Homebush Bay Drive, Rhodes
Digital Signage Safety Assessment

Prepared for:

Ethos Urban

1 December 2020

The Transport Planning Partnership

Homebush Bay Drive, Rhodes
Digital Signage Safety Assessment

Client: Ethos Urban

Version: V02

Date: 1 December 2020

TTPP Reference: 20406

Quality Record

Version	Date	Prepared by	Reviewed by	Approved by	Signature
V01	30/11/20	Santi Botross	Wayne Johnson	Wayne Johnson	
V02	01/12/20	Santi Botross	Wayne Johnson	Wayne Johnson	

Table of Contents

Tables

Figures

APPENDICES

1 Introduction

1.1 Overview

Sydney Trains is seeking approval for the installation of a LED digital illuminated sign on a monopole (single post) located on the north side of Homebush Bay Drive. The proposed signage is proposed to be located on both sides of the post, facing eastbound and westbound travel lanes on Homebush Bay Drive.

Transport for NSW (TfNSW), formerly Roads and Maritime Services require 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'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 practice for the planning and design of outdoor advertisements in transport corridors. The SEPP 64 sets out rules regarding 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 surrounding road network. This report sets out the findings of TTPP's signage safety assessment for the proposed digital signage adjacent to Homebush Bay Drive in Rhodes.

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 signalised mid-block pedestrian crossing.
- Distance from upstream or downstream intersections or other decision points, such as merge points and diverging points.
- Potential for the signage to distract at a critical time 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 Homebush Bay Drive carried out on Friday 13 November 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 29/09/2020.

2 Proposal Description

2.1 Location Details

A new digital signage is proposed to be installed on a single post on the north side of Homebush Bay Drive in Rhodes. The post would be located on the west side of the rail line (T9 Northern Line) as shown in Figure 2.1. Currently, there are no sign boards at this location.

In the vicinity of the proposed signage, Homebush Bay Drive has three travel lanes in each of the westbound and eastbound directions.

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

Figure 2.1: Signage Location

Basemap source: Nearmap, aerial imagery dated 26 September 2020

2.2 Description of Proposed Signage

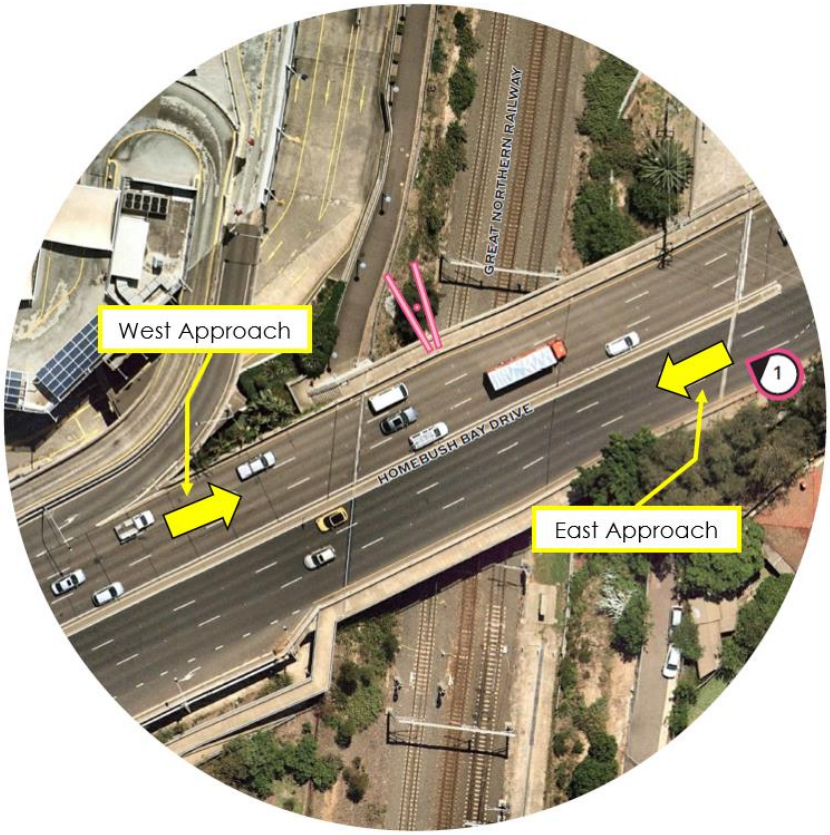
Each signage board will have a length of 12.58 m and height of 3.95 m, and a visual screen with a length of 12.48 m and height of 3.20 m (39.9 m^2 area). A 50mm black border would surround the visual screen while there would be a 650 mm black skirt at the base of the signage. The monopole upon which the sign boards shall be mounted would be 800 mm in diameter. The digital signs will not cantilever above the roadway.

The digital signage with LED panel will be installed on both sides of the monopole which face the eastbound and westbound travel lanes on Homebush Bay Drive. 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 Homebush Bay Drive on the east approach and west approach, as shown in Figure 2.2. A site visit was undertaken on Friday 13 November 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.

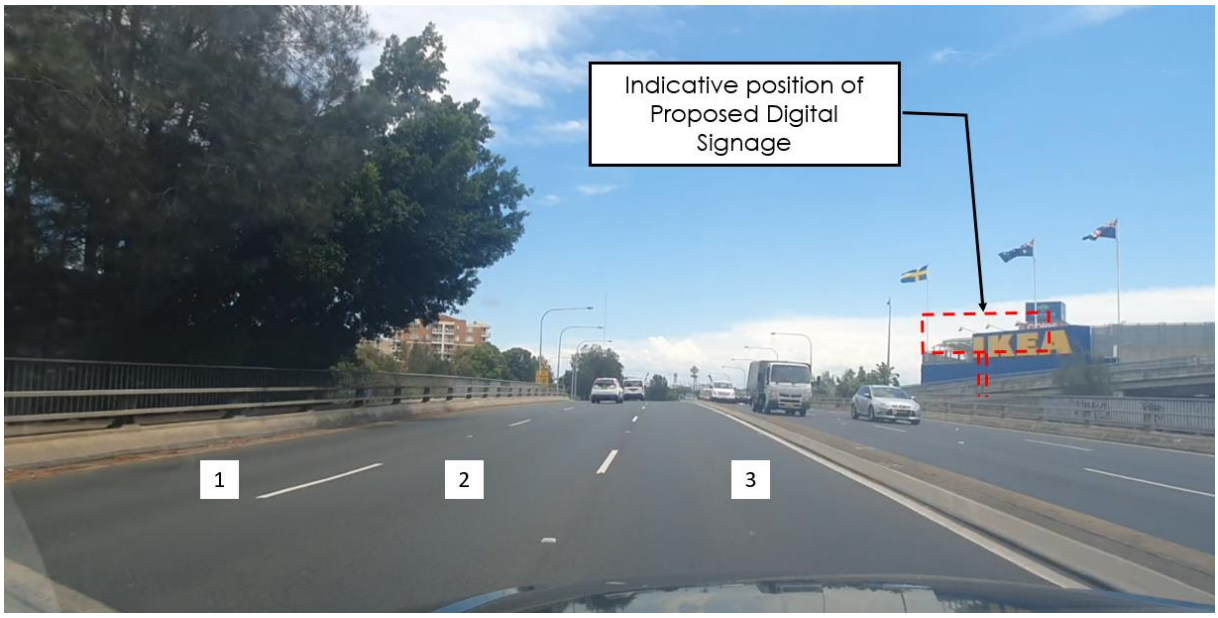
Figure 2.2: Homebush Bay Drive Approaches



2.3.1 Homebush Bay Drive East Approach

The lane configuration on Homebush Bay Drive east approach in the vicinity of the proposed signage is shown in Figure 2.3. There are three travel lanes on approach to the proposed signage location. The opposing traffic lanes are separated by a raised median that is approximately 500 mm wide.

Figure 2.3: Homebush Bay Drive East Approach Lane Configuration

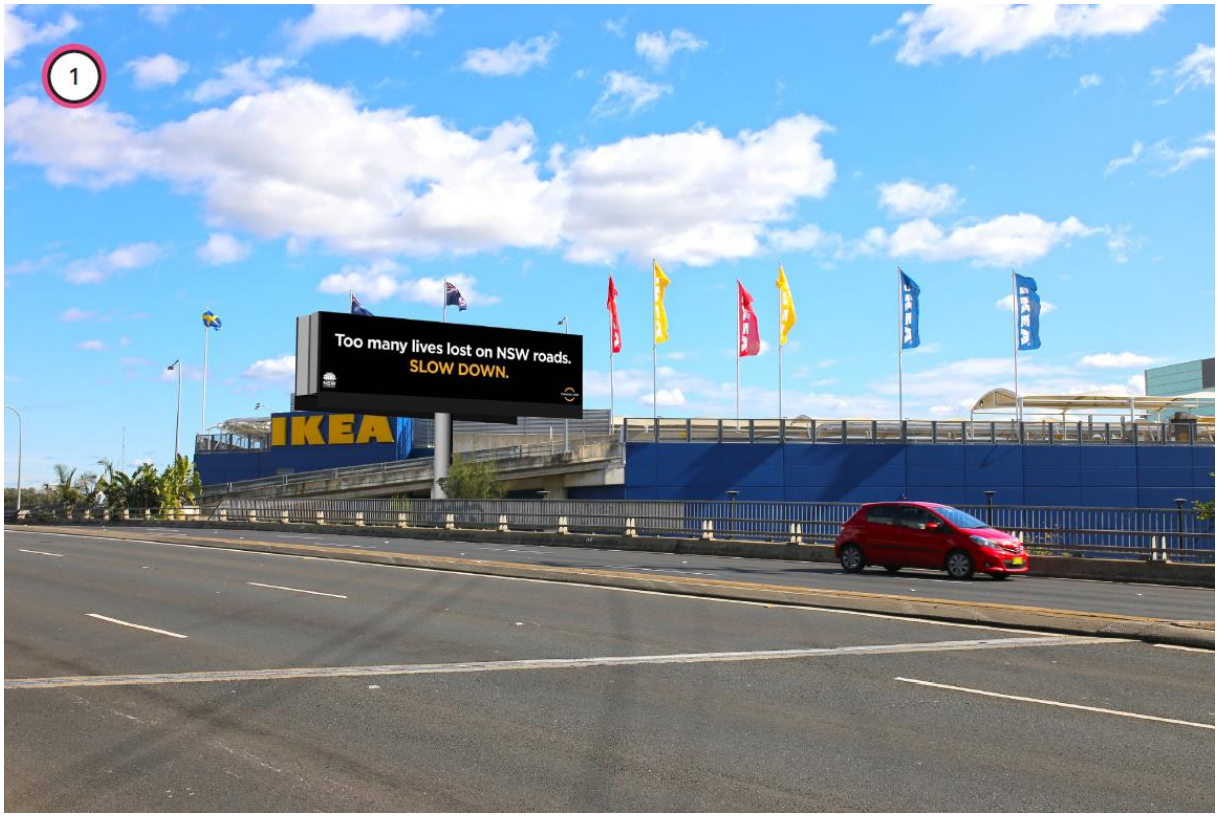


Source: Photograph taken by TTPP on 13/11/2020

- The east facing digital signage would be visible to motorists on Homebush Bay Drive travelling westbound.
- The digital signage would likely be visible in traffic lanes as follows:
  - In Lane 1 (through lane), 150 m from the sign on the east approach.
  - In Lane 2 (through lane), 150 m from the sign on the east approach.
  - In Lane 3 (through lane), 150 m from the sign on the east approach.
- In all lanes, the digital signage would become out of driving view approximately 10 m east of the proposed signage.

Figure 2.4 shows the perspective of the designer's impression of the concept design at the proposed signage location. Likely visible distances on Homebush Bay Drive east approach are shown in Figure 2.7 and Figure 2.6.

Figure 2.4: Designer's Impression on East Approach



Source: Ethos Urban Pty Ltd dated 29/09/2020

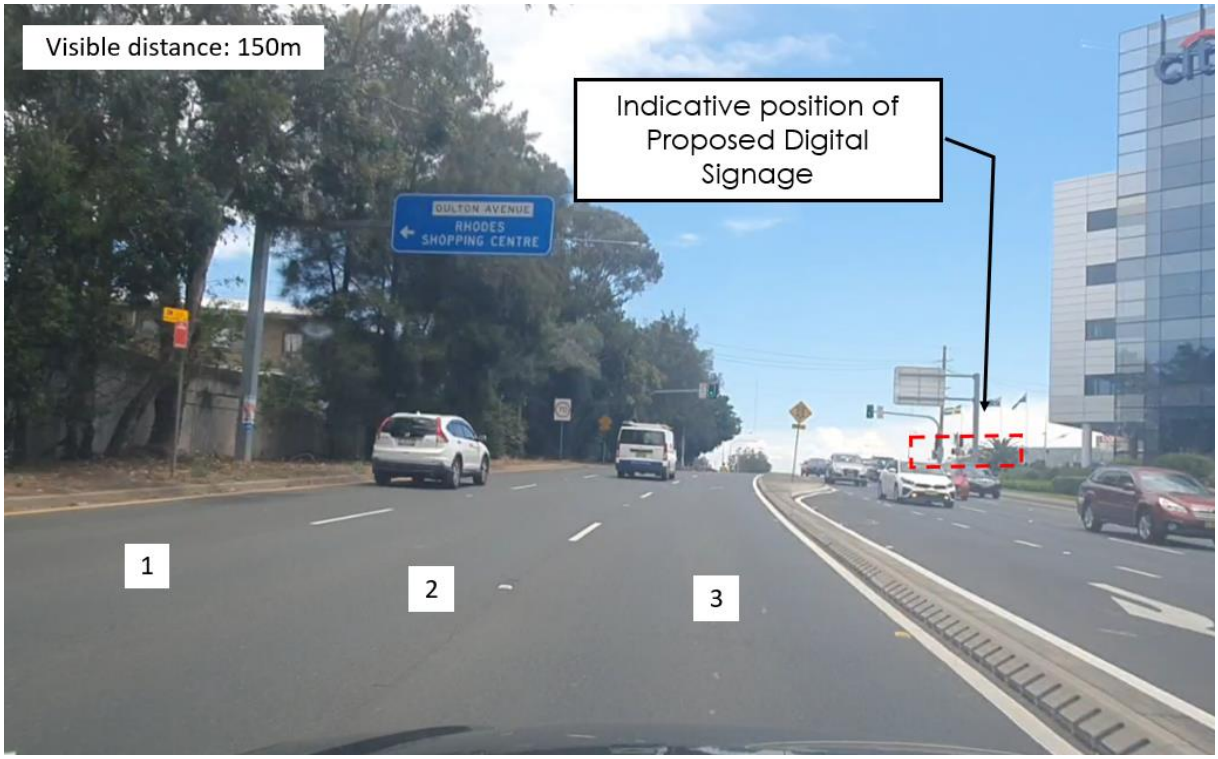
Figure 2.5: East Approach Signage Exposure – Lane 1

Source: Photograph taken by TTPP dated 13/11/2020

Figure 2.6: East Approach Signage Exposure – Lane 2

Source: Photograph taken by TTPP dated 13/11/2020

Figure 2.7: East Approach Signage Exposure – Lane 3

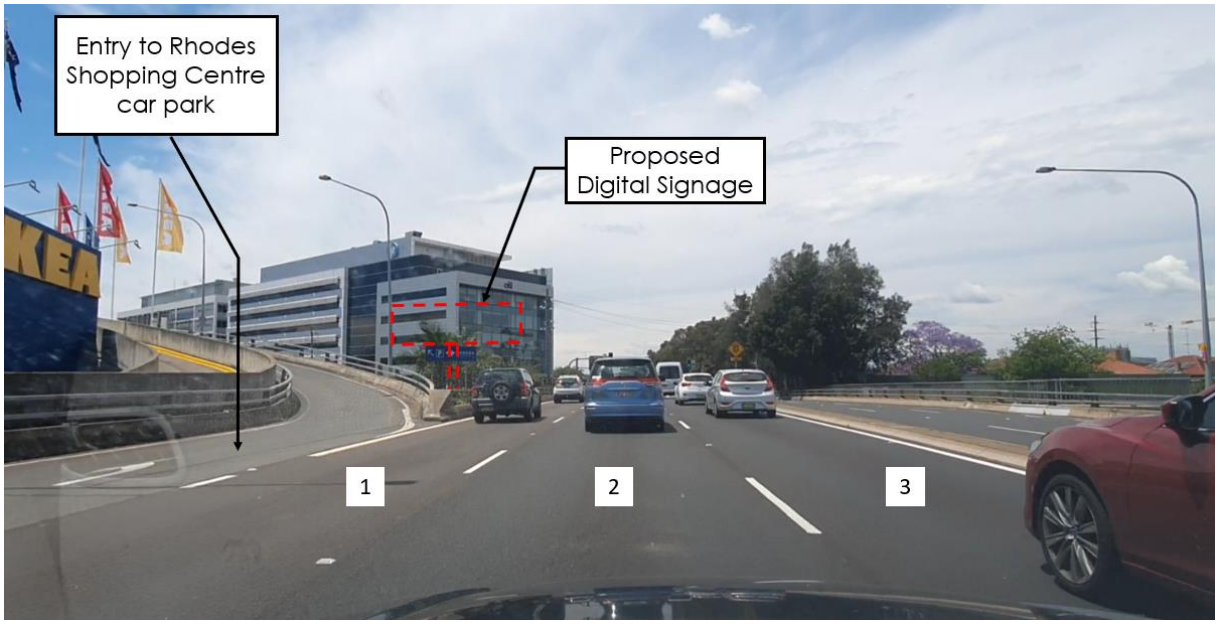


Source: Photograph taken by TTPP dated 13/11/2020

2.3.2 Homebush Bay Drive West Approach

The lane configuration on the Homebush Bay Drive west approach in the vicinity of the proposed signage location is shown in Figure 2.8. Travel lanes are numbered 1 to 3 starting from the kerbside lane.

Figure 2.8: Homebush Bay Drive West Approach Lane Configuration



Source: Photograph taken by TTPP on 13/11/2020

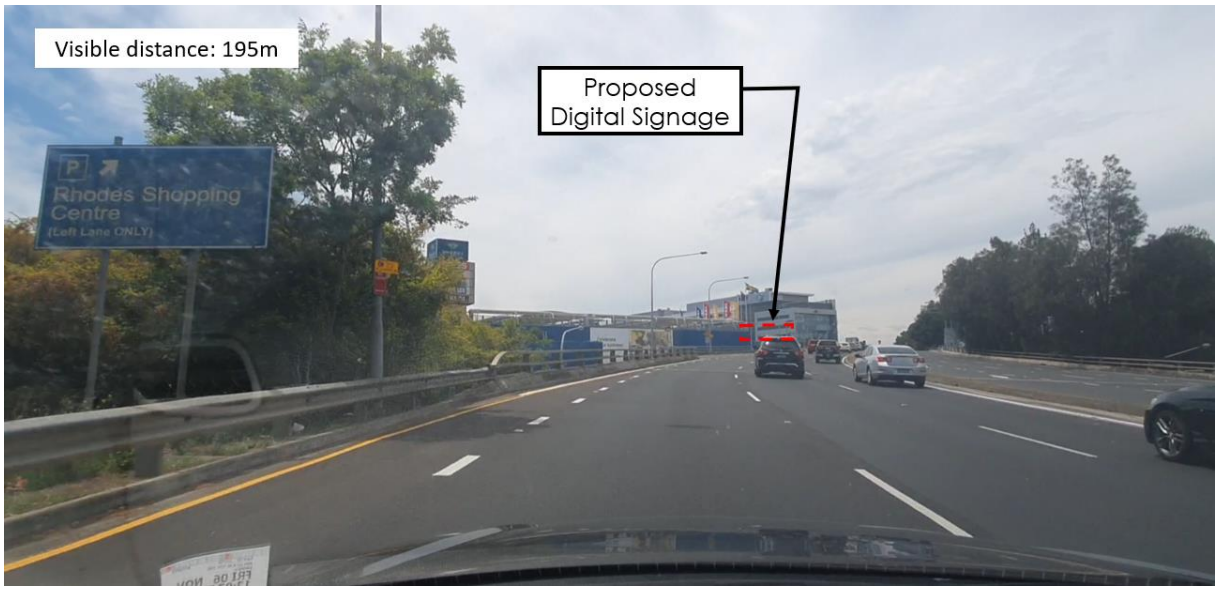
- The west facing digital signage would be visible to motorists on Homebush Bay Drive travelling eastbound.
- The digital signage would likely be visible in traffic lanes as follows:
  - Rhodes Shopping Centre car park left-turn slip lane, as soon as a driver enters the lane (approximately 125 m from the sign).
  - In Lane 1 (through lane), 195 m from the sign on the west approach.
  - In Lane 2 (through lane), 260 m from the sign on the west approach.
  - In Lane 3 (through lane), 260 m from the sign on the west approach.
- In all lanes, the digital signage would become out of driving view approximately 10 m west of the proposed signage.

Likely visible distances on Homebush Bay Drive west approach are shown in Figure 2.9 and Figure 2.12.

Figure 2.9: West Approach Signage Exposure – Shopping Centre Slip Lane Entry

Source: Photograph taken by TTPP on 13/11/2020

Figure 2.10: West Approach Signage Exposure – Lane 1

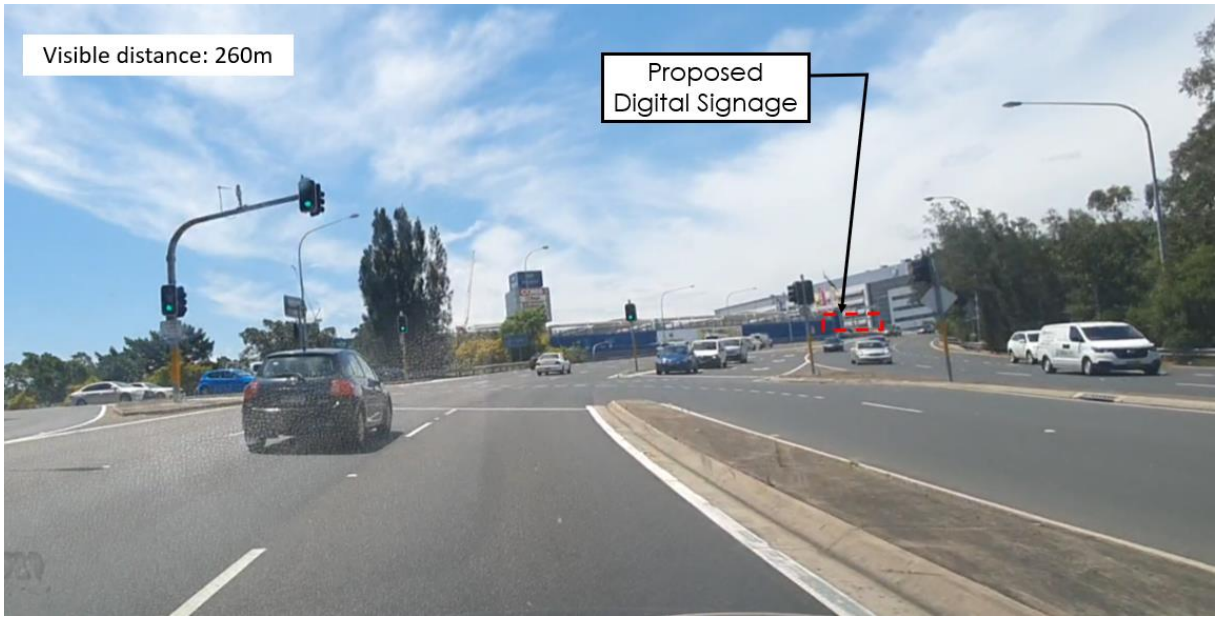


Source: Photograph taken by TTPP on 13/11/2020

Figure 2.11: West Approach Signage Exposure – Lane 2

Source: Photograph taken by TTPP on 13/11/2020

Figure 2.12: West Approach Signage Exposure – Lane 3



Source: Photograph taken by TTPP on 13/11/2020

2.4 Crash History

Historic crash data has been obtained from Transport for NSW (TfNSW) and assessed for incidents on Homebush Bay Drive within the viewable distance of the proposed signage location. Based on site observations (as detailed in Section 2.3), the proposed signage location is visible from a distance of approximately 150 m and 260 m away on the east approach and west approach, respectively.

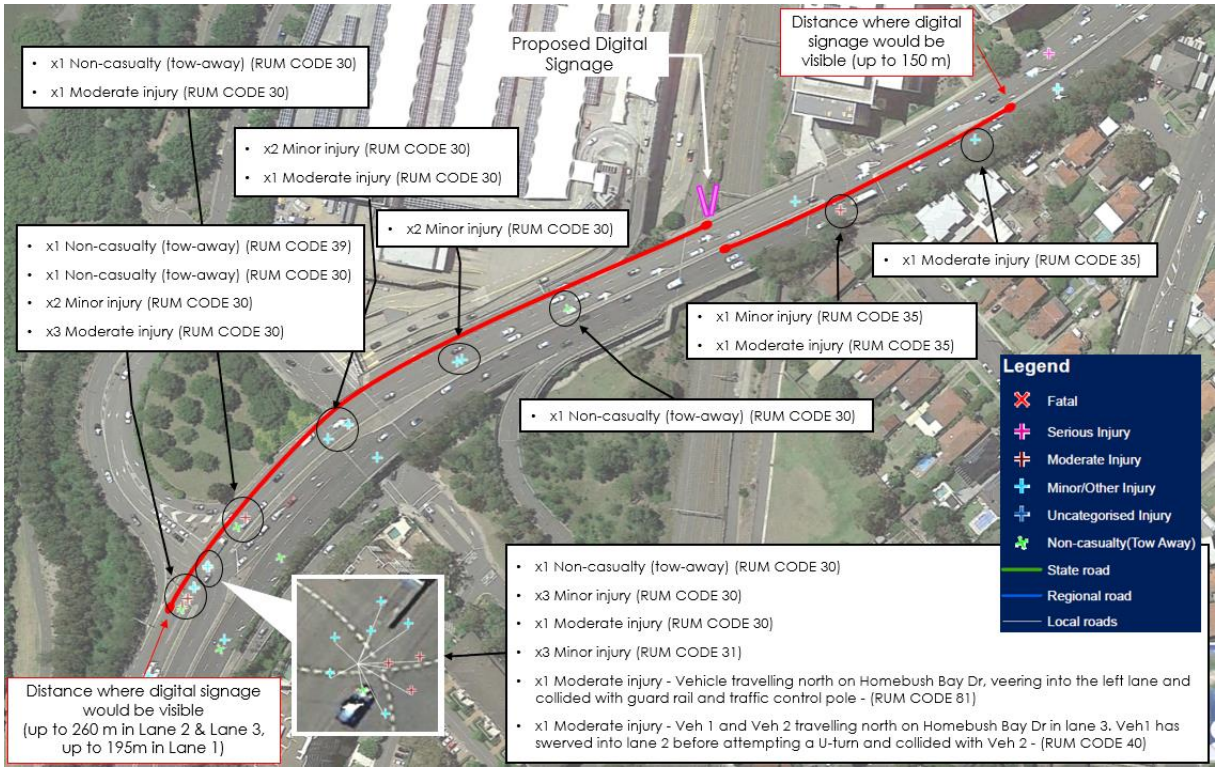
Crash history data has been assessed on both approaches to the proposed signage location between 1 January 2015 and 31 December 2019 (5-year finalised data). A summary of the crashes in the vicinity of the proposed digital signage is presented in Table 2.1. The location of reported incidents is shown in Figure 2.13.

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)
West Approach	Rear End (RUM CODE 30)			6	9	4
	Left Rear (RUM CODE 31)				3	
	Off Carriageway, Left on Right-Hand Bend Into Object/ Parked Vehicle (RUM CODE 81)			1		
	U-Turn (RUM CODE 40)			1		
	Other Same Direction (RUM CODE 39)					1
	Sub-total			**8**	**12**	**5**
East Approach	Lane Change Left (RUM CODE 35)			1	2	
	Sub-total			**1**	**2**	
-	**Total**	**0**	**0**	**9**	**14**	**5**

Source: Transport for NSW

Figure 2.13: Crash Locations in Recent 5-Year Period



Source: Transport for NSW

According to Average Annual Daily Traffic (AADT) provided by Roads and Maritime, in 2019 (pre COVID-19) the average daily traffic count on Concord Road, north on Homebush Bay Drive (near Ryde Bridge), was in the order of 98,800 vehicles travelling in two directions. Homebush Bay Drive and Concord Road form part of the A3 which is a major arterial in Sydney. The A3 is a key connector in the Sydney road network as it is the more direct route between South/South-Western Sydney and the Northern Suburbs.

Given that Homebush Bay Drive/ Concord Road carries a high volume of traffic it is expected that there would be some crash incidents recorded along the route. The severity of crashes which have occurred within the visible distance of the digital signage rated between moderate - minor or resulted in no injury with the vehicle being towed-away. Half of the total number of crashes in the visible distance resulted in minor injury i.e. 14 out of 28 crashes.

The most common incident to occur in the vicinity is a rear-end crash type (RUM CODE 30) i.e. 19 out of 28 crashes.

In the past five years, there were no crashes which resulted in a serious injury or fatality.

3 Statutory Requirements

This section of the report assesses the compliance with the road safety assessment criteria established in the NSW Guidelines and State Environmental Planning Policy (SEPP) 64 requires analysis 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 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 3, *Advertisements and Road Safety* of the NSW 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).

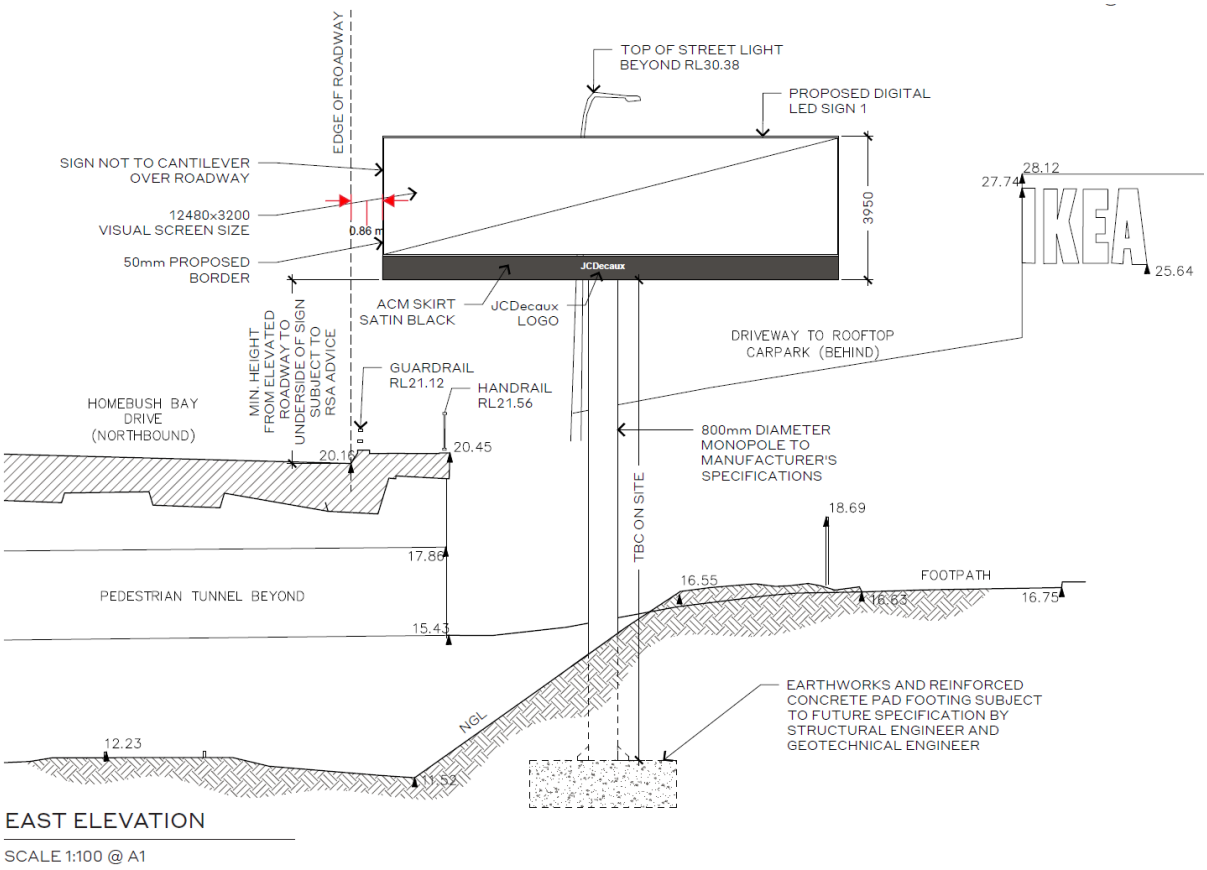
(ii) Does the sign protrude below a bridge or other structure so it could be hit by trucks or other tall vehicles? Will the clearance between the road surface and the bottom of the sign meet appropriate road standards for that particular road?

(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 to the side of the carriageway. The digital sign board would not cantilever over the roadway. The edge of the signage closest to the roadway will be set-back behind the existing traffic barrier; namely, a two-rail barrier installed on top of a parapet which is in-line with NSW Government's *Bridge Aesthetics Design guideline to improve the appearance of bridge in NSW*, prepared for the TfNSW Centre for Urban Design in February 2019.

Also, the signage will be offset from the edge of the roadway by 0.8 m as shown in Figure 3.1. Full-scale drawings of the concept design are contained in Appendix A.

Figure 3.1: Proposed Digital Signage – East Elevation



(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 edge of the signage is located approximately 0.8 m behind an existing traffic barrier on the Homebush Bay west approach which is assumed to be RMS-approved. The signage supports are located within the Sydney Trains site boundary and are a sufficient distance away from any public roadways.

(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 signage will not be located within the clear zone.

The signage would not overhang the roadway, and the monopole upon which the signage will be erected, is to be located approximately 7.3m from the edge of the roadway i.e. the edge of the nearest through lane, Lane 1. Furthermore, the monopole structure will be located behind the existing traffic barrier.

(d) All signs that are permitted to hang over roads or footpaths should meet wind loading requirements as specified in AS1170.1 and AS1170.2. 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 AS1170.2 and AS1170.2 to meet the requirements for wind loading, whilst having consideration for height of the sign boards 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 proposed digital signage would not obstruct visibility to other vehicles at crossings in the vicinity. The signage would be located adjacent to the Homebush Bay Drive road corridor with no part of the signage obstructing visibility to any vehicles on the roadway.

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

The proposed digital signage will not obstruct pedestrian and cyclist's view when on the footpath, which is located on the north side of Homebush Bay Drive (behind the traffic barrier).

(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 signage would be positioned beside the roadway, not impeding motorists' visibility of the road alignment. 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 depicted in Figure 2.4.

(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 motorists travelling towards the signage on both approaches with visible distances of up to 260 m. Therefore, a driver would not be required to turn away from the road in order to view the digital signage.

Since there is currently no signage at this location, the potential for glare or headlight reflection could not be checked. Notwithstanding this, the orientation of the proposed digital signage would be designed and checked such that headlight reflections do not pose an issue for motorists.

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.***

As referenced in the Guide to Road Design, Part 3, sight distance refers to the distance required to enable a driver to react and stop before reaching a hazard. 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 70 km/h has been used to calculate the minimum SSD. A 70 km/h speed has been adopted based on the signposted speed limit on Homebush Bay Drive. According to Austroads, the minimum safe stopping sight distance for a 70 km/h speed zone is 83 m.

On the east approach, there is an upward slope towards the proposed signage location of 2.0% as measured off Nearmap. Where there is a slope on the approach, the Guidelines specifies a grade correction factor be applied. In this case, a correction of 3 m is subtracted

from the 83 m safe sight distance. Therefore, the safe sight distance becomes 80 m. On this basis, the digital signage will be located beyond the traffic signals for the nearby car park exit. As such, the digital signage would not be located within the safe stopping sight distance as shown in Figure 3.2.

On the west approach, there is an upward slope towards the proposed signage location of 3.4% which has been rounded to 4%. As per the Austroads guidelines, a correction of 7 m is subtracted from the 83 m safe sight distance, making the SSD 76 m. The guidelines stipulate that corrected stopping distances should be rounded conservatively to the nearest 5 m. On this basis, the safe sight distance becomes 80 m.

Figure 3.2: Driving View towards Traffic Signals – West Approach

The digital signage would be located 50 m prior to the traffic signals for the nearby car park exit. As a minimum, the digital signage would be visible from a distance of 195 m away (as described in Section 2.3.2). Upon traveling a further 60 m eastbound, the traffic signals are visible to a driver; at this point, the driver is positioned 195 m from the traffic signals and 105 m from the proposed digital signage as shown in Figure 3.3.

However, for the entire time approaching the traffic signals the digital signage would not obstruct a driver's view of the traffic lanterns as the digital signage would be positioned to the side of the roadway. A photo montage at driving intervals of 50m on approach to the traffic signals is provided in Figure 3.4 illustrating that there would be no obstruction of the traffic signals caused by the digital signage.

Furthermore, the digital signage and the traffic signals would be visible to drivers travelling eastbound for a significant distance on approach. There would be sufficient time for a driver to observe, read, interpret the signage and, most importantly, observe the traffic signals.

Figure 3.3: Driving View towards Traffic Signals – West Approach

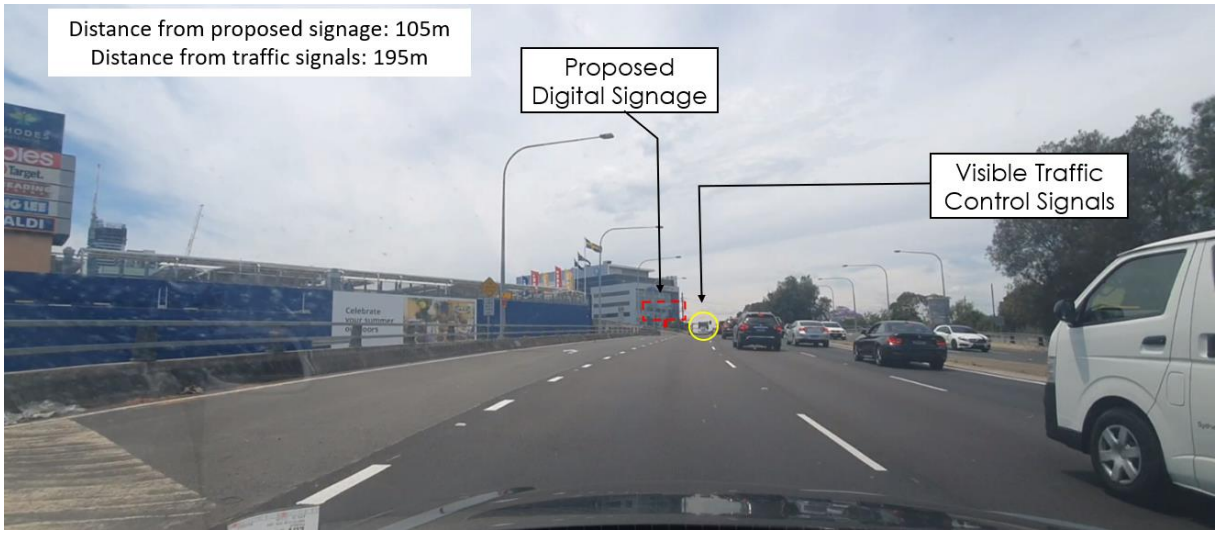


Figure 3.4: Photo Montage at Intervals – West Approach

As a measure to mitigate any preserved safety risk of the signage placement in the vicinity of the traffic signals, it is recommended that the minimum dwell time for content displayed on the digital signage be increased from the suggested duration as stipulated by the *Transport Corridor Outdoor Advertising and Signage Guidelines*.

For signage that is in an area having a speed limit below 80 km/h, the Guidelines prescribe a dwell time of 10 seconds. However, it is suggested that this be increased to a minimum of 15 seconds. The basis for this recommendation is the Land and Environment Court Case, *Outdoor Systems Pty Ltd v Georges River Council and Roads and Maritime Services [2017] NSWLEC 1505*. In this case, a digital signage was proposed to be installed at the intersection of Princes Highway and Rocky Point Road in Kogarah. The applicant proposed to modify the dwell time of the digital signage to 15 seconds (from 24 hours, as previously approved by RMS as the minimum dwell time). The LEC deemed the reduced dwell time to 15 seconds appropriate on the basis that the crash history at the proposed signage location did not suggest that it was "a crash hotspot". This decision was driven by expert evidence provided by registered psychologist and RMS accredited Level 3 Road Safety Auditor, Carolyn Samsa, who spent five years working in the NSW Centre for Road Safety at the RTA and nine years in the advising industry associations representing outdoor advertising.

The LEC decision was further supported by the fact that during a 3-month period where the digital signage operated with a 10 second dwell time, there were no crashes reported in the vicinity of the sign. Furthermore, it was acknowledged in the court case that there were three other digital billboards that were previously approved and operational at signalised intersections within the Sydney basin with dwell times of approximately 10 seconds and yet there were no reported incidents of drivers being distracted by these signs as far as Samsa had been aware.

On this basis, a dwell time of 15 seconds, a five second increase on the 10 seconds dwell time prescribed by the Guidelines, would be appropriate.

(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 driver decision is required, implying that a road safety implication could occur if a driver was distracted at this time.

Within the visible distance on both approaches, the proposed digital signage would not obstruct visibility to the traffic signal as shown in Figure 3.4. Given that the visible distance to the digital signage is150 m on the east approach and 195-260 m on the west approach, there is sufficient time for motorists to view the signage without it causing distraction or shifting driver focus away from the traffic signals.

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 no other digital signs or static billboards placed within 150m of the proposed signage in both directions.

3.2 Sign Design and Operation 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 2.4), the signage would not display colours and shapes which could be mistaken for a traffic signal.

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

As the proposed signage would be located in the vicinity of traffic signals, it is recommended that the use of flashing lights and digital content containing 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 not be used. Green or amber should be restricted to avoid additional distraction potential. Furthermore, the image must not contain text providing driving instructions to drivers.

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.

The digital signage is proposed to contain text and images. Based on the NSW Guidelines, the minimum dwell time for content displayed on the digital signage would be 10 seconds. However, since that the proposed digital signage is located within close proximity to traffic signals, it is recommended that the dwell time be increased from 10 seconds to 15 seconds as explained in Section 3.1.1.

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 NSW 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 direction 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.*	As detailed in Section 3.2.2, a dwell time of 15 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 3. Note: Zone 3 covers areas with generally medium off-street ambient lighting e.g. small to medium shopping/ commercial centres.
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.
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*	Noted.

	Criteria	Comments
	sign being visible from each direction, both directions for each location must be assessed on their own merits.	
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.*	Digital signage will be located outside of the clear zone, and greater than 2.5m from the lowest point of the sign above the road surface.
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 on the north side of Homebush Bay Drive would be acceptable.

The Guidelines stipulate that the dwell time for an image display must not be less than 10 seconds for areas where the speed limit is below 80 km/h. The digital signage is proposed in an area that is zoned as 70 km/h, and thus, a minimum dwell time of 10 seconds is applicable. However, since the proposed digital signage is located within close proximity to traffic signals on Homebush Bay Drive, it is recommended that the minimum dwell time be increased to 15 seconds.

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

- Obstruct/ reduce visibility of any traffic control devices, pedestrians or cyclists
- Give incorrect information on the alignment of the road
- Interfere with the safe stopping distance to traffic signals, crossings or directional/ information signage
- Compromise safety for road users in the vicinity.

Appendix A

Concept Design Plans

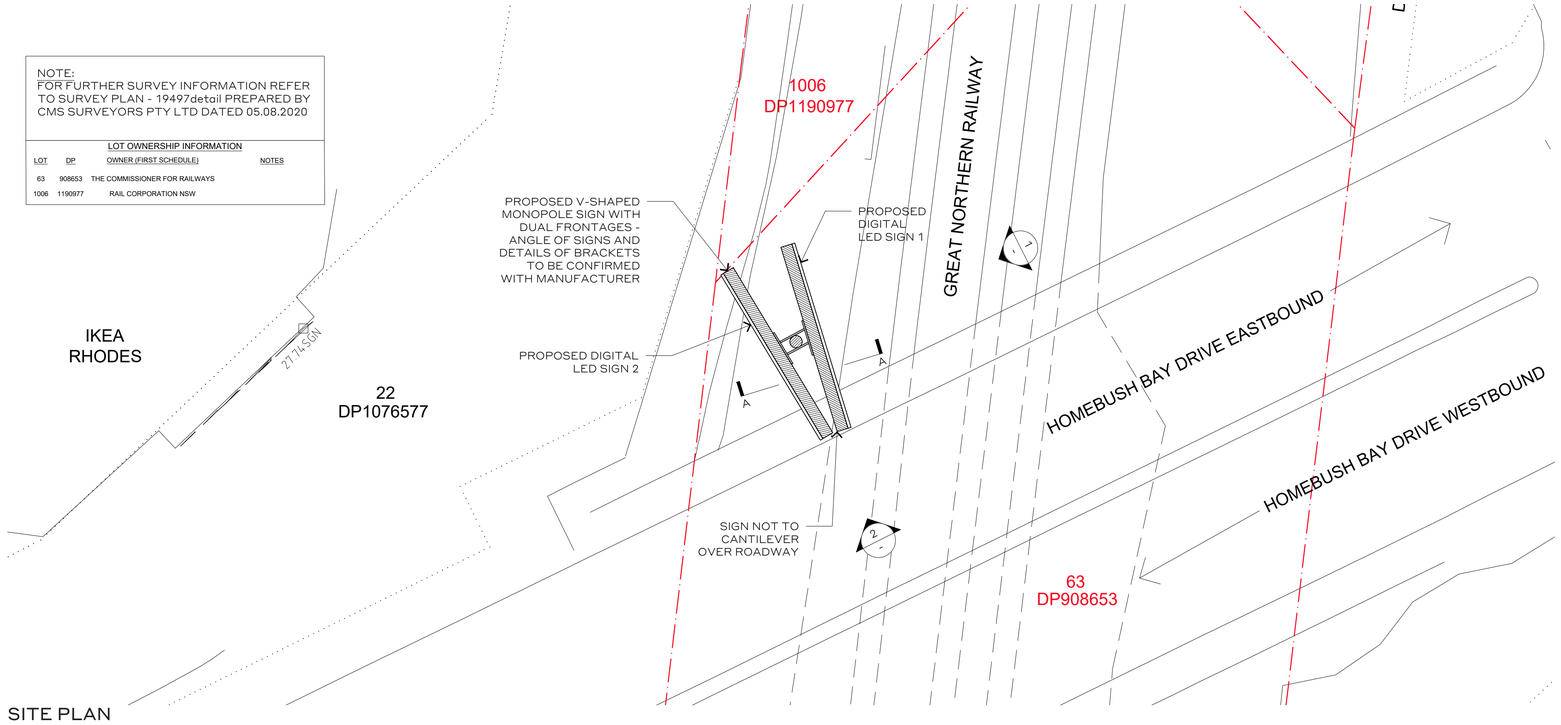
LOCATION PLAN - AERIAL PHOTO

NTS

NOTE:
FOR FURTHER SURVEY INFORMATION REFER TO SURVEY PLAN - 19497detail PREPARED BY CMS SURVEYORS PTY LTD DATED 05.08.2020

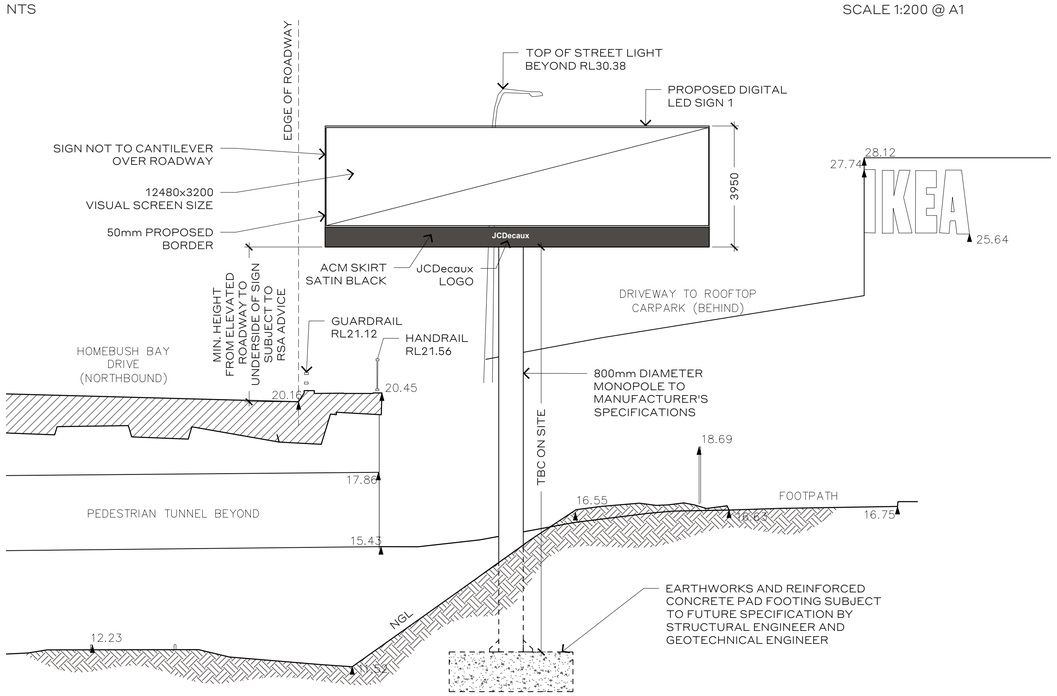
LOT OWNERSHIP INFORMATION

LOT	DP	OWNER (FIRST SCHEDULE)	NOTES
63	908653	THE COMMISSIONER FOR RAILWAYS	
1006	1190977	RAIL CORPORATION NSW	



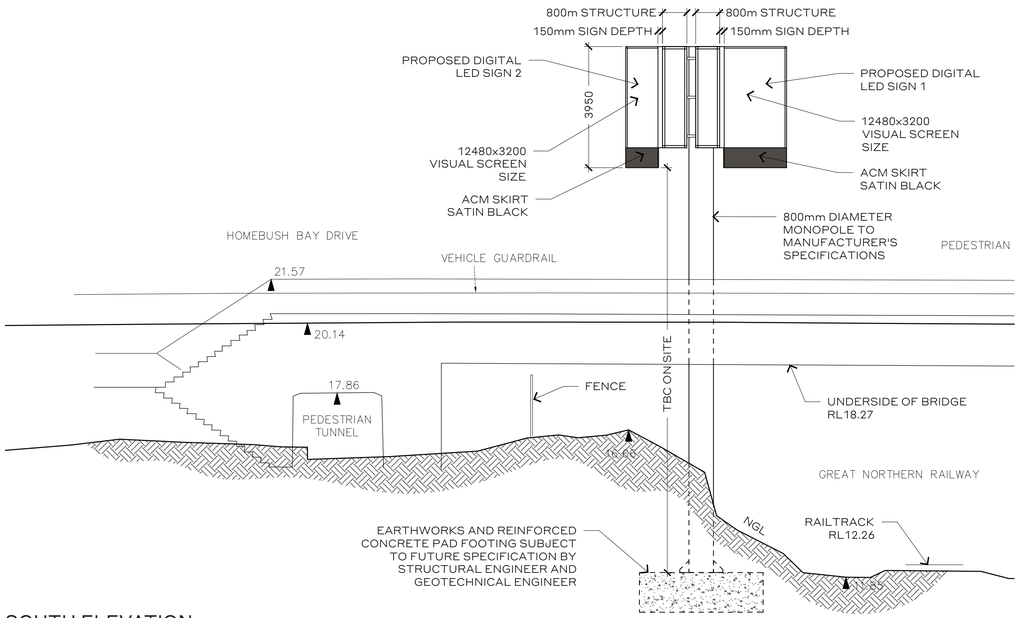
SITE PLAN

SCALE 1:200 @ A1



EAST ELEVATION

SCALE 1:100 @ A1



SOUTH ELEVATION

SCALE 1:100 @ A1

NOT FOR CONSTRUCTION

ETHOS URBAN

Ethos Urban Pty. Ltd.
ABN 13 615 087 931 ACN 615 087 931
www.ethosurban.com
173-185 Sussex Street Sydney NSW 2000
t +61 2 9956 6962

LEGEND / NOTES

- Site boundary
- Photomontage location
- Proposed sign (NTS)

ACM	Aluminium composite material
CL	Centre line
EX	Existing
LIS	Limited in stratum

ISSUE	DATE	REVISION	REVISION BY	APPROVED BY
P1	02.09.20	Work in progress	JB	SM
P2	29.09.20	Draft Issue	PN	SM

DRAFT

PROJECT

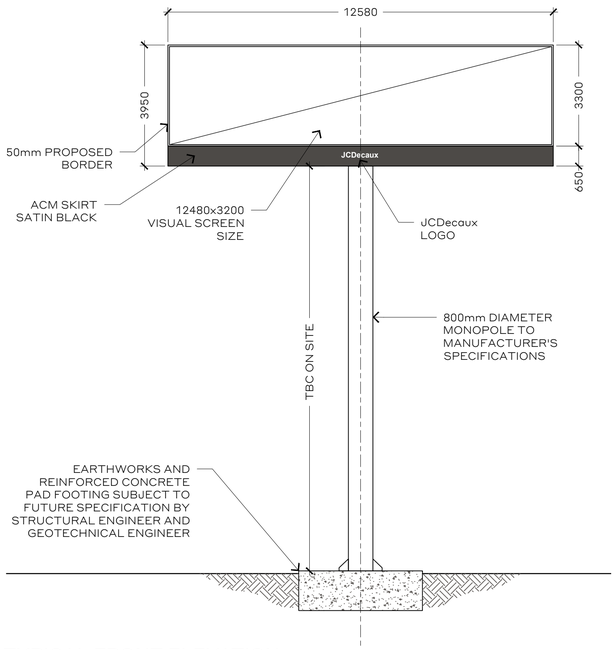
DOOH Development Applications
Prepared for Sydney Trains

SCALE
AS SHOWN @ A1

DRAWING

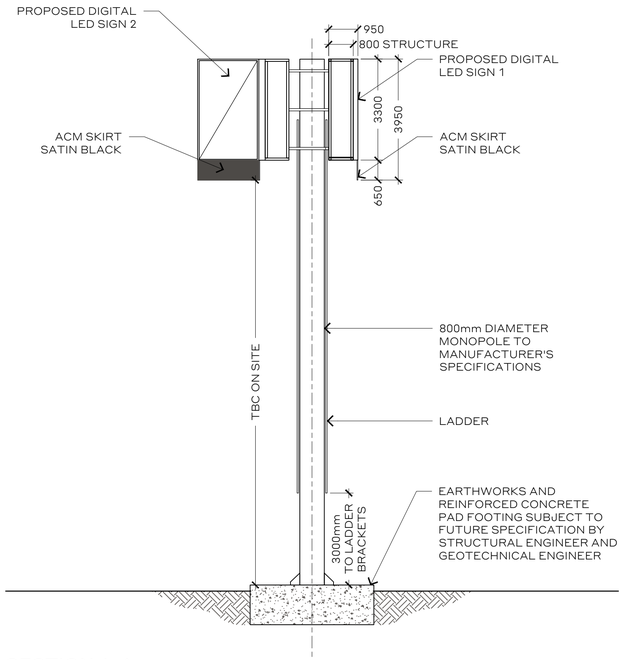
Site Plan & General Arrangement **A-4.1**
Site 4 - Rhodes /P2

JOB NO.	DWG NO.	ISSUE	DATE	DRAWN BY
2200249	A-4.1	P2	29.09.20	PN



TYPICAL FRONT ELEVATION

SCALE 1:100 @ A1



SECTION A-A

SCALE 1:100 @ A1

PHOTOMONTAGE - VIEW 1

View from Homebush Bay Drive looking North West

NOT FOR CONSTRUCTION

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P2	29.09.20	Draft Issue	PN	SM

DRAFT

PROJECT

DOOH Development Applications
Prepared for Sydney Trains

SCALE
AS SHOWN @ A1

DRAWING

Elevation, Section and Photomontage **A-4.2**
Site 4 - Rhodes /P2

JOB NO.	DWG NO.	ISSUE	DATE	DRAWN BY
2200249	A-4.2	P2	29.09.20	PN

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