



## OMA RESPONSE

# Austrroads Research Report – Impact of Roadside Advertising on Road Safety

### 01 INTRODUCTION

Austrroads released a research report titled, The Impact of Roadside Advertising on Road Safety, on January 16 2013. Unfortunately prior to the release of this report the OMA were not consulted nor provided with an opportunity to participate in the workshop run as part of the process. This has led to a number of misrepresentations of the outdoor advertising industry being included in the report.

### 02 INDUSTRY MISREPRESENTATIONS

The lack of consultation with the OMA in the development stage of this report has led to a number of assumptions being made regarding digital signs and the outdoor industry more broadly.

Outdoor advertising covers a range of different types of signage, and media display companies advertise third party products including:

- on buses, trams, taxis, pedestrian bridges, billboards and free-standing advertisement panels;
- on street furniture (e.g. bus/tram shelters, public toilets, bicycle stations, phone booths, kiosks); and
- in bus stations, railway stations, shopping centres, universities and airport precincts.

In addition to the third party advertisements displayed by our members, there is a vast amount of ‘on-premise’ outdoor advertising. This is advertising displayed at the premises where the goods or services are provided, such as pubs, clubs and retailers. The OMA does not represent advertisers that display on-premise advertising.

The Austrroads report does not differentiate between third party advertising and on premise advertising, and while the industry would prefer that all advertising is regulated in the same way, currently this is not the case. In Australia, third party advertising is already highly regulated at both a state and local government level, while on premise advertising generally is not unless a complaint is made about a specific sign. In some areas this has seen a proliferation of on premise signage, for example, in NSW along Parramatta Road between Broadway and Leichhardt, there are over 2000 on-premise signs as compared to 14 third-party advertisements.

The already highly regulated nature of third party advertising means that much of the discussion around the ability of advertising to engage and distract drivers, particularly in

relation to digital technology, is simply not allowed to occur in most jurisdictions in Australia. For example, both NSW and Queensland do not allow the use of moving images, which is discussed repeatedly as a source of distraction in the report. Also discussed is the issue of luminance changes; however this is already regulated in jurisdictions where digital is in use in Australia.

The report also states that the use of digital technology in outdoor advertising is something new, however, digital signs have been in use in the United States, the UK and Europe for the last 30 years. They have also been used in some jurisdictions in Australia since 2005 without incident.

### 03 RESEARCH

Currently there are a range of different studies that are generally inconclusive as to the safety of roadside advertising, which is noted by the Austroads report. The OMA is however concerned that the research noted in the report has been used to direct a bias against outdoor advertising.

For example, the report notes the research of Lee, McElheny and Gibbons<sup>1</sup> and says that, 'digital billboards can be more distracting than conventional billboards'. The report, however, does not look at the conclusions of this research, where it was found that the average glance duration at conventional billboards was 0.73 seconds, and the average glance duration at digital billboards was 0.92 seconds. This research should be read in the context of Klauer et al's naturalistic driving study<sup>2</sup>, which found the following:

1. Total eyes-off-road durations of greater than 2 seconds significantly increased individual near-crash/crash risk whereas durations for less than 2 seconds did not significantly increase crash risk relative to normal, baseline driving.
2. In secondary task engagement, if the task is simple and requires a short glance, the risk is only elevated slightly, if at all. The OMA submits that because outdoor advertising is intended to be a glance medium, the short glances that would be required to read and interpret the message would not have a significant impact on road safety.

It then becomes clear that while it is true that digital billboards do attract slightly more attention than static billboards, the short glances away from the road are less than 1 second in duration, a much shorter time than is noted as being a problem by Klauer.

Another example of potential bias against outdoor advertising appears on page 15 of the report, where it highlights a statistically insignificant result from a study by Young et al. (2009) as if it was a significant outcome of that study.

Also on page 15, the report indicates that very few studies have been conducted to investigate the impact of roadside advertising on crash rates. However Austroads will be aware that numerous studies have been conducted in the USA to examine crash rates before and after installation of digital billboards. These studies have all been referred to in the OMA discussion paper, "Digital billboards and road safety", and while these studies have been subject to some criticism, so have many of the studies referred to in the Austroads report.

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<sup>1</sup> Lee, S. E., McElheny, M.J. and Gibbons, R. (2007) Driving performance and digital billboards, Virginia Tech Transportation Institute.

<sup>2</sup> Klauer, S.G., Dingus, T.A., Neale, V.L., Sudweeks, J.D. and Ramsey, D.J. (2006) The impact of driver inattention on rear-crash/crash risk: An analysis using the 100 car naturalistic driving study data. Virginia Tech Transportation Institute.

Another significant factor, which has not been commented on in the report, is that pedestrians and passengers have been shown to glance more at outdoor advertising than drivers.<sup>3</sup> The OMA commissioned an Australian Government accredited eye-tracking firm to study glances of drivers, passengers and pedestrians towards outdoor advertising. The study found that pedestrians looked at 44% of available signage compared with drivers who looked at 13% and passengers who looked at 23%. One can see from this that third-party advertising does not draw attention from drivers 87% of the time. As outlined above, when drivers do glance at a third-party advertisement, it is generally for less than a second in any case.

The Austroads report in its conclusion does support this premise, by noting that ‘it is reasonable to conclude that far less than 1% of all crashes and near crashes involved distraction from roadside advertising’. It is however disappointing to see that despite this the overall tone of the report is biased against outdoor advertising and it states that notwithstanding the conclusion of outdoor advertising being of minimal risk it still should not be supported.

## 04 CORRECTIONS

The OMA has been informed of several factual mistakes contained in the Austroads report by the Outdoor Advertising Association of America (OAAA) as follows:

1. On page six of the report it is noted that digital billboards are prohibited in Pennsylvania. This is incorrect, Pennsylvania established a policy to allow digital billboards in 2002 and in 2007 were the first state to begin working with the FBI to utilise digital billboards to help apprehend fugitives a concept which has now extended nationwide.
2. Page six of the report also notes that Minnetonka, MN has ‘mandated dwell times of up to many minutes’. This is also incorrect as Minnetonka has dwell times of 8 seconds, as per the relevant city ordinance.

## 05 REPORT RECOMMENDATIONS

It is noted that the report recommendations are targeted at digital billboards only, which is defined in the report as digital advertisements of greater than 4m<sup>2</sup>. The report also notes that the guidance is intended to apply only to such advertisements that are on or visible from State controlled roads.

As discussed above, it is regrettable that Austroads did not consult with the OMA before publishing the report, given the experience and practical understanding that could have been contributed by the outdoor advertising industry. Nevertheless, the OMA wishes to make the following comments in relation to the recommendations made by Austroads:

1. Movement

The reference to illumination in this section on page 41 should be deleted. It simply creates confusion because illumination is managed as a separate issue elsewhere in the report.

2. Dwell Time

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<sup>3</sup> Access Testing (2008), Eye tracking study for the Outdoor Media Association.

At page 18, the report states that the length of time for which an image is displayed should be as long as possible to reduce the frequency of any sudden environmental changes that can capture attention involuntarily. This recommendation seems to be based on attentional capture studies that have been conducted in laboratories, where participants responded to stimuli on computer screens. Aside from the fact that these studies were not testing the driving task at all, the computer screen does not have the size or depth of a driver's real-world eye view. The OMA disagrees with the comment in the report that these studies "obviously have important implications for understanding the distraction potential of various kinds of roadside advertising."

The need for caution in generalising these laboratory results to the real world is demonstrated, for example, by looking at the Lee et al. (2007) study, referred to in the Austroads report. This study examined driver behaviour around digital billboards, conventional billboards, comparison sites (which included VMSs, murals, landmarks and on-premise signage, 25% of which had a digital element) and baseline (no-sign) sites. The following findings of their daytime testing bring into question the notion that digital billboards involuntarily capture attention:

- There was no significant difference in the number of individual glances towards digital billboards, conventional billboards, comparison sites and baseline sites. This tends to suggest that transition of images does not elicit additional glances, thereby undermining the hypothesis that image changes involuntarily capture attention.
- Drivers did not take their eyes from the road more in the presence of digital billboards than conventional billboards or baseline (no-sign) sites. This suggests that transition of images on a digital billboard does not draw drivers' eyes from the road, or capture involuntary attention.
- The glances towards digital billboards on the left and right sides of the road were not significantly different to glances towards conventional billboards, comparison sites or baseline sites. Again, brings into question the hypothesis that image changes involuntarily capture attention.

The digital billboards in the Lee et al. (2007) study had dwell times of 8 seconds, so the findings of the study cannot necessarily be applied to signs with shorter dwell times than that. However, in view of the above findings, the OMA cannot support Austroads's recommendation that dwell times should be longer "because drivers' attention may be captured involuntarily by images changes."

At page 41, the report states that dwell time should take into account two factors: the maximum distance from the sign, at which the sign face becomes visible; and the speed of the road. It suggests that a sign face visible from 1000 metres should have a longer dwell time than a sign that is visible from 100 metres (in the same road speed environment). The report states that all drivers will see at least one change if:  $\text{dwell time (sec)} < \frac{\text{distance from which the sign is visible (metres)}}{\text{Speed of the road (km/h)} \times 0.28}$ .

The report goes on to say that, "ideally, the proportion of drivers (PD) who see a change should be much less than 1," and it sets out the following formula to reflect this:  $\text{dwell time (sec)} > \frac{\text{distance from which the sign is visible (metres)}}{\text{Speed of the road (km/h)} \times 0.28}$ . And so it says, "for a desired PD:  $\text{dwell time} = \frac{\text{distance from which the sign is visible (metres)}}{\text{Speed of the road (km/h)} \times 0.28 \times \text{PD}}$ ."

However, the above comments and formulas have failed to take into account several factors that are very relevant to the practical reality of signage:

- The OMA does not accept the premise that a digital billboard will draw significant attention at a distance of greater than 260 metres. Take, for example, a sign that is 1000 metres from a driver, on a straight sight-line. Even if the sign *structure* becomes visible at 1000 metres, there will generally be numerous closer, more prominent objects (such as other vehicles, road signs, traffic lights, trees etc.) that will draw more attention than a digital billboard some 1000 metres down the road.
- Any formula for calculating the proportion of drivers who see a change must take into account research that shows that, in fact, passengers and pedestrians look at signage much more than drivers, as discussed above.

The OMA submits that while formulas create a scientific appearance, the formulas put forward in the Austroads report are simplistic and without any substantial merit. The OMA is not inclined to suggest an alternative formula, but rather suggests that the factors that are practically relevant in the real world are simply too varied for any formula to be sufficiently meaningful. In this case, the OMA suggests taking the science beyond the laboratory theories and discussions, and towards the science of outcomes.

Look at the real outcomes from around the world where digital billboards have been installed, and whether there have been any significant negative effects from digital billboards with dwell times of 8 to 10 seconds. Certainly the various studies that the OMA is aware of suggest that there have not been significant negative effects, and the OMA questions why the straightforward science of outcomes should not be embraced by Austroads. As discussed above, Austroads did not comment on these studies in its report, so it may be that Austroads discounts their validity. If this is the case, the OMA urges Austroads to conduct similar real-world studies to examine outcomes, rather than imposing formulas based on a mixed bag of laboratory theories. The OMA supports a co-operative and transparent approach, and has made it clear that the industry is willing to work together with road authorities to conduct just such a study.

### 3. Quantity of information

At page 41, the report sets out various formulas that should be applied in determining how much text should be displayed on a billboard, taking into account the legibility, the road speed, the comprehension rate and the glance duration. The report suggests that due to different text sizes, fonts and formats, "the comprehension rate may need to be tested and demonstrated in the application process." This suggestion demonstrates a misunderstanding about how the outdoor advertising industry operates. For example, advertisements generally change every 4 weeks, so it would be impractical for an applicant or a local council to assess the quantity of information on every advertisement. In fact, the parties that produce the advertisements are different to the outdoor advertising companies that display them, so before an advertising sign is approved and then the structure is installed, the advertisements are not even prepared. Accordingly, the OMA would suggest that this recommendation is removed entirely.

However, the industry is willing to work with Austroads to establish an industry document which would provide guidance to advertisers about the quantity of information that should be included on an outdoor advertisement.

### 4. Information content/meaning

Content for advertisements in any media is regulated through various Codes of the Australian Association of National Advertisers (AANA), and overseen by the Advertising Standards Bureau (ASB). The AANA Codes require advertisements to

meet prevailing community standards in terms of sex/nudity, violence, discrimination, health and safety etc.

Rightly or wrongly, outdoor advertising has in the past had a reputation for producing advertising that pushes the boundaries. However this is certainly not a true reflection of today's outdoor advertising industry in Australia. For example, in 2012, the outdoor advertising industry displayed 30,000 different advertisements. The community made complaints about only 81 of these, and the ASB found that only 3 of the advertisements were contrary to the AANA Codes. That is, 99.99% of the time the industry displayed advertisements that were in line with community standards.

The OMA has also implemented several initiatives to continue to further reduce the number of upheld complaints including content training and a content review policy.

As such it is disappointing to see the discussion of content as an issue in the Austroads report. The OMA strongly supports the continuation of self-regulation of content in Australia, and due to the excellent track record of the industry it is clear that the system is working. It should also be noted that the OMA does not support the use of colours or lights in an advertisement that is designed to imitate traffic signals, something which is also already regulated in some jurisdictions.

The OMA cannot support the recommendation in relation to content at page 41 of the Austroads report.

## 5. Luminance

The report recommends that "Luminance levels should not exceed those of static signs in typical ambient light conditions." However, this recommendation does not take into account the way in which digital signage actually functions as compared to conventional signage.

Conventional signage may be externally illuminated or internally illuminated. Externally illuminated signage uses front-mounted floodlights which shine onto the face of the advertisement. Internally illuminated signage is constructed using a box type enclosure housing a light source, usually a number of fluorescent lamps. The front of the enclosure is made of a translucent material on which advertising material is printed.

So, both externally illuminated and internally illuminated signage have the advertising information printed on a medium situated on the face of the sign. During daylight hours, the advertisement is visible with illumination from sunlight, but as the daylight fades, the graphics need another source of illumination. During the hours of darkness, floodlights shine onto the face of externally illuminated signage, so the advertisement is front-lit. For internally illuminated signage, the light source during the hours of darkness comes from within the sign, so the advertisement is back-lit.

In contrast to both internally and externally illuminated signage, digital signage consists of an array of Light Emitting Diodes (LEDs). These LEDs are presented to a viewer in the same way as pixels on a television screen, and the image graphics are produced by LEDs with their light output directed towards the viewer. This is in contrast to the externally and internally illuminated signage discussed above, which has the advertisement printed on the face of the sign.

During daylight hours, LED signage is actually competing with high levels of daylight and requires a corresponding increase in luminance to allow the signage to be readable. Many people will have experienced this when trying to watch a television that has sunlight shining directly on the face of it. With this fact alone, we can see that the luminance levels of digital signs cannot be the same as conventional signs, which in fact need no lighting during the day (other than sunlight). Further, during daylight

hours, the public viewing the signage will have their eyes in a high light adaptation mode, so the luminance of LED signage must be increased commensurate with the ambient day time luminance in order for viewers to visualise the sign graphics.

There may also be occasions when a digital sign is installed facing a direction of approximately east or west. In this case, there can be certain brief periods during the day when the face of the sign will receive direct sunlight from the rising or setting sun. If so, the signage will be unreadable if the luminance of the sign is less than the luminance provided by the direct sunlight. In order to provide sufficient luminance from the LED sources to compete with the direct sun, the sign would need to be on maximum luminance output at these times for viewer visibility (at least 6,000 candelas/m<sup>2</sup>).

The Austroads recommendation that luminance levels of digital signs should not exceed those of static signs is too simplistic, and fails to take into account the practical realities of digital signage.

#### 6. Lateral placement

At page 42, the report says "advertising devices should not be placed such that drivers must divert their gaze away from the forward roadway in order to comprehend the sign message." The OMA wishes to highlight the following practical realities:

- A sign that is even a little to the side of a roadway will require a driver to divert their gaze away from the forward roadway, so this is an impractical recommendation.
- As discussed above, generally signs are viewed more often by pedestrians and passengers than by drivers, with one study finding that only 13% of drivers look at billboards. Some advertising signs are easily visible for pedestrians to view, but which a driver is actually less likely to see. Is the report suggesting that such signs should be moved closer to the forward roadway for the sake of driver visibility?

#### 7. Vertical placement

The OMA is cautious about the implications of this recommendation, which states that "Advertising devices should not be placed at a height that coincides with the normal 'hazard viewing window' that drivers scan. That is, they should be elevated above the height of vehicles, pedestrians and traffic control devices..."

We understand that the guidance from Austroads is intended only to apply to digital billboards (greater than 4m<sup>2</sup>) on or visible from State controlled roads. However, it has been the experience of the outdoor advertising industry that local councils use such guidance from the State level to regulate roads at the Local council level, so the OMA makes the following comments.

The recommendation appears to have been based on the research of Crundall et al. (2006), referred to in the report, which studied eye fixations towards advertisements in different locations. However, further research is needed before this finding can be assumed to apply to real-world driving scenarios, given that this study involved participants watching video clips of driving, rather than undertaking the driving task themselves. So from this study, it is not clear whether the participants responded as passengers or drivers.

#### 8. Regular review of installed signage

The final column on page 42 of the report states that, "The installation should be reviewed at regular intervals and audited against the guidance principles (because crash rates, traffic volume, the built environment etc. will change over time)." This

recommendation provides no certainty for the outdoor advertising industry and disregards commercial practicalities. It is not reasonable for the industry to outlay significant funds to erect signage in circumstances where the future of a sign is simply uncertain.

## **o6 CONCLUSION**

The OMA supports the reasonable regulation of outdoor advertising and is committed to working with its regulators to ensure that all outdoor advertising signs are located in permissible areas, are well-integrated with the surrounding environment and support local community activities. We have been working with jurisdictions around Australia to this end for many years and it is disappointing to see the release of a report in relation to roadside advertising where the industry has not been consulted. As a result there are a number of biases and factual inconsistencies present in the report, as well as impractical and ill-informed recommendations, which could have been avoided by engaging with the OMA during its development.