2 August 2021

TfNSW Reference: SYD20/01461/04
DPIE Reference: DA 10649

Director
Department of Planning, Industry and Environmental
Key Sites and Regional Assessment
Locked Bag 5022
PARRAMATTA NSW 2124

Attention: Minoshi Weerasinghe

RESPONSE TO FURTHER SUBMISSIONS - DIGITAL ADVERTISING SIGNS - M2 MOTORWAY EPPING

Dear Sir/Madam,

Reference is made to Department of Planning, Industry and Environmental (the Department) correspondence dated 26 July 2021, regarding the abovementioned Application which was referred to Transport for NSW (TfNSW) for comment.

TfNSW has reviewed the submitted information and notes that The Hills Motorway Limited (THML) is the operator of M2 Motorway. And TfNSW has consulted THML, and the following comments are provided by THML for the Department's consideration:

1. THML believes that the responses, dated 17 June 2021, provided by Transport Planning Partnership (TTPP) has not addressed the fundamental issue that the installation of digital advertising signs at the proposed locations on the Hills M2 Motorway introduce a new hazard and unnecessary risk to road safety. THML reaffirms its objection to the installation of digital advertising signs at the nominated sites.

2. The State Environmental Planning Policy No 64 – Advertising and Signage (2001 EPI 199) (SEPP 64) applies to the evaluation of all advertising and signage on land and structures within New South Wales. It should be noted that the SEPP 64 requires an impact statement in relation to the assessment criteria in Schedule 1 of the Act. One of the Assessment Criteria in Schedule 1 is Safety and one evaluation criteria is "Would the proposal reduce the safety for any public road?" which needs to be considered and addressed.

3. The generally accepted practice for this assessment process is to assess a proposed advertising sign development against "Transport Corridor Outdoor Advertising and Signage Guidelines – November 2017" (published by the Department of Planning and Environment).

4. Road Safety Audits has been undertaken, as reports are included in Attachment 1, to assess the two proposed digital signs sites previously and identified serious safety concerns should these proposed development proceed. And in their summary, they state that “this assessment has identified there will be increased risk to road safety for road users in the 200m (Westbound) or 320m (Eastbound) sign exposure distance upon installing the proposed sign.”

5. Incident data for the period 2017 to 8 July 2021 in the vicinity of the proposed digital advertising signs, as included in Attachment 2, obtained from the M2 Motorway Control Centre) indicates that it is not only motor vehicle accidents but also vehicle breakdowns, debris, flat tyre, out of fuel, stationary vehicles, and prohibited users that are present in the vicinity of the location of the proposed sign. The number of incidents in total is not insignificant and the presence of the digital advertising signs will compound the impact of these incidents and could contribute to serious incidents or crashes due to the increased distraction to drivers.

6. THML counter TTPP’s most recent comments dated 17 June 2021 as follows:

    - Submission 3 – It is not clear what the intent of TTPP’s comment is and the response is inferring to.

    - Submission 4 - Reference is made to a sign recently installed on the Pacific Hwy in Gordon. Although very low, it was acknowledged that distraction from outside the vehicle were a cause of crashes. A new digital sign would be an added distraction not currently present.

      Reference is also made to Table 6.1 in this Submission, which is a summary of common causes of crashed in Victoria and NSW and the observation that distraction due to billboards is not a common cause of crashes. It should be noted that the data is for a period up to 2011. The number of digital billboards on Motorways would have been very low pre 2011 and therefore the data may not be a true summary of crash causes on Motorways in 2021.

    - Submission 5 - THML’s concern is that cyclists are a vulnerable road user and any additional hazard should be avoided. It is agreed that there are advance signage advising motorists of cyclists however if the driver is distracted by the added digital signage then the advance signage may be missed. Also TTPP are indicating that the cyclists that use the M2 are typically experienced and of “advanced rider level”. It should be noted that there are no restrictions on the type or age of cyclists that can use the M2 and therefore the design of the ramp and associated risk mitigation measures must be for all cyclists, regardless of age or experience.

    - Submission 6 - TTPP indicates that during site inspections they did a number of trips in the vicinity of the Murray Farm Road Bridge and during these trips no errant driving, etc. was observed. Without knowing the full details of these trips (number, time, traffic conditions, etc) it may be an inconclusive “test” of the impact of the new sign.

- Submission 7 - The use of signs on the arterial network to compare driver behaviour and etc, on a high speed motorway is not supported.

- Submission 9 - The height clearance signs being relocated concern the clearance within the tunnel which is down stream of the structure. The purpose of these signs is to prevent overheight vehicles entering the tunnel. The proposed treatment (obstruction markers) to improve the presence of the signs is generally used on the actual structure with the limited clearance. As these signs will be located on a structure the message concerning the tunnel clearance may be lost.

If you have any further questions, Mr. Felix Liu would be pleased to take your call on 8849 2113 or email development.sydney@rms.nsw.gov.au. I hope this has been of assistance.

Yours sincerely,

Malgy Coman
Senior Land Use Planner

2 Enclosures:
- Attachment 1 – Road Safety Audit Report
- Attachment 2 – Incident Data

M2 Digital Billboard Advertising Sign Road Safety Assessment - Railway Bridge Westbound

Project No: PRS18110

Author: Graeme Kashmer, Noha Elazar

Client: Miller Street Partners

Date: September 2018

Contents

Figures

1 INTRODUCTION

1.1 Background

Miller Street Partners has engaged ARRB to undertake a road safety assessment of a proposal to install a digital static billboard sign on the railway crossing over the M2 motorway, near the Beecroft Road exit facing westbound traffic.

A road safety assessment has been undertaken, which involves:

- a site inspection
- an assessment of site and design suitability for the digital advertising billboard against established criteria.

In undertaking the assessment, the following information of the existing road environment was considered:

- location and type of road infrastructure on the approach to and immediately after the location of the proposed billboard sign
- infrastructure present that may interfere with the view of the proposed billboard sign (or be interfered with by the billboard sign)
- the presence of roadside furniture (including other advertising structures) and vegetation that may cause conflict with the proposed billboard sign (and vice versa) from a road safety perspective.

The assessment team is experienced in road safety auditing and has undertaken many assessments of similar advertising billboard sign proposals. The principles of road safety auditing have been applied to this site assessment, and the knowledge and experience of the assessment team with similar proposals has been used to prepare this report.

A conclusion about the suitability of the location to accommodate a digital advertising billboard from a road safety engineering perspective is provided.

1.2 Purpose of this Report

This report sets out the findings of ARRB's signage safety assessment for the proposed digital billboard on the M2 in the westbound direction.

The following items have been considered in this report:

- potential for the proposed billboard to obstruct a driver, pedestrian or cyclist's view of the road and/or traffic control devices
- distance from upstream or downstream intersections or other decision points
- potential for the proposed billboard to distract at a critical time or for an extended period of time
- location within the carriageway and its potential to be a physical obstruction for vehicles or other road users
- appropriate dwell times based on the speed environment and road complexity
- location in relation to other signage.

1.3 References

In preparing this report, reference has been made to the following:

- an inspection of the site and its surrounds on 24 September 2018. The traffic conditions at the time were moderate with fine weather conditions
- Transport Corridor Outdoor Advertising and Signage Guidelines – Assessing Development Applications under SEPP 64, NSW Department of Planning and Environment, November 2017
- Impact of roadside advertising on road safety, Austroads, January 2013.

2 PROPOSAL

2.1 Sign Location

The location of the proposed digital billboard sign is affixed to the railway crossing over the M2 motorway, near the Beecroft Road exit facing westbound traffic as shown in Figure 2.1.

Figure 2.1: Location of the proposed billboard

Source: nearmap (modified the author)

2.2 Sign Description

No details of the proposed sign have been provided, so the assessment team has assumed the proposed digital billboard sign is to be 12.66 m wide by 3.37 m high, a standard size for this type of advertising sign installation.

2.3 Sign Exposure

The proposed billboard location is visible to a driver from a distance of approximately 270 m, however the billboard sign will only be legible at a distance of approximately 200 m. The sign will be within the drivers' line of clear sight for the entire time it is visible and therefore the exposure distance is also approximately 200 m as shown in Figure 2.2.

A decision point in the form of exit lane and exit sign is located 140 m prior to the proposed sign location (Figure 2.3).

A decision point along the exit ramp with left lane to Epping and right lane to Beecroft is located 35 m after the proposed sign location (Figure 2.4).

The bicycle crossing on the off-ramp and the cycleway along the M2 from the crossing, is located approximately 25 m from the proposed sign location (Figure 2.5).

A directional sign is located 15 m prior to the proposed location (Figure 2.5).

The road along the exposure distance is an uninterrupted divided road with two lanes, one exit lane and sealed left and right shoulders. The road alignment is a slight right curve with a 1% upgrade.

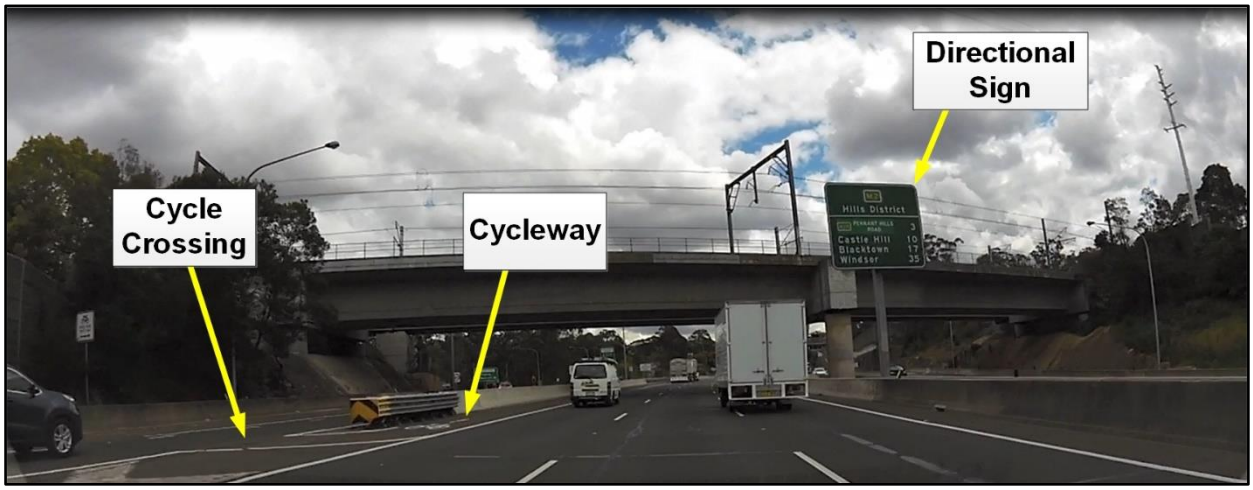
Figure 2.2: Sign exposure

Source: nearmap (modified the author)

Figure 2.3: Exit sign and exit lane

Figure 2.4: Directional sign along located along the exit ramp

Figure 2.5: Cycle crossing, cycleway along the M2 and directional sign



3 STATUTORY REQUIREMENTS

This section of the report assesses compliance of the proposed digital billboard sign with the road safety assessment criteria established in the Department of Planning and Environment, 'Transport Corridor Outdoor Advertising and Signage Guidelines' under SEPP 64 (the guidelines). Schedule 1 of SEPP 64 requires analysis as to whether the proposal will reduce the safety of:

- any public road
- pedestrians and cyclists
- pedestrians by obscuring sight lines from public areas.

In order to ensure consistency with the above key road safety assessment criteria, a response is provided for each of the detailed criteria set out in *Section 3.2 Sign location criteria* and *Section 3.3 Sign design and operation criteria* of the guidelines.

3.1 Sign location and criteria (Section 3.2 of the guidelines)

3.1.1 Road clearance (Section 3.2.1of the guidelines)

(a) The advertisement must not create a physical obstruction or hazard. For example:

(i) Does the sign obstruct the movement of pedestrians or bicycle riders? (e.g. telephone kiosks and other street furniture along roads and footpath areas).

(ii) Does the sign protrude below a bridge or other structure so it could be hit by trucks or other tall vehicles? Will the clearance between the road surface and the bottom of the sign meet appropriate road standards for that particular road?

(iii) Does the sign protrude laterally into the transport corridor so it could be hit by trucks or wide vehicles?

The proposed sign is to be installed as an overhead structure on the railway bridge, which is located between the western side opening of the Norfolk Rd tunnel and Beecroft Rd overpass. According to the assumed dimensions of the proposed digital billboard sign, the sign will not protrude below the railway bridge and therefore will not obstruct trucks or tall vehicles.

(b) Where the sign supports are not frangible (breakable), the sign must be placed outside the clear zone in an acceptable location in accordance with *Austroads Guide to Road Design* (and RMS supplements) or behind an RMS-approved crash barrier.

The proposed digital billboard sign supports are not located in the roadway and pose no hazard to road users.

(c) Where a sign is proposed within the clear zone but behind an existing RMS-approved crash barrier, all its structures up to 5.8m in height (relative to the road level) are to comply with lateral clearances specified by *Austroads Guide to Road Design* (and RMS supplements) with respects to dynamic deflection and working width.

This is not applicable as the sign is located on an overhead bridge.

(d) All signs that are permitted to hang over roads or footpaths should meet wind loading requirements as specified in AS 1170.1 and AS1170.2. All vertical clearances as specified above are regarded as being the height of the sign when under maximum vertical deflection.

This is not applicable since advice of the applicant is that the proposed digital billboard sign is located on an overhead bridge. The structural design is a matter for others.

(e) Additional road clearance criteria for digital signs:

Digital signs greater or equal to 20 sqm must ensure the following clearances;

- **2.5m from lowest point of the sign above the road surface if located outside the clear zone.**

Not applicable.

- **5.5m from lowest point of the sign above the road surface if located within the clear zone or the deflection zone of a safety barrier if installed.**

Not applicable.

- **If attached to Road Infrastructure (e.g. overpass), the digital sign must be positioned so that no portion of the sign is lower than the minimum vertical clearance under the overpass or supporting structure.**

According to the assumed dimensions of the proposed digital billboard sign, no portion of the sign will be below the minimum vertical clearance of the railway bridge.

(f) Additional road clearance criteria for footpath/nature strip signs:

- **to ensure adequate clearance for pedestrian and wheel chair access, the sign must be positioned so that an absolute minimum envelope of 900mm x 2000mm of unobstructed clear path of travel is maintained for the entire length of the advertising structure.**

This is not applicable as the proposed digital billboard sign is located on an overhead bridge.

3.1.2 Line of sight (Section 3.2.2 of the guidelines)

(a) An advertisement must not obstruct the driver's view of the road particularly of other vehicles, bicycle riders or pedestrians at crossings.

The proposed digital billboard advertising sign is located on the overhead bridge and will not obstruct a driver's view of the road ahead.

(b) An advertisement must not obstruct a pedestrian or cyclist's view of the road.

The proposed digital billboard advertising sign is located on the overhead bridge and will not obstruct the view of pedestrians (prohibited from motorway) or cyclists of the road ahead.

(c) The advertisement should not be located in a position that has the potential to give incorrect information on the alignment of the road. In this context, the location and arrangement of sign structures should not give visual clues to the driver suggesting that the road alignment is different to the actual alignment. An accurate photo-montage should be used to assess this issue.

The advertisement is not located in a position that gives incorrect information on the alignment of the road.

(d) The advertisement should not distract a driver's attention away from the road environment for an extended length of time. For example:

(i) The sign should not be located in such a way that the driver's head is required to turn away from the road and the components of the traffic stream in order to view its display and/or message. All drivers should still be able to see the road

when viewing the sign, as well as the main components of the traffic stream in peripheral view.

(ii) The sign should be oriented in a manner that does not create headlight reflections in the driver's line of sight. As a guideline, angling a sign five degrees away from right angles to the driver's line of sight can minimise headlight reflections. On a curved road alignment, this should be checked for the distance measured back from the sign that a car would travel in 2.5 seconds at the design speed.

The proposed digital billboard sign is positioned directly above the carriageway and is not expected to distract a driver's attention away from the road environment for an extended length of time.

The proposed sign will not pose a reflection of headlight issue.

3.1.3 Proximity to decision making points and conflict points (Section 3.2.3 of the guidelines)

(a) A sign should not be located:

(i) less than the safe sight distance from an intersection, merge point, exit ramp, traffic control signal or sharp curves

(ii) less than the safe stopping sight distance from a marked foot crossing, pedestrian crossing, pedestrian refuge, cycle crossing, cycleway facility or hazard within the road environment

(iii) so that it is visible from the stem of a T-intersection.

A decision point in the form of exit lane and exit sign is located 140 m prior to the proposed sign location (Figure 2.3), which is within the stopping sight distance of 207 m for a 100 km/h speed limit.

A decision point along the exit ramp with left lane to Epping and right lane to Beecroft is located 35 m after the proposed sign location (Figure 2.4), which is within the stopping sight distance of 73 m for 60 km/h speed limit along this exit lane.

The cycle crossing on the off-ramp and the cycleway along the M2 from the crossing, is located approximately 25 m from the proposed sign location (Figure 2.5), which is within the stopping sight distance of 207 m for a 100 km/h speed limit.

(b) The placement of a sign should not distract a driver at a critical time. In particular, signs should not obstruct a driver's view:

(i) to a road hazard

(ii) to an intersection

(iii) to a prescribed traffic control device (such as traffic signals, stop or give way signs or warning signs)

(iv) to an emergency vehicle access point or Type 2 driveways (wider than 6–9 metres) or higher.

This criterion is not satisfied as the proposed sign is located at a critical location where there is a decision point in the form of an exit lane as well as a cycle crossing within a short distance from the sign and consequently may distract the driver at a critical time.

3.1.4 Sign spacing (Section 3.2.4 of the guidelines)

Additional criteria for digital signs:

(a) Sign spacing should limit drivers view to a single sign at any given time with a distance of no less than 150 metres between signs in any one corridor.

Exemptions for low speed, high pedestrian zones or CBD zones will be assessed by RMS as part of their concurrence role.

This criterion is not satisfied as this is a 100km/h high speed environment and multiple signs already exist within 150m distance of the proposed digital billboard sign.

3.2 Sign design and operation criteria (Section 3.3 of the guidelines)

3.2.1 Advertising signage and traffic control devices (Section 3.3.1 of the guidelines)

(a) The advertisement must not distract a driver from or reduce the visibility and effectiveness of directional signs, traffic signals, prescribed traffic control devices, regulatory signs or advisory signs or obscure information about the road alignment.

A directional sign is located 15 m prior to the proposed location (Figure 2.5). The proposed location is in close proximity to this sign and would compete for attention with the directional sign.

(b) The advertisement must not interfere with stopping sight distance for the road's design speed or the effectiveness of a prescribed traffic control device. For example:

(i) Could the advertisement be construed as giving instructions to traffic such as 'Stop', 'Halt' or 'Give Way'?

(ii) Does the advertisement imitate a prescribed traffic control device?

(iii) If the sign is in the vicinity of traffic lights, does the advertisement use red, amber or green circles, octagons, crosses or triangles or shapes or patterns that may result in the advertisement being mistaken for a traffic signal?

The impact of specific advertisements are not considered in this safety assessment and will need to be considered on a case-by-case basis.

A Condition of Consent can be applied to require that the proposed digital billboard sign will not imitate a prescribed traffic control device.

The proposed digital billboard sign is not located within the vicinity of a traffic signal.

Additional criteria for digital signs and moving signs

(c) The image must not be capable of being mistaken:

(i) for a rail or traffic signal or signal because it has, for example, red, amber or green circles, octagons, crosses or triangles or shapes or patterns that may result in the advertisement being mistaken for a traffic signal

(ii) as text providing driving instructions to drivers.

This is an issue of advertising content operation and is a matter for others and of conditioning the consent.

(d) The amount of text and information supplied on a sign should be kept to a minimum (for example no more than a driver can read at a short glance).

This is an issue of advertising content design and is a matter for others and of conditioning the consent.

3.2.2 Dwell time and transition time (Section 3.3.2 of the guidelines)

(a) Each advertisement must be displayed in a completely static manner, without any motion, for the approved dwell time as per criterion (b) below.

This is an issue of advertising content operation and is a matter for others and of conditioning the consent.

(b) Dwell times for image display must not be less than:

- 10 seconds for areas where the speed limit is below 80 km/h.
- 25 seconds for areas where the speed limit is 80 km/h and over.

The speed limit on this road is 100 km/h and therefore a 25 seconds dwell time would apply.

(c) Any digital sign that is within 250 metres of a classified road and is visible from a school zone must be switched to a fixed display during school zone hours.

This is not applicable as the sign is not located within 250m of a school zone.

(d) Digital sign must not contain animated or video/movie style advertising or messages including live television, satellite, internet or similar broadcast.

This is an issue of advertising sign operation and is a matter for others and conditioning of the consent.

(e) The transition time between messages must be no longer than 0.1 seconds, and in the event of image failure, the default image must be a black screen.

This is an issue of advertising sign operation and is a matter for others and conditioning of the consent.

(f) Dwell time criteria for moving signs:

- **The image must be completely static from its first appearance to the commencement of a change to another display.**

This is an issue of advertising sign operation and is a matter for others and conditioning of the consent.

- **Dwell time for image display are to be a minimum of 10 seconds which includes 3 seconds to scroll.**

This is an issue of advertising sign operation and is a matter for others and conditioning of the consent.

3.2.3 Illumination and reflectance (Section 3.3.3 of the guidelines)

(a) Luminance levels must comply with the requirements in Table 6 (of the guidelines) Luminance Levels for Digital Advertisements.

This is an issue of advertising sign operation and is a matter for others and conditioning of the consent.

(b) The images displayed on the sign must not otherwise unreasonably dazzle or distract drivers without limitation to their colouring or contain flickering or flashing content.

This is an issue of advertising sign operation and is a matter for others and conditioning of the consent.

3.2.4 Interaction and sequencing

(a) The advertisement must not incorporate technology which interacts with in-vehicle electronic devices or mobile devices. This includes interactive technology or technology that enables opt-in direction communication with road users.

The proposal does not indicate it will include technology that would interact with in-vehicle electronic devices or mobile devices. This should be confirmed with the applicant.

(b) Message sequencing designed to make a driver anticipate the next message is prohibited across images presented on a single sign and across a series of signs.

This is an issue of advertising content operation and is a matter for others and of conditioning the consent.

4 CONCLUSION

Miller Street Partners has requested a study on any potential safety issues associated with the possible installation of an outdoor digital billboard sign on the railway bridge over the M2. The proposed billboard sign is to be located on the railway bridge between the western side opening of the Norfolk Road tunnel and Beecroft Road overpass along the M2 Motorway, facing westbound traffic.

ARRB has assessed this proposal against the current statutory requirements for outdoor advertising as outlined in the *Transport Corridor Outdoor Advertising and Signage Guidelines, Assessing Development Applications under SEPP 64, NSW Government Department of Planning and Environment, November 2017*.

Upon assessing the location of the proposed digital billboard sign ARRB identified the requirements outlined in Sections 3.2.3, 3.2.4 and 3.3.1 of the Transport Corridor Outdoor Advertising and Signage Guidelines SEPP 64 have not been satisfied.

This assessment has identified there will be increased risk to road safety for road users in the 200 m sign exposure distance upon installing the proposed sign.

From a road safety perspective, ARRB conclude the proposed location is inappropriate for a digital advertising sign.

Miller Street M2 New Ryde Signs

Project No: PRS18110

Author: Graeme Kashmer and Noha Elazar

Client: Miller Street Partners

Date: September 2018

Contents

Figures

1 INTRODUCTION

1.1 Background

Miller Street Partners has engaged ARRB to undertake a road safety assessment of a proposal to install a digital static billboard sign. The proposed billboard sign is to be located on the railway bridge between the western side opening of the Norfolk Road tunnel and Beecroft Road overpass along the M2 Motorway, facing eastbound traffic.

A road safety assessment has been undertaken, which involves:

- a site inspection
- an assessment of site and design suitability for the digital advertising billboard against established criteria.

In undertaking the assessment, the following information of the existing road environment was considered:

- location and type of road infrastructure on the approach to and immediately after the location of the proposed billboard sign
- infrastructure present that may interfere with the view of the proposed billboard sign (or be interfered with by the billboard sign)
- the presence of roadside furniture (including other advertising structures) and vegetation that may cause conflict with the proposed billboard sign (and vice versa) from a road safety perspective.

The assessment team is experienced in road safety auditing and has undertaken many assessments of similar advertising billboard sign proposals. The principles of road safety auditing have been applied to this site assessment, and the knowledge and experience of the assessment team with similar proposals has been used to prepare this report.

A conclusion about the suitability of the location to accommodate a digital advertising billboard from a road safety engineering perspective is provided.

1.2 Purpose of this Report

This report sets out the findings of ARRB's signage safety assessment for the proposed digital billboard located at the railway bridge facing eastbound traffic on the M2 Motorway.

The following items have been considered in this report:

- potential for the proposed billboard to obstruct a driver, pedestrian or cyclist's view of the road and/or traffic control devices
- distance from upstream or downstream intersections or other decision points
- potential for the proposed billboard to distract at a critical time or for an extended period of time
- location within the carriageway and its potential to be a physical obstruction for vehicles or other road users
- appropriate dwell times based on the speed environment and road complexity
- location in relation to other signage.

1.3 References

In preparing this report, reference has been made to the following:

- an inspection of the site and its surrounds on 24 September 2018. The traffic conditions at the time were moderate with fine weather conditions
- Transport Corridor Outdoor Advertising and Signage Guidelines – Assessing Development Applications under SEPP 64, NSW Department of Planning and Environment, November 2017
- Impact of roadside advertising on road safety, Austroads, January 2013.

2 PROPOSAL

2.1 Sign Location

The location of the proposed digital billboard sign is affixed to the railway bridge between the western side opening of the Norfolk Road tunnel and Beecroft Road overpass, facing M2 Motorway eastbound traffic as presented in Figure 2.1.

Figure 2.1: Location of proposed sign

2.2 Sign Description

The proposed digital billboard sign is assumed to be 12.66 m wide by 3.37 m high. No details of the proposed sign have been provided.

2.3 Sign Exposure

The billboard location is first visible to a driver from a distance of approximately 320 m as presented in Figure 2.3 and remains within the drivers' line of sight for the entire exposure distance as presented in Figure 2.3.

Figure 2.2: First point of visibility for proposed billboard location

Figure 2.3: Zone of exposure to proposed sign

A merge point is located at the on-ramp located 170 m on approach to the proposed sign location and another merge point is located just under the bridge at the propose sign location as presented in Figure 2.4.

Figure 2.4: Merge points and proposed sign location

Variable speed limit signs are located along the onramp, 150m prior to the proposed sign location and along the M2, 35 m prior to the proposed sign location as presented in Figure 2.5.

Figure 2.5: VMS sign locations

The cycle crossing on the on-ramp and the cycleway along the M2 from the crossing, is located approximately 40 m from the proposed sign location as presented in Figure 2.6.

Figure 2.6: Cycle crossing and cycleway

Bridge and tunnel clearance signs are located on the railway bridge the billboard sign is proposed with Prepare to Stop signs located 45 m after railway bridge. Additionally, a VMS sign is located at 135m after the proposed sign location just prior to the tunnel entrance as presented in Figure 2.7.

Figure 2.7: Static and VMS signs

The road alignment is slightly curved with a 1.6% downgrade.

3 STATUTORY REQUIREMENTS

This section of the report assesses compliance of the proposed digital billboard sign with the road safety assessment criteria established in the Department of Planning and Environment, 'Transport Corridor Outdoor Advertising and Signage Guidelines' under SEPP 64 (the guidelines). Schedule 1 of SEPP 64 requires analysis as to whether the proposal will reduce the safety of:

- any public road
- pedestrians and cyclists
- pedestrians by obscuring sight lines from public areas.

In order to ensure consistency with the above key road safety assessment criteria, a response is provided for each of the detailed criteria set out in *Section 3.2 Sign location criteria* and *Section 3.3 Sign design and operation criteria* of the guidelines.

3.1 Sign location and criteria (Section 3.2 of the guidelines)

3.1.1 Road clearance (Section 3.2.1of the guidelines)

(a) The advertisement must not create a physical obstruction or hazard. For example:

(i) Does the sign obstruct the movement of pedestrians or bicycle riders? (e.g. telephone kiosks and other street furniture along roads and footpath areas).

The proposed digital billboard sign will be mounted to the railway bridge and therefore will not obstruct pedestrians or bicycle riders.

(ii) Does the sign protrude below a bridge or other structure, so it could be hit by trucks or other tall vehicles? Will the clearance between the road surface and the bottom of the sign meet appropriate road standards for that particular road?

According to the assumed dimensions of the proposed digital billboard sign, the sign will not protrude below the railway bridge and therefore will not obstruct trucks or tall vehicles.

(iii) Does the sign protrude laterally into the transport corridor so it could be hit by trucks or wide vehicles?

The proposed digital billboard sign does not protrude laterally into the transport corridor.

(b) Where the sign supports are not frangible (breakable), the sign must be placed outside the clear zone in an acceptable location in accordance with *Austroads Guide to Road Design* (and RMS supplements) or behind an RMS-approved crash barrier.

This is not applicable as the proposed sign is to be installed high on the railway bridge.

(c) Where a sign is proposed within the clear zone but behind an existing RMS-approved crash barrier, all its structures up to 5.8m in height (relative to the road level) are to comply with lateral clearances specified by *Austroads Guide to Road Design* (and RMS supplements) with respects to dynamic deflection and working width.

This is not applicable as the proposed sign is to be installed high on the railway bridge.

(d) All signs that are permitted to hang over roads or footpaths should meet wind loading requirements as specified in AS 1170.1 and AS1170.2. All vertical clearances as specified above are regarded as being the height of the sign when under maximum vertical deflection.

This is not applicable as the proposed sign is to be installed high on the railway bridge.

(e) Additional road clearance criteria for digital signs:

Digital signs greater or equal to 20 sqm must ensure the following clearances;

- **2.5m from lowest point of the sign above the road surface if located outside the clear zone.**

This is not applicable as the proposed sign is to be installed high on the railway bridge.

- **5.5m from lowest point of the sign above the road surface if located within the clear zone or the deflection zone of a safety barrier if installed.**

This is not applicable as the proposed sign is to be installed high on the railway bridge.

- **If attached to Road Infrastructure (e.g. overpass), the digital sign must be positioned so that no portion of the sign is lower than the minimum vertical clearance under the overpass or supporting structure.**

According to the assumed dimensions of the proposed digital billboard sign, no portion of the sign will be below the minimum vertical clearance of the railway bridge.

(f) Additional road clearance criteria for footpath/nature strip signs:

- **to ensure adequate clearance for pedestrian and wheel chair access, the sign must be positioned so that an absolute minimum envelope of 900mm x 2000mm of unobstructed clear path of travel is maintained for the entire length of the advertising structure.**

This is not applicable as the proposed sign is to be installed high on the railway bridge.

3.1.2 Line of sight (Section 3.2.2 of the guidelines)

(a) An advertisement must not obstruct the driver's view of the road particularly of other vehicles, bicycle riders or pedestrians at crossings.

The proposed digital billboard advertising sign is located on the railway bridge and will not obstruct a driver's view of the road ahead.

(b) An advertisement must not obstruct a pedestrian or cyclist's view of the road.

The proposed digital billboard advertising sign is located on the railway bridge and will not obstruct the view of pedestrians (prohibited from motorway) or cyclists of the road ahead.

(c) The advertisement should not be located in a position that has the potential to give incorrect information on the alignment of the road. In this context, the location and arrangement of sign structures should not give visual clues to the driver suggesting that the road alignment is different to the actual alignment. An accurate photo-montage should be used to assess this issue.

The advertisement is not located in a position that gives incorrect information on the alignment of the road.

(d) The advertisement should not distract a driver's attention away from the road environment for an extended length of time. For example:

(i) The sign should not be located in such a way that the driver's head is required to turn away from the road and the components of the traffic stream in order to view its display and/or message. All drivers should still be able to see the road when viewing the sign, as well as the main components of the traffic stream in peripheral view.

The proposed digital billboard sign is positioned high on the railway bridge and is not expected to distract a driver's attention away from the road environment for an extended length of time.

(ii) The sign should be oriented in a manner that does not create headlight reflections in the driver's line of sight. As a guideline, angling a sign five degrees away from right angles to the driver's line of sight can minimise headlight reflections. On a curved road alignment, this should be checked for the distance measured back from the sign that a car would travel in 2.5 seconds at the design speed.

The proposed sign will not pose a reflection of headlight issue.

3.1.3 Proximity to decision making points and conflict points (Section 3.2.3 of the guidelines)

(a) A sign should not be located:

(i) less than the safe sight distance from an intersection, merge point, exit ramp, traffic control signal or sharp curves

This criterion is not satisfied as there are two merge points which are located within the stopping sight distance of 207 m for a 100 km/h speed limit. One point is at the on-ramp located 170 m on approach to the proposed sign location and the other merge point starts just under the bridge at the propose location (Figure 2.4).

(ii) less than the safe stopping sight distance from a marked foot crossing, pedestrian crossing, pedestrian refuge, cycle crossing, cycleway facility or hazard within the road environment

This criterion is not satisfied as the cycle crossing on the on-ramp and the cycleway along the M2 from the crossing, is located approximately 40 m from the proposed sign location, which is within the stopping sight distance of 207 m for a 100 km/h speed limit (Figure 2.6).

(iii) so that it is visible from the stem of a T-intersection.

This not applicable as a T intersection does not exist.

(b) The placement of a sign should not distract a driver at a critical time. In particular, signs should not obstruct a driver's view:

(i) to a road hazard

(ii) to an intersection

(iii) to a prescribed traffic control device (such as traffic signals, stop or give way signs or warning signs)

(iv) to an emergency vehicle access point or Type 2 driveways (wider than 6–9 metres) or higher.

This criterion is not satisfied as the proposed sign is located at a critical point where there are two merge lanes and cycle crossing within a short distance from the sign and consequently may distract the driver at a critical time.

Sign spacing (Section 3.2.4 of the guidelines) Additional criteria for digital signs:

(c) Sign spacing should limit drivers view to a single sign at any given time with a distance of no less than 150 metres between signs in any one corridor.

Exemptions for low speed, high pedestrian zones or CBD zones will be assessed by RMS as part of their concurrence role.

This criterion is not satisfied as this is 100 km/h high speed environment and multiple signs already exist within 150 m distance of the proposed digital billboard sign. Especially, the variable speed limit sign which is located just 35 m prior to the proposed digital billboard sign (Figure 2.5).

3.2 Sign design and operation criteria (Section 3.3 of the guidelines)

3.2.1 Advertising signage and traffic control devices (Section 3.3.1 of the guidelines)

(a) The advertisement must not distract a driver from or reduce the visibility and effectiveness of directional signs, traffic signals, prescribed traffic control devices, regulatory signs or advisory signs or obscure information about the road alignment.

This criterion is not satisfied as the proposed sign is located within the stopping sight distance of traffic control devices and has the potential to distract a driver from the traffic control device. The following are the traffic control devices:

1. Variable speed limit signs located along the onramp, 150 m prior to the proposed sign location and along the M2, 35 m prior to the proposed sign location (Figure 2.5).
2. Tunnel clearance signs located on the bridge at the location of the proposed sign (Figure 2.7).
3. Prepare to Stop sigs located 45 m after the proposed sign location (Figure 2.7).
4. VMS sign located at 135 m after the proposed sign location just prior to the tunnel entrance (Figure 2.7).

(b) The advertisement must not interfere with stopping sight distance for the road's design speed or the effectiveness of a prescribed traffic control device. For example:

(i) Could the advertisement be construed as giving instructions to traffic such as 'Stop', 'Halt' or 'Give Way'?

This criterion is not satisfied as the proposed digital billboard sign may reduce the effectiveness of the Prepare to Stop sign which is located 45 m after to the sign location (Figure 2.7).

(ii) Does the advertisement imitate a prescribed traffic control device?

A Condition of Consent can be applied to require that the proposed digital billboard sign will not imitate a prescribed traffic control device.

(iii) If the sign is in the vicinity of traffic lights, does the advertisement use red, amber or green circles, octagons, crosses or triangles or shapes or patterns that may result in the advertisement being mistaken for a traffic signal?

The proposed digital billboard sign is not located within the vicinity of a traffic signal.

Additional criteria for digital signs and moving signs

(c) The image must not be capable of being mistaken:

(i) for a rail or traffic signal or signal because it has, for example, red, amber or green circles, octagons, crosses or triangles or shapes or patterns that may result in the advertisement being mistaken for a traffic signal

This is an issue of advertising sign operation and is a matter for others and conditioning of the consent.

(ii) as text providing driving instructions to drivers.

This is an issue of advertising sign operation and is a matter for others and conditioning of the consent.

(d) The amount of text and information supplied on a sign should be kept to a minimum (for example no more than a driver can read at a short glance).

This is an issue of advertising sign operation and is a matter for others and conditioning of the consent.

3.2.2 Dwell time and transition time (Section 3.3.2 of the guidelines)

(a) Each advertisement must be displayed in a completely static manner, without any motion, for the approved dwell time as per criterion (b) below.

(b) Dwell times for image display must not be less than:

- **10 seconds for areas where the speed limit is below 80 km/h.**
- **25 seconds for areas where the speed limit is 80 km/h and over.**

The speed limit on this road is 100 km/h and therefore a 25 seconds dwell time would apply

(c) Any digital sign that is within 250 metres of a classified road and is visible from a school zone must be switched to a fixed display during school zone hours.

This is not applicable as the sign is not located within 250m of a school zone.

(d) Digital sign must not contain animated or video/movie style advertising or messages including live television, satellite, internet or similar broadcast.

This is an issue of advertising sign operation and is a matter for others and conditioning of the consent.

(e) The transition time between messages must be no longer than 0.1 seconds, and in the event of image failure, the default image must be a black screen.

This is an issue of advertising sign operation and is a matter for others and conditioning of the consent.

(f) Dwell time criteria for moving signs:

- **The image must be completely static from its first appearance to the commencement of a change to another display.**

This is an issue of advertising sign operation and is a matter for others and conditioning of the consent.

- **Dwell time for image display are to be a minimum of 10 seconds which includes 3 seconds to scroll.**

This is an issue of advertising sign operation and is a matter for others and conditioning of the consent.

3.2.3 Illumination and reflectance (Section 3.3.3 of the guidelines)

(a) Luminance levels must comply with the requirements in Table 6 (of the guidelines) Luminance Levels for Digital Advertisements.

This is an issue of advertising sign operation and is a matter for others and conditioning of the consent.

(b) The images displayed on the sign must not otherwise unreasonably dazzle or distract drivers without limitation to their colouring or contain flickering or flashing content.

This is an issue of advertising content design and sign operation and is a matter for others and of conditioning the consent.

3.2.4 Interaction and sequencing

(a) The advertisement must not incorporate technology which interacts with in-vehicle electronic devices or mobile devices. This includes interactive technology or technology that enables opt-in direction communication with road users.

The proposal does not indicate it will include technology that would interact with in-vehicle electronic devices or mobile devices. This should be confirmed with the applicant.

(b) Message sequencing designed to make a driver anticipate the next message is prohibited across images presented on a single sign and across a series of signs.

This is an issue of advertising content design and sign operation and is a matter for others and of conditioning the consent.

4 CONCLUSION

Miller Street Partners has requested a study on any potential safety issues associated with the possible installation of an outdoor digital billboard sign on the railway bridge over the M2. The proposed billboard sign is to be located on the railway bridge between the western side opening of the Norfolk Road tunnel and Beecroft Road overpass along the M2 Motorway, facing eastbound traffic.

ARRB has assessed this proposal against the current statutory requirements for outdoor advertising as outlined in the *Transport Corridor Outdoor Advertising and Signage Guidelines, Assessing Development Applications under SEPP 64, NSW Government Department of Planning and Environment, November 2017*.

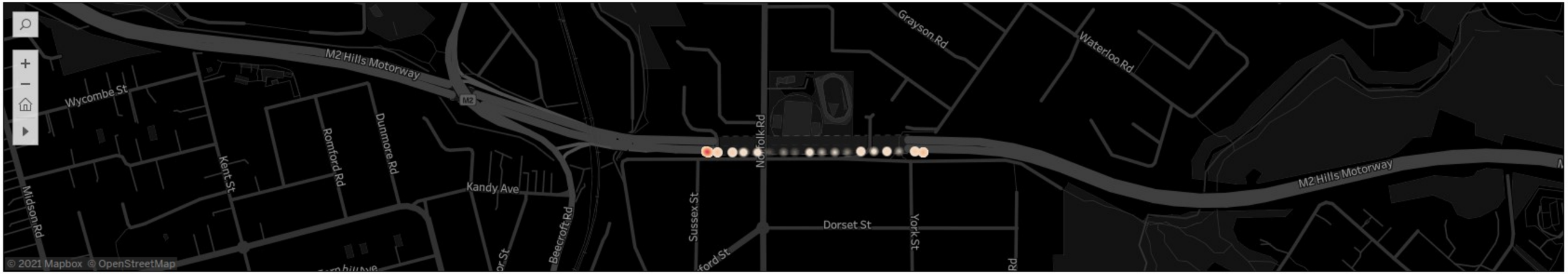
Upon assessing the location of the proposed digital billboard sign ARRB identified the requirements outlined in Sections 3.2.3, 3.2.4 and 3.3.1 of the Transport Corridor Outdoor Advertising and Signage Guidelines SEPP 64 have not been satisfied.

This assessment has identified there will be increased risk to road safety for road users in the 320 m sign exposure distance upon installing the proposed sign.

From a road safety perspective, ARRB concludes that the proposed location is inappropriate for digital signage.

Incidents

Accident	Breakdown	Debris	Flat Tyre	Out of Fuel	Parked Vehicle	Prohibited User	Grand Total
36	142	66	77	19	29	11	380



Weekday and Hour Detected

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Total
Monday	2			1	1	1		2	2	1	2	2	2	2	5	6	6	8		2	2	1	3	1	52
Tuesday	2					1	1	2	5	1	7	2	3	5	3	3	4	3	5	1	1	4			53
Wednesday	2				1		1	4	3	4	4	3	2	6	2	5	6	5	5	3		2	3	1	62
Thursday	1		1				1	3	2	6	5	7	4	3	6	6	9	3	3	3	1	1		1	66
Friday		2		1	1			1	3	4	3	4	3	6	2	7	6	7	10			2			62
Saturday	1			1			1	3	1		3	3	8	2	3	10	1			2		1		2	42
Sunday	4		1	2	1			1	4	1	2	3	2	5	1	2	6	3	3		1	1			43
Total	12	2	2	5	4	2	4	16	20	17	26	24	24	29	22	39	38	29	26	11	5	12	6	5	380

Peak and Direction

	Westbound	Total
Off Peak	227	227
Peak	153	153
Total	380	380

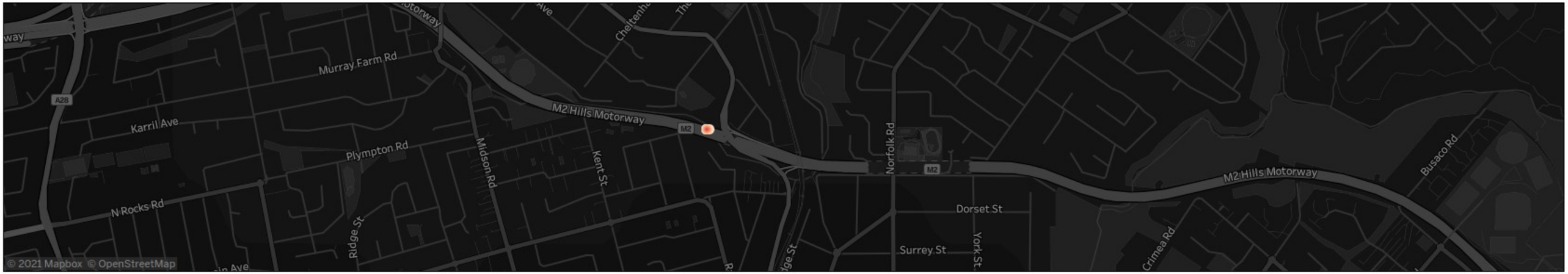
Back to Home

Show Filters

Show Locations

Incidents

Accident	Breakdown	Debris	Flat Tyre	Out of Fuel	Parked Vehicle	Prohibited User	Grand Total
4	24	23	17	8	12	3	91



Weekday and Hour Detected

	1	4	5	6	7	8	9	10	11	12	13	14	15	16	17	19	20	22	Total
Monday		1			1	1		1	1		1	1	2	2	1		1		13
Tuesday					2	1	1	1	2	3		2				1			13
Wednesday			2		3	2	2	2	1		2	1	1		2			1	19
Thursday	1			2	1		2		2	2	1	2				1			14
Friday			2		2	1	1	3	1	1	1	1	1	1	2	1			18
Saturday				1	1			1			2		1		1			1	8
Sunday											1	1	1				2	1	6
Total	1	1	4	3	10	5	6	8	7	6	8	8	6	3	6	3	3	3	91

Peak and Direction

	Eastbound	Total
Off Peak	57	57
Peak	34	34
Total	91	91

Back to Home

Show Filters

Show Locations