 8.4** In the event that a longer dwell time was adopted (for instance 30 seconds), it is likely that road users travelling at the posted speed limit (50km/h) or below (30km/h) would not see billboard change images while approaching it, unless traffic is at a near standstill. This would be expected to have a positive impact on reducing the risk of distraction where if a driver is not engaged by the billboard already when approaching it and it doesn't change imagery at all until the driver has passed it, the risk of sudden distraction would be very low.
- 8.5** With appropriate controls around sign content, brightness & text height it is assessed that proposed electronic billboard could be installed and operated in a way which does not contribute to a reduction in the road safety performance on The Esplanade, noting that this can never be guaranteed.
- 8.6** Within the submissions, concerns have been raised with regard to the safety of vulnerable road users, in particular cyclists. It is understood that the concern is less so about a cyclist becoming distracted and more so related to a driver potentially striking a cyclist.
- 8.7** A follow up site visit was carried out on the 20th May 2024 during the afternoon peak period to understand the volume of cyclists travelling along The Esplanade. It was evident that there is a reasonably high volume of cyclists travelling east bound along The Esplanade during the afternoon/evening peak (after 4pm). Coinciding with the peak in cyclist numbers was the peak in vehicle traffic travelling in this direction too.
- 8.8** From late afternoon, vehicle traffic heading east off the Hutt Road/The Esplanade roundabout begins to build travelling in the direction of the proposed billboard, with speeds generally around 30km/h. At this time the speed differential between cyclists and vehicles appears to be very low.
- 8.9** It is assessed the afternoon peak period is when the exposure of cyclists to vehicle traffic is at its highest, however this also coincides with where the speed of traffic and that of cyclists is similar, suggesting that the risk of cyclist being struck by a vehicle and being seriously injured or worse is also lower

at this time (when considering the speed at which a cyclist can be expected to come out of crash without serious injuries or worse).

- 8.10** Where available research lacks conclusive evidence as to electronic billboards leading to a heightened risk of crashes occurring, there is even less evidence available that shows cyclists are at a heightened risk of being involved in a crash where an electronic billboard is present.

8.11 Conclusion & Proposed Consent Conditions

- 8.12** Based on my traffic engineering expertise and on the evidence prepared there are no significant concerns from a traffic engineering and road safety perspective regarding the consenting and installation of the proposed digital billboard.

- 8.13** While the proposed 8 second minimum dwell time is unlikely to cause a degradation in the road safety performance along The Esplanade, a conservative approach would suggest that a longer minimum dwell time of 30 seconds would further de-risk road user distraction from occurring. Stated below are the proposed traffic consent conditions.

8.14 Operation (Shut Down Ability):

- The signage must have a 'shut down' feature where, in the event of a malfunction, the messages will be replaced by a solid black colour until the malfunction is resolved.
- Prior to operation of the sign commencing, the consent holder must provide the CMO with details of an emergency (24/7) contact number and an intervention process to enable the consent holder to disable the signage by manual intervention, both remote and on-site, should the automatic intervention fail.

8.15 Image Content (The Signage Must):

- use materials that are non-reflective to prevent any sunlight or headlight reflection;
- use lettering and/or symbols that are clearly legible;
- have a message that contrasts with the background so that the message is readily understood by an approaching driver;

- Image content must be static, and must not incorporate flashes, movement, scrolling, animation, full motion video, sequential advertising over multiple frames, multiple advertisements in one frame.
- operate with a minimum dwell time of 30 seconds;
- Images must transition from one to the next via a 0.5 second dissolve.

8.16 Image Content (The Signage Must Not):

- use graphics, colours or shapes that could cause confusion or conflict with any traffic control device or invite or direct a driver to undertake an action that could conflict with any traffic sign or traffic control device;
- contain large areas (more than 25%) of the colours green, orange or red;
- invite or direct a driver to take some sort of driving action;
- include image content that incorporates flashes or movement, play music or sound, or involve scrolling, animation or other dynamic effects;
- include multiple advertisements in one frame;
- include images linked to “tell a story” across two or more sequential images; or
- contain more than one contact detail (for example phone number, email addresses or web address).

8.17 The minimum letter height for a main message displayed on the signage is 150mm and a secondary message is 75mm.

8.18 The luminance of the signage must be controlled and automatically adjusted in response to ambient light changes to ensure it does not exceed 100 cds/m² from one hour after sunset until one hour before sunrise, and 5,000 cds/m² during daytime. It should not result in the illuminance of a roadway by greater than 10 lux. Any monitoring undertaken to determine compliance with this condition must be undertaken by a suitably qualified and experienced professional.

8.19 Prior to operation, certification must be submitted to by a suitably qualified and independent professional confirming the signage has been installed and capable of compliance with the condition above.

LUKE MICHAEL BENNER

A handwritten signature in blue ink, appearing to read "Benner", with a stylized underline.

24 MAY 2024

Attachment 1 – 5 Year Crash History

codedcrashid	Crash identifier	Crash severity	Crash year	Crash date	Movement codes categories	Road Safety report movement group
1199090	201964163	Minor Crash	2019	15/08/2019 0:00	Obstruction	Rear end/obstruction
1210553	201975323	Non-Injury Crash	2019	25/07/2019 0:00	Xing One Turning	Crossing/Turning
1243491	2020158566	Non-Injury Crash	2020	17/07/2020 0:00	Overtaking	Overtaking
1260401	2020171712	Non-Injury Crash	2020	22/10/2020 0:00	Overtaking	Overtaking
1262735	2020173567	Non-Injury Crash	2020	6/11/2020 0:00	Overtaking	Overtaking
1274749	2021199727	Non-Injury Crash	2021	14/01/2021 0:00	Rear End Crash	Rear end/obstruction
1285339	2021189804	Non-Injury Crash	2021	27/05/2021 0:00	Merging	Crossing/Turning
1289775	2021194413	Non-Injury Crash	2021	25/06/2021 0:00	Same Drn Turning	Rear end/obstruction
1298411	2021216392	Non-Injury Crash	2021	18/05/2021 0:00	Overtaking	Overtaking
1301114	2021218137	Non-Injury Crash	2021	16/06/2021 0:00	Overtaking	Overtaking
1302860	2021219527	Non-Injury Crash	2021	13/07/2021 0:00	Xing One Turning	Crossing/Turning
1304839	2021208404	Non-Injury Crash	2021	16/12/2021 0:00	Overtaking	Overtaking
1372324	2023260783	Non-Injury Crash	2023	28/06/2023 0:00	Rear End Crash	Rear end/obstruction



