Mona Vale Road - Pymble
Digital Signage Safety Assessment

Prepared for:

Ethos Urban

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The Transport Planning Partnership

Mona Vale Road - Pymble

Digital Signage Safety Assessment

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1 Introduction

1.1 Overview

Sydney Trains is seeking approval for the installation of a LED digital illuminated sign on an existing overhead railway bridge above Mona Vale Road in Pymble. The proposed signage is to be located on the north side of the railway bridge, facing the southbound carriageway of Mona Vale Road.

Transport for NSW (TfNSW), formerly Roads and Maritime Services, requires a signage safety assessment to be completed for the proposed signage.

The Transport Planning Partnership (TTPP) has been commissioned by Ethos Urban, on behalf of Sydney Trains, to undertake a signage safety assessment. This assessment has been carried out in accordance with Department of Planning and Environment's *Transport Corridor Outdoor Advertising and Signage Guidelines*, November 2017 (Guidelines) and State Environmental Planning Policy No. 64 – Advertising and Signage (SEPP 64). The Guidelines outline best principle for the planning and design of outdoor advertising signage for permissible locations and exempt developments.

1.2 Purpose of this Report

The aim of this assessment is to determine the suitability of the digital signage and provide recommendations on mitigation measures to alleviate impacts on the southbound carriageway of Mona Vale Road. This report sets out the findings of TTPP's signage safety assessment for the proposed digital signage above Mona Vale Road in Pymble.

The following items have been considered in this report:

- Potential for the signage to obstruct or distract a driver's view of the road, traffic control devices, and merge/ diverge points at entry and exit ramps.
- Distance from upstream or downstream decision points such as merge and diverge points.
- Potential for the signage to distract at a critical or for an extended period of time.
- Location relative to the carriageway and its potential to be a physical obstruction for vehicles or other road users.
- Appropriate dwell times based on the speed environment.
- Location in relation to other signage.

1.3 References

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

- An inspection of the signage location from a driving viewpoint along Mona Vale Road carried out on Tuesday 1 December 2020.
- Austroads Guide to Road Design Part 3, Geometric Design, 2016.
- Transport Corridor Outdoor Advertising and Signage Guidelines, November 2017 by Department of Planning and Environment.
- State Environmental Planning Policy No. 64 – Advertising and Signage (SEPP 64).
- Design plans of the proposed digital signage dated 1 October 2020.

2 Proposal Description

2.1 Location Details

A new digital signage is proposed to be installed off the side of the overhead railway bridge across Mona Vale Road in Pymble. The railway bridge is used by trains travelling on the T1 North Shore Line and the T9 Northern Line between Pymble Station and Gordon Station. The proposed digital sign board will be situated on the northern façade of the railway bridge.

In the vicinity of the proposed signage location, Mona Vale Road has two travel lanes in each of the northbound and southbound directions. In addition, the on-ramp and off-ramp to Pacific Highway is located near the railway bridge.

An aerial image of the signage location and surrounding environs are shown in Figure 2.1.

Figure 2.1: Signage Location

Source: Nearmap aerial imagery dated 6 December 2020

2.2 Description of Proposed Signage

The proposed signage board will have a length of 15.5m and height of 3.3m, and a visual screen with a length of 12.4m and height of 3.2m (39.7m^2 area). The screen would be set upon a black cladding which will visually appear as a plain border around the visual screen. The base of the signage board will be 6.1m above the road.

The digital signage with LED panel will be installed on the northern side of the railway bridge which faces the southbound travel lanes on Mona Vale Road. The proposed digital signage will be used for promoting Sydney Trains and its sponsors, and third-party advertising. The digital signage will contain text and images.

2.3 Signage Exposure

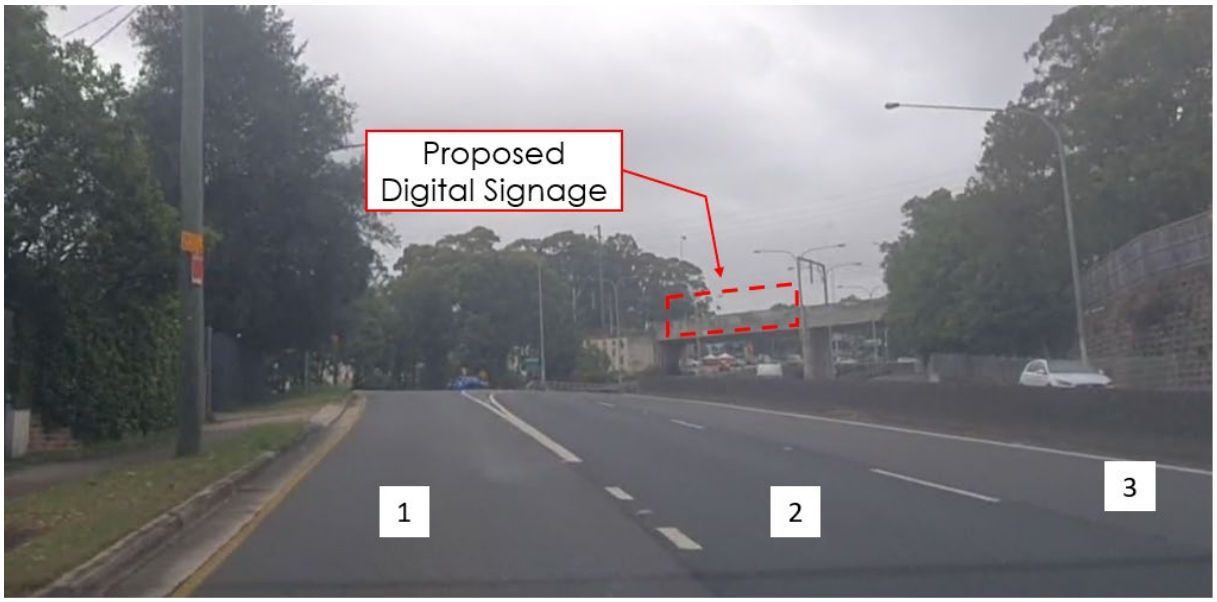
The proposed digital signage would be visible to traffic travelling on Mona Vale Road on the north approach, as shown in Figure 2.2. A site visit was undertaken on Tuesday 1 December 2020 to inspect driver sight distances on both approaches to the proposed signage location and observe any potential crash hazards likely to result from the proposed digital signage. A description of the site investigation findings is provided herein.

Figure 2.2: Mona Vale Road North Approach

2.3.1 Mona Vale Road North Approach

The lane configuration on Mona Vale Road north approach in the vicinity of the proposed signage location is shown in Figure 2.3. Travel lanes are numbered from 1 to 3 starting from the travel lane adjacent to the kerb that enters the off-ramp exit to Pacific Highway. The off-ramp exit to Pacific Highway splits into two travel lanes as shown in Figure 2.4.

Figure 2.3: Mona Vale Road North Approach Lane Configuration



Source: Photograph taken by TTPP dated 01/12/2020

Figure 2.4: Mona Vale Road North Approach Off-Ramp Exit

Source: Photograph taken by TTPP dated 01/12/2020

- The north facing digital signage would be visible to motorists on Mona Vale Road travelling southbound.
- The digital signage would likely be visible in each traffic lane as follows:
  - In Lane 1 (through lane, which splits to form the off-ramp exit), 265m from the sign on the north approach.
  - In Lane 2 (through lane), 275m from the sign on the north approach.
  - In Lane 3 (through lane), 275m from the sign on the north approach.
- The likely readable distance would be 120m across all lanes. There is no existing signage at this location, and therefore, the readable distance is based on the text font and sizing displayed in the designer's impression as shown in Figure 2.5.
- In Lanes 1 and 2 of the off-ramp exit lanes, the digital signage would become out of driving view approximately 10m north of the proposed signage.
- In Lanes 2 and 3 (which pass beneath the road interchange), the digital signage would become out of driving view approximately 20m north of the proposed signage.

Figure 2.5 shows the perspective of the designer's impression of the concept design at the proposed signage location. Likely visible distances on Mona Vale Road north approach are shown in Figure 2.6, Figure 2.10 and Figure 2.10. Likely readable distances on Mona Vale Road north approach are shown in Figure 2.7, Figure 2.9 and Figure 2.11.

Figure 2.5: Designer's Impression on North Approach

Source: Ethos Urban Pty Ltd dated 01/10/2020

Figure 2.6: North Approach Signage Exposure: Visible Distance – Lane 1

Source: Photograph taken by TTPP dated 01/12/2020

Figure 2.7: North Approach Signage Exposure: Readable Distance – Lane 1

Source: Photograph taken by TTPP dated 01/12/2020

Figure 2.8: North Approach Signage Exposure: Visible Distance – Lane 2

Source: Photograph taken by TTPP dated 01/12/2020

Figure 2.9: North Approach Signage Exposure: Readable Distance – Lane 2

Source: Photograph taken by TTPP dated 01/12/2020

Figure 2.10: North Approach Signage Exposure: Visible Distance – Lane 3

Source: Photograph taken by TTPP dated 01/12/2020

Figure 2.11: North Approach Signage Exposure: Readable Distance – Lane 3

Source: Photograph taken by TTPP dated 01/12/2020

2.4 Crash History

Historic crash data has been obtained from Transport for NSW (TfNSW) and assessed for incidents on Mona Vale Road within the viewable distance of the proposed digital signage location. Based on site observations (as detailed in Section 2.3), the proposed signage location is visible from a distance of up to approximately 275m away on the north approach.

Crash history data has been assessed on the north approach to the proposed signage location between 1 April 2015 and 31 March 2020 (5-year completed data). The location of historical crashes in the vicinity and a description of the incident are shown in Figure 2.12.

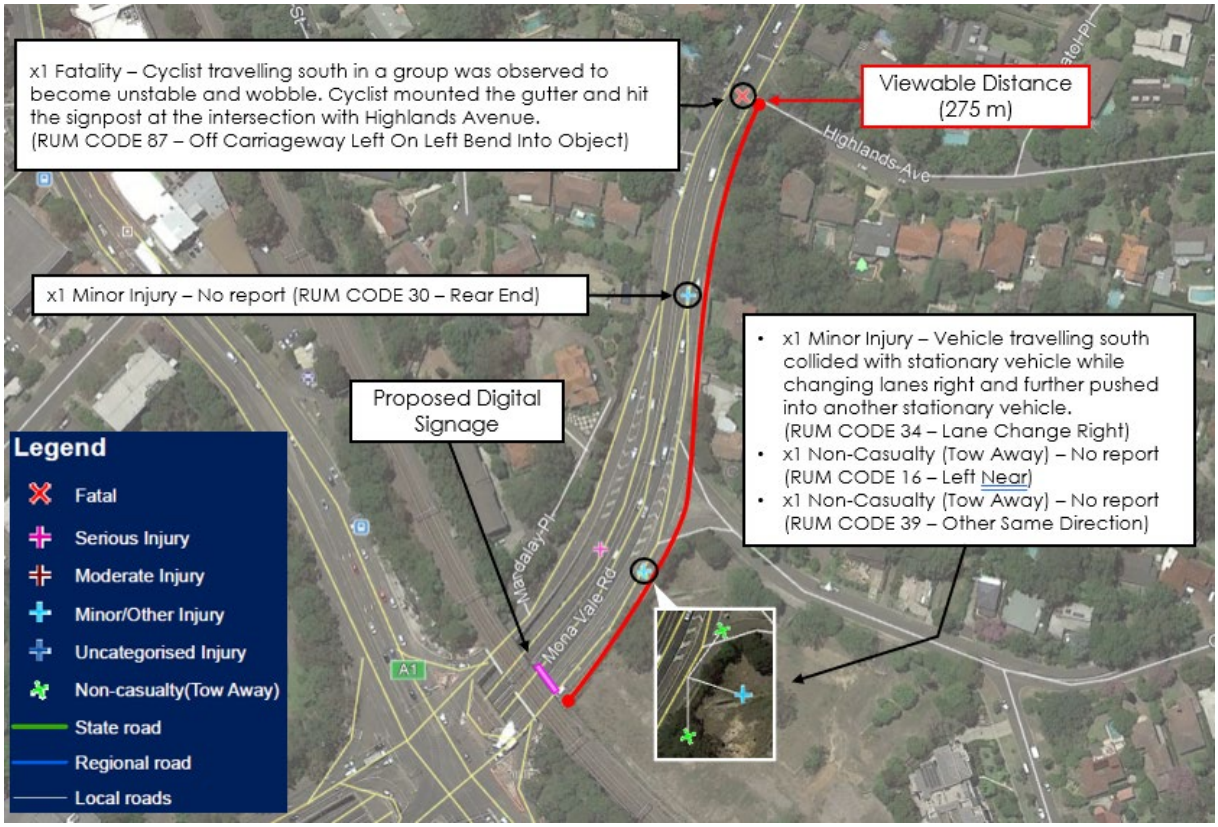
A summary of the crashes in the vicinity of the proposed digital signage is presented in Table 2.1.

Table 2.1: Crash Type and Severity

Location	Crash Type	Crash Severity (No. of Crashes)				
		Fatality	Serious Injury	Moderate Injury	Minor Injury	Non-casualty (tow-away)
Mona Vale Road north approach (up to 275 m away from signage)	Left Near (RUM CODE 16)					1
	Rear End (RUM CODE 30)				1	
	Lane Change Right (RUM CODE 34)				1	
	Other Same Direction (RUM CODE 39)					1
	Off Carriageway Left on Left Bend into Object (RUM CODE 87)	1				
Total		**1**	**0**	**0**	**2**	**2**

Source: Transport for NSW

Figure 2.12: Crash locations in Recent 5-Year Period



Source: Transport for NSW

According to Average Annual Daily Traffic (AADT) provided by Transport for NSW, in 2019 (pre COVID-19) the average daily traffic count on Mona Vale Road was in the order of 45,000 vehicles travelling in two directions or 22,250 vehicles in the southbound direction only. Mona Vale Road forms the northern-most section of the A3, which is a major north-south arterial road through central Sydney.

Given that Mona Vale Road carries a high volume of traffic, it is expected that there would be some crash incidents recorded on the subject arterial road. Notwithstanding this, the number of incidents recorded within the fully visible distance of the proposed digital signage is considered to be low i.e. five crashes in five years. Of these five incidents, one crash resulted in a fatality while the remaining incidents were classified as minor injury or non-casualty (tow away).

The crash which resulted in a fatality involved a cyclist travelling in a group with other cyclists heading southbound on Mona Vale Road. The cyclist was observed to become unstable and wobble which resulted in mounting the gutter and hitting a signpost at the intersection of Mona Vale Road and Highlands Avenue. Notwithstanding this, such issue would be unrelated to the new signage and would not be exacerbated by the proposed digital signage.

Overall, the number of crashes and the severity of crashes within visible distance of the signage is considered to be low.

3 Statutory Requirements

This section of the report assesses the compliance with the road safety assessment criteria established in the Guidelines and SEPP 64. In particular, SEPP 64 requires as to whether the proposal will reduce the safety of:

- Any public roads
- Pedestrians and cyclists
- Pedestrians by obscuring sight lines from public areas.

The proposed concept design has been assessed against the relevant statutory requirements and guidelines. In order to assess any new installation against the above key road safety assessment criteria, a series of detailed criteria are set out in Section 33, *Advertisements and Road Safety* of the Guidelines.

3.1 Sign Location Criteria

3.1.1 Road Clearance

(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?

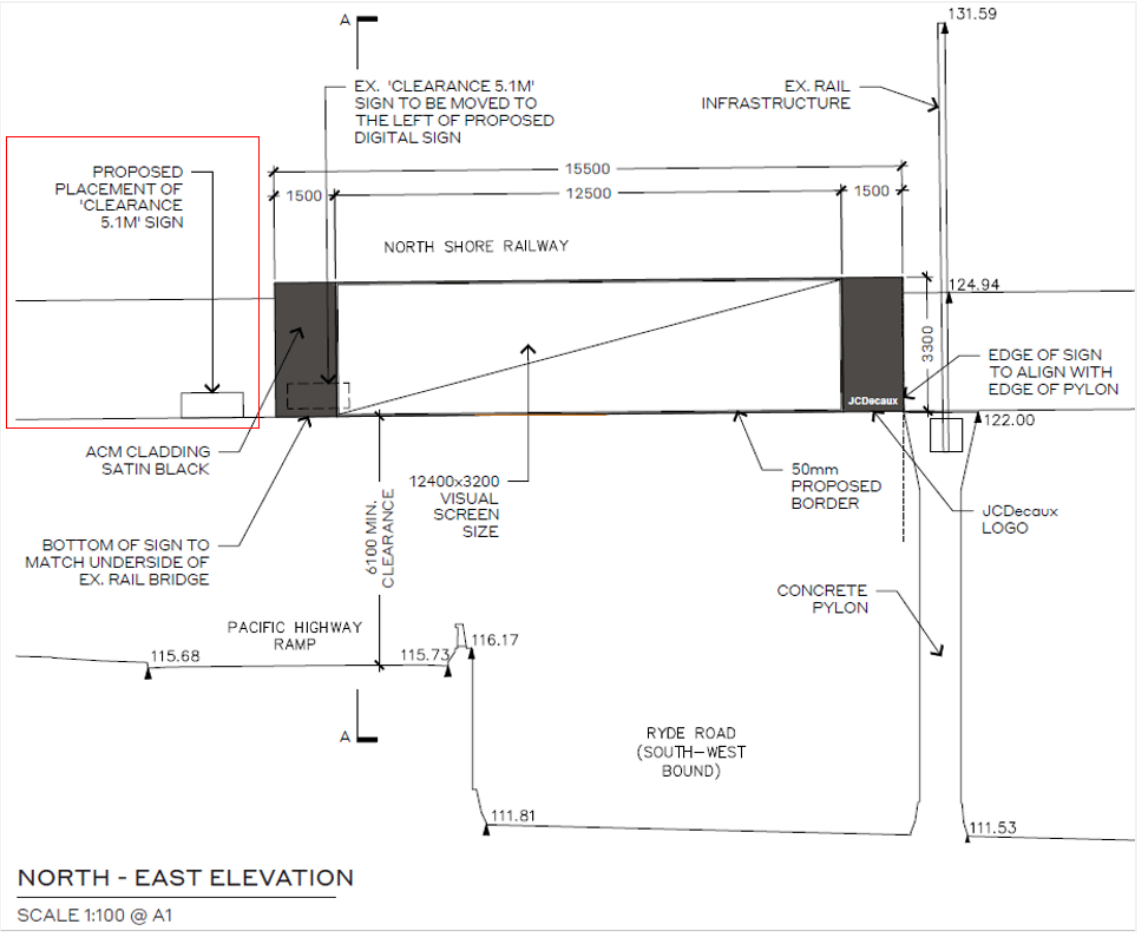
(iii) Does the sign protrude laterally into the transport corridor so it could be hit by trucks or wide vehicles?

The digital signage will not physically obstruct any vehicle, pedestrian and cyclist movements as it will be placed on the side of the railway bridge above Mona Vale Road. The digital signage will not protrude below the underside of the railway bridge and hence the vertical clearance of 5.1m will be maintained as per existing conditions.

The concept design for the signage and its positioning on the side of the railway bridge is shown in Appendix A.

It is noted that the "Clearance 5.1m" signage that exists on the side of the bridge is proposed to be shifted slightly left of the digital signage as shown in Figure 3.1.

Figure 3.1: Off-Ramp Height Clearance Signage



Source: Ethos Urban Pty Ltd dated 01/10/2020

(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 supplement) or behind an RMS-approved crash barrier.

The digital sign board will be installed on the northern side of the railway bridge which is positioned well-above Mona Vale Road southbound carriageway and outside of the clear zone. Hence, it would not require an RMS-approved crash barrier.

(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 any applicable lateral clearances specified by Austroads Guide to Road Design (and RMS supplements) with respect to dynamic deflection and working width.

The digital sign boards will not be located within the clear zone.

A minimum vertical clearance of 5.1m for the Mona Vale Road off-ramp exit lanes to Pacific Highway will be maintained as per the existing conditions.

(d) All signs that are permitted to hang over roads or footpaths should meet wind loading requirements as specified in AS1170.1 and AS 1170.2. All vertical clearances as specified above are regarded as being the height of the sign when under maximum vertical deflection.

As part of the detailed design phase, the proposed signage will be designed in accordance with Australian Standards AS1170.1 and AS1170.2 to meet the requirements for wind loading, whilst having consideration for height of the sign board when under maximum vertical deflection.

3.1.2 Line of Sight

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

The digital signage will be positioned at the height of the railway bridge, not impeding the motorists' visibility of the road alignment. The digital signage would not protrude below the underside of the railway bridge and hence would not be obstructing visibility to any vehicles and cyclists on Mona Vale Road.

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

The proposed digital signage will not obstruct pedestrian or cyclist's view of the road.

(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 signs' 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 proposed digital signage will be positioned at the same height as the railway bridge which would not impede a driver's visibility on the alignment of the road. The digital signage would not indicate misleading information or information contrary to the existing roadway. This is supported by the designer's impression of the proposed signage as shown in Figure 2.5.

(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 reflection 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 headline 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 signage would be located within a driver's line of sight for southbound movements on Mona Vale Road with visible distances of up to 275m. In addition, the digital signage would be placed above the road therefore, a driver would not be required to turn away from the road in order to view the digital signage.

3.1.3 Proximity to Decision Making Points and Conflict Points

(a) A sign should not be located:

- ***(i) Less than the safe sight distance from an intersection, merge points, 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.***

The diverge point between Lane 1 and Lane 2 on Mona Vale Road is located approximately 160m prior to the proposed digital signage (travelling in the southbound direction). The proposed digital signage would be located beyond this diverge point, and thus, would not be situated within the safe sight distance as shown in Figure 3.2.

As per Austroads Guide to Road Design Part 4A, the minimum stopping sight distance (SSD) refers to the distance to enable a normally alert driver, travelling at the operating speed on wet pavement, to perceive, react and brake to a stop before reaching a hazard on the road ahead. This distance is dependent on the operating (85th percentile) speed of the road, road gradient and other road characteristics.

For the purpose of this assessment, an operating speed of 70km/h has been used to calculate the minimum SSD to the diverge point on Mona Vale Road. According to Austroads, the minimum safe stopping sight distance for a 70km/h speed zone is 83m. From Highlands Avenue to the diverge point, Mona Vale Road has an incline of approximately 8.0% as per the Traffic Signal Plan. Where there is a slope on the approach, the Austroads Guidelines specifies a grade correction factor be applied. In this case, a correction of 10m is deducted from the 83m minimum SSD. The guidelines also state that the corrected SSD should be

rounded to the nearest 5 m. Therefore, the safe sight distance becomes 75m as shown in Figure 3.2.

Figure 3.2: Diverge Point on Mona Vale Road Southbound

The proposed signage would be located within the safe stopping distance of the signals at Pacific Highway. Given that the off-ramp has a considerable incline towards the signals and often vehicles were observed to be slowing down towards the traffic signals, a traffic survey using an automatic tube counter (ATC) was undertaken to capture the 85th percentile travel speed of vehicles travelling along the off-ramp for one week.

The ATC was installed 50m north of the stop line on the off-ramp which captured an average 85th percentile speed of 49.9 km/h (rounded to 50 km/h). According to Austroads guidelines, a design speed of 50 km/h requires a minimum SSD of 48m.

As per the Traffic Control Signal plan for the intersection, there is an 8% incline along the off-ramp. In this case, a correction of 5m is deducted from the 48m minimum SSD. Thus, the SSD towards the traffic signals would be 43m. The guidelines also state that the corrected SSD should be rounded to the nearest 5m. Therefore, the safe sight distance becomes 45m.

The signage would be located 35m north of the stop line at the traffic signals, and the signage would become out of view 10m prior (i.e. at 45m from the stop line). Therefore, at the 45m mark, the digital signage would be out of driving view as shown in Figure 3.3 and Figure 3.4.

As such, motorists would not observe the digital advertising sign within the safe stopping distance of the signalised intersection of Pacific Highway with the Mona Vale Road off-ramp. In this regard, motorists would have sufficient reaction and braking time to stop safely on approach to the signalised intersection.

Figure 3.3: Safe Stopping Sight Distance

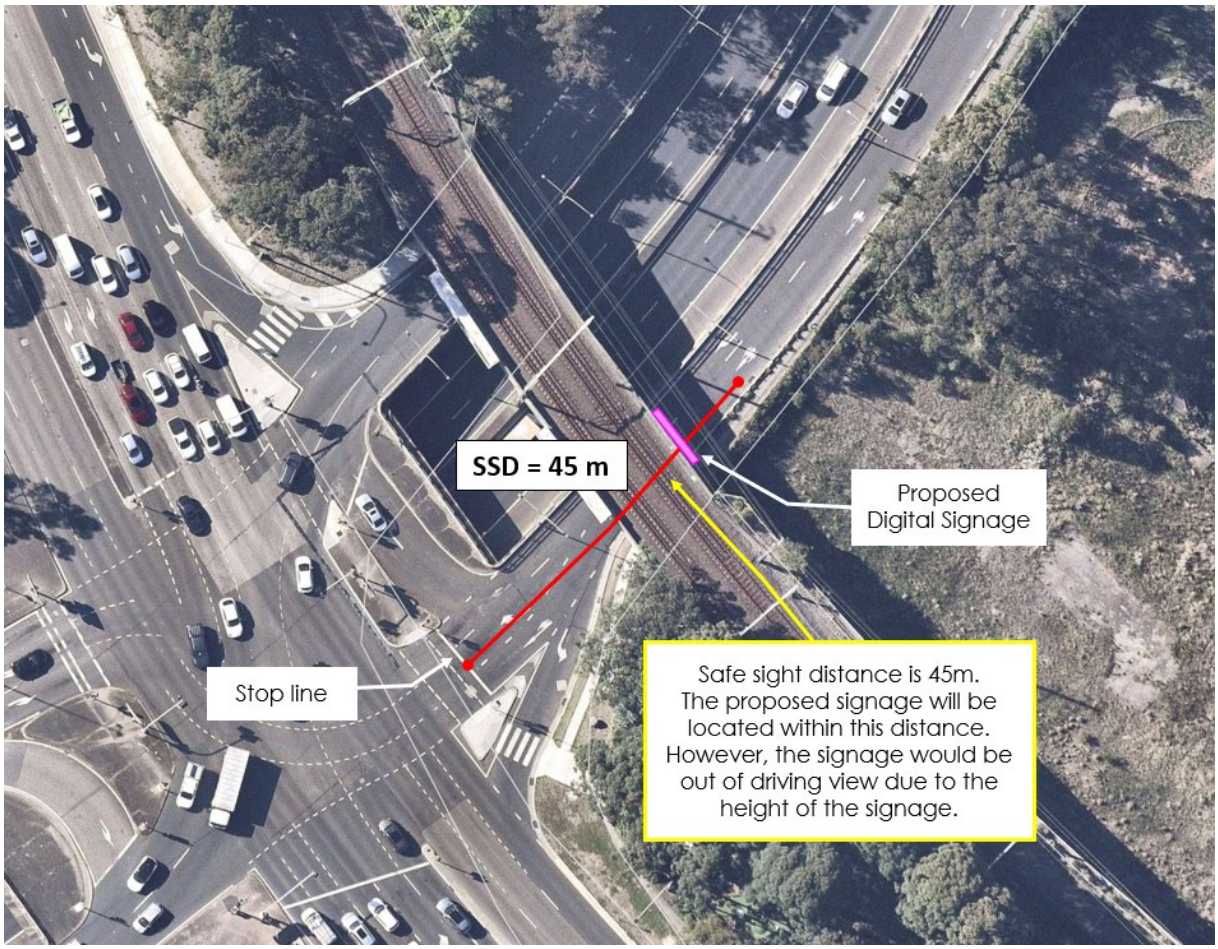


Figure 3.4: Off-Ramp Exit – Driving View at 45 m

The digital signage would be visible from Carlotta Avenue by the driver of the first vehicle waiting at the give-way line. Carlotta Avenue is a side road that intersects with the off-ramp exit to Pacific Highway. Turning movements at the intersection of Carlotta Avenue and the off-ramp are restricted to left-on/ left-out. Motorists exiting Carlotta Avenue would be looking over their right shoulder towards oncoming traffic. Therefore, the driver's focus would be in the opposite direction of the digital signage, observing a safe gap in the oncoming traffic stream.

Motorists positioned behind the first vehicle exiting Carlotta Avenue would not be able to view the digital signage due to roadside vegetation as depicted in Figure 3.5. As such, the digital signage would have a minimal distraction potential to motorists turning left-out from Carlotta Avenue.

Figure 3.5: Driver Visibility from Carlotta Avenue

(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) Of 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.***

A "critical time" is understood to refer to a point in time when a motorist decision is required, implying that a road safety implication could occur if a driver was distracted at this time.

An existing variable message signboard (VMS) and directional sign board are located on Mona Vale Road, near Highlands Avenue as shown in Figure 3.6. For motorists travelling southbound on Mona Vale Road, the digital signage would not be visible to motorists until after both the VMS and directional signs have been passed.

Figure 3.6: VMS and Directional Signage on North Approach

Source: Photograph taken by TTPP dated 01/12/2020

An existing vertical clearance sign is located on the north approach to the railway bridge. This vertical clearance sign will be relocated directly to the left side of the digital signage as shown in the concept design plan (Figure 3.1 and Appendix A).

3.1.4 Sign Spacing

(a) Sign spacing should limit drivers view to a single sign at any given time with a distance of no less than 150m 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.

There are two static billboards located on the southern side of the railway bridge as shown in Figure 2.6. However, these static billboards are facing motorists on the south approach and would not be visible to motorists on the north approach.

Figure 3.7: Existing Signage on Railway Bridge – South Approach

Source: Google Street View dated September 2020

There are no other digital signs or static billboards placed within 150m of the proposed signage in the southbound direction.

3.2 Sign Design and Operations Criteria

3.2.1 Advertising Signage and Traffic Control Devices

(a) The advertisement must not distract a driver from, obstruct 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.

(b) The advertisement must not interfere with stopping sight distance for the road's design speed or the effectiveness of a 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?***

Details of the advertisement/s are not yet known since the project is still within the concept design stage. However, based on the example advertisements as depicted in the designer's impression (Figure 2.5), the digital signage would not display colours and shapes which could be mistaken for traffic signals or traffic control devices.

Notwithstanding this, it is recommended that the content of the proposed digital signage be reviewed against Table 5 of the Guidelines to avoid any content that may be construed as imitating a traffic control device.

3.2.2 Dwell Time and Transition Time

(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:
(i) 10 seconds for areas where the speed limit is below 80km/h
(ii) 25 seconds for areas where the speed limit is 80km/h and over.
(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.
(d) Digital signs must not contain animated or video/movie style advertising or messages of image failure, the default image must be a black screen.
(e) The transition time between messages must be no longer than 0.1 seconds, as in the event of image failure, the default image must be a black screen.

The digital signage is proposed to contain text and images. Based on the Guidelines, the minimum dwell time for content displayed on the digital signage for areas where the speed limit is below 80 km/h is 10 seconds.

The proposed digital signage is not located near a school zone.

3.2.3 Illumination and Reflectance

(a) Luminance levels must comply with the requirements in Table 6 in Transport Corridor Outdoor Advertising and Signage Guidelines
(b) The image displayed on the sign must not otherwise unreasonably dazzle or distract drivers without limitation to their colouring or contain flickering or flashing content.

Section 3.3.3 of the Guidelines details assessment criteria to ensure that illumination and reflectance qualities of signage do not cause a road safety hazard. It is understood that these criteria would be addressed in a separate specialist report prepared by a qualified consultant.

3.2.4 Interaction and Sequencing

(a) The advertisement must no 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.
(b) Message sequencing designed to make a driver anticipated the next message is prohibited across images presented on a single sign and across a series of signs.

The proposed signage would not contain interactive technology or technology that enables opt-in direct communication with motorists. The digital signage would not be designed to make motorists anticipate information.

3.3 Digital Signs

Transport Corridor Advertising Signage Guidelines specify criteria which are directly applicable to the assessment of digital signs. The criteria have been assessed in Table 3.1.

It is noted that most of the criteria are related to signage content and would need to be addressed by the operator. In addition, these criteria should be included as part of the consent conditions for the proposal to ensure future compliance.

Table 3.1: Digital Signs

	Criteria	Comments
A	*Each advertisement must be displayed in a completely static manner, without any motion, for the approved dwell time as per criterion (d) below.*	Relates to sign content only.
B	*Message sequencing designed to make a driver anticipate the next message is prohibited across images presented on a sign and across a series of signs.*	Relates to sign content only.
C	*The image must not be capable of being mistaken:* *i. for a prescribed traffic control device 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 prescribed traffic control device, or* *ii. as text providing driving instructions to drivers.*	Relates to sign content only.
D	*Dwell times for image display are:* *i. 10 seconds for areas where the speed limit is below 80 km/h.* *ii. 25 seconds for areas where the speed limit is 80 km/h and over.*	A dwell time of 10 seconds would be suitable for the proposed digital signage.
E	*The transition time between messages must be no longer than 0.1seconds, and in the event of image failure, the default image must be a black screen.*	An almost instantaneous transition is likely to reduce the additional distraction potential for digital signs. It is assumed that this operational requirement would be met.
F	*Luminance levels must comply with the requirements in Section 3 (Transport Corridor Advertising Signage Guidelines).*	This signage would be classified as Zone 4, with maximum illuminance levels of: i. Day Time – 6,000 cd/sqm ii. Morning/ Evening – 500 cd/sqm iii. Night Time – 200 cd/sqm The signage would be classified as Zone 4 given that the location is primarily surrounded by residential dwellings.
G	*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.*	It is assumed that this operational requirement would be met.
H	*The amount of text and information supplied on a sign should be kept to a minimum (e.g. no more than a driver can read at a short glance).*	Relates to sign content only.

	Criteria	Comments
I	*Any signs 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.*	The sign is not visible from within a school zone.
J	*Each sign proposal must be assessed on a case by case basis including replacement of an existing fixed, scrolling or tri-vision sign with a digital sign and in the instance of a sign being visible from each direction, both directions for each location must be assessed on their own merits.*	Noted.
K	*At any time, including where the speed limit in the area of the sign is changed, if detrimental effect is identified on road safety post installation of a digital sign, RMS reserves the right to re-assess the site using an independent RMS-accredited road safety auditor. Any safety issues identified by the auditor and options for rectifying the issues are to be discussed between RMS and the sign owner and operator.*	Noted.
L	*Sign spacing should limit drivers' view to a single sign at any given time with a distance of no less than 150m 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.*	*Noted.*
M	*Signs greater than or equal to 20sqm must obtain RMS concurrence and must ensure the following minimum vertical clearances;* *i. 2.5m from lowest point of the sign above the road surface if located outside the clear zone* *ii. 5.5m from lowest point of the sign above the road surface if located within the clear zone (including shoulders and traffic lanes) or the deflection zone of a safety barrier if a safety barrier is installed.* *If attached to road infrastructure (such as an overpass), the sign must be located so that no portion of the advertising sign is lower than the minimum vertical clearance under the overpass or supporting structure at the corresponding location.*	The proposed digital signage would maintain the same vertical clearance as the existing rail bridge which is 5.1 m. The vertical clearance signs would be visible beneath the digital advertising signs.
N	*An electronic log of a sign's operational activity must be maintained by the operator for the duration of the development consent and be available to the consent authority and/or RMS to allow a review of the sign's activity in case of a complaint.*	Noted.
O	*A road safety check which focuses on the effects of the placement and operation of all signs over 20sqm must be carried out in accordance with Part 3 of the RMS Guidelines for Road Safety Audit Practices after a 12-month period of operation but within 18 months of the signs installation. The road safety check must be carried out by an independent RMS-accredited road safety auditor who did not contribute to the original application documentation. A copy of the report is to be provided to RMS and any safety concerns identified by the auditor relating to the operation or installation of the sign must be rectified by the applicant. In cases where the applicant is the RMS, the report is to be provided to the Department of Planning and Environment as well.*	Noted.

4 Conclusion

Having consideration for the assessment and discussions presented within this report, the analysis suggests that the installation of a digital signage off the side of the existing railway bridge across Mona Vale Road would be acceptable.

Historically, there is a low number of crashes recorded in this section of Mona Vale Road and off-ramp exit lanes to Pacific Highway, and therefore is deemed to be a low risk area.

This conclusion is made on the basis that the proposed digital signage would not be expected to:

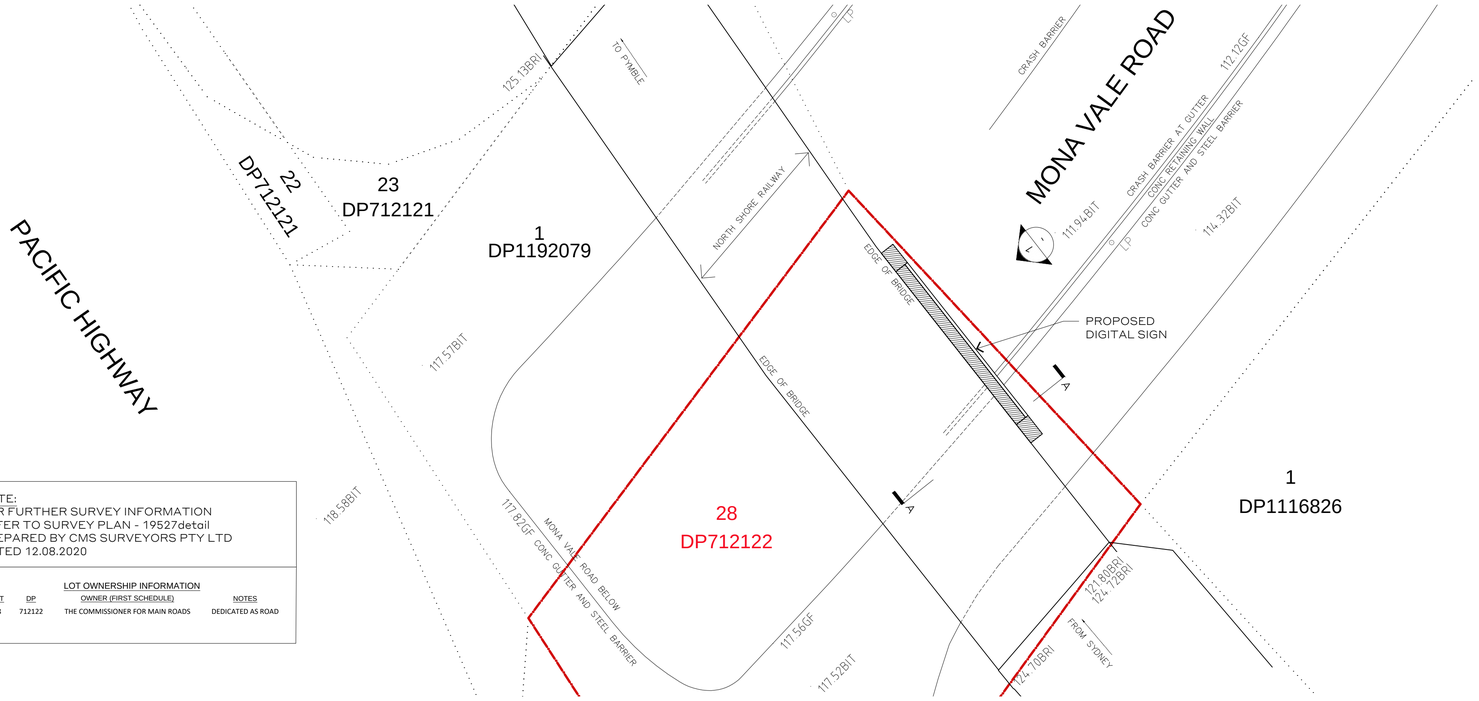
- Obstruct/ reduce visibility of any traffic control devices.
- Give incorrect information on the alignment of the road.
- Affect road safety at the off-ramp merge and exit points.
- Interfere with a driver's ability to read, interpret and react to information displayed by variable message signs.
- Compromise safety for road users in the vicinity.

Appendix A

Concept Design Plan

LOCATION PLAN
AERIAL PHOTO

NTS



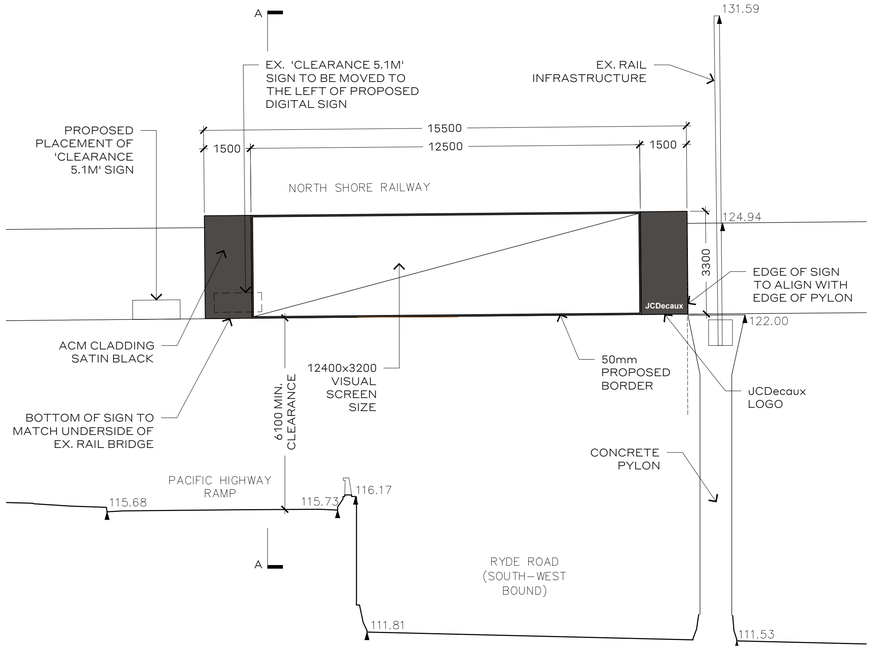
NOTE:
FOR FURTHER SURVEY INFORMATION
REFER TO SURVEY PLAN - 19527detail
PREPARED BY CMS SURVEYORS PTY LTD
DATED 12.08.2020

LOT OWNERSHIP INFORMATION

LOT	DP	OWNER (FIRST SCHEDULE)	NOTES
28	712122	THE COMMISSIONER FOR MAIN ROADS	DEDICATED AS ROAD

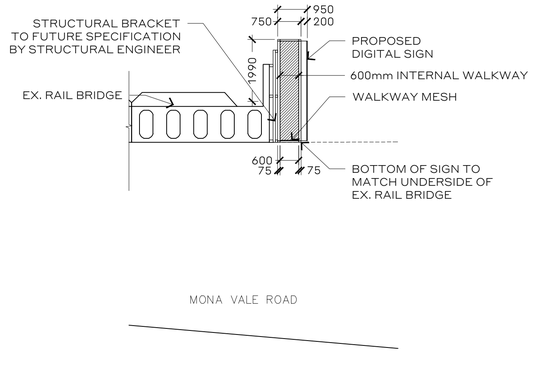
SITE PLAN

SCALE 1:200 @ A1



NORTH - EAST ELEVATION

SCALE 1:100 @ A1



SECTION A-A

SCALE 1:100 @ A1

PHOTOMONTAGE - VIEW 1

View from Mona Vale Road looking south

NOT FOR CONSTRUCTION

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LEGEND / NOTES

- Photomontage location
- Indicative signage location

ISSUE	DATE	REVISION	REVISION BY	APPROVED BY
P1	01.10.20	Work in progress	TB	SM

DRAFT

PROJECT

DOOH Development Applications
Prepared for Sydney Trains

SCALE
AS SHOWN @ A1

DRAWING

Site Plan & General Arrangement **A-5.1**
Site 8 - Pymble /P1

JOB NO.	DWG NO.	ISSUE	DATE	DRAWN BY
2200249	A-5.1	P1	01.10.20	TB

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