Beecroft Road, Epping
Digital Signage Safety Assessment

Prepared for:

JCDecaux

27 June 2022

The Transport Planning Partnership

Beecroft Road, Epping

Digital Signage Safety Assessment

Client: JCDecaux

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1 Introduction

1.1 Overview

JCDecaux is seeking approval for the installation of a new LED illuminated digital sign on the north side of the Beecroft Road railway overpass (bridge) facing the westbound travel lanes on Epping Road.

The Transport Planning Partnership (TTPP) has been commissioned by JCDecaux 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 Chapter 3 of *State Environmental Planning Policy (Industry and Employment) 2021* (Industry and Employment SEPP). The Guidelines outline best practice for the planning and design of outdoor advertisements in transport corridors. The Industry and Employment SEPP 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 proposed digital sign and provide recommendations on mitigation measures to alleviate impacts on the surrounding road network. This report sets out the findings of TTPP's safety assessment for the proposed digital sign on the north side of the Beecroft Road bridge in Epping.

The following items have been considered in this report:

- Potential for the sign to obstruct or distract a driver's view of the road, traffic control devices and signalised pedestrian crossings.
- Distance from upstream or downstream intersections or other decision points, such as pedestrian crossings and traffic signals.
- Potential for the sign 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 Consultation with Authorities

Sydney Trains and JCDecaux attended a pre-DA meeting with Transport for NSW (TfNSW) prior to lodging the DA to discuss the proposed digital sign. At the meeting, TfNSW raised no road safety concerns in relation to the proposal.

TfNSW mentioned the future Epping Bridge Project (widening of Epping Road bridge), and as such, acknowledgement of the future TfNSW project has been included in this assessment in Section 2.1.1.

1.4 References

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

- Site inspections of the sign location from a driving viewpoint along Epping Road and on all approaches to the Epping Road, Beecroft Road, Blaxland Road, and Langston Place intersection carried out on Wednesday 26 January 2022 and Monday 4 April 2022.
- 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 Environment Planning Policy (Industry and Employment) 2021.
- Concept design plans of the proposed digital signage dated 12/05/2022.

2 Proposal Description

2.1 Location Details

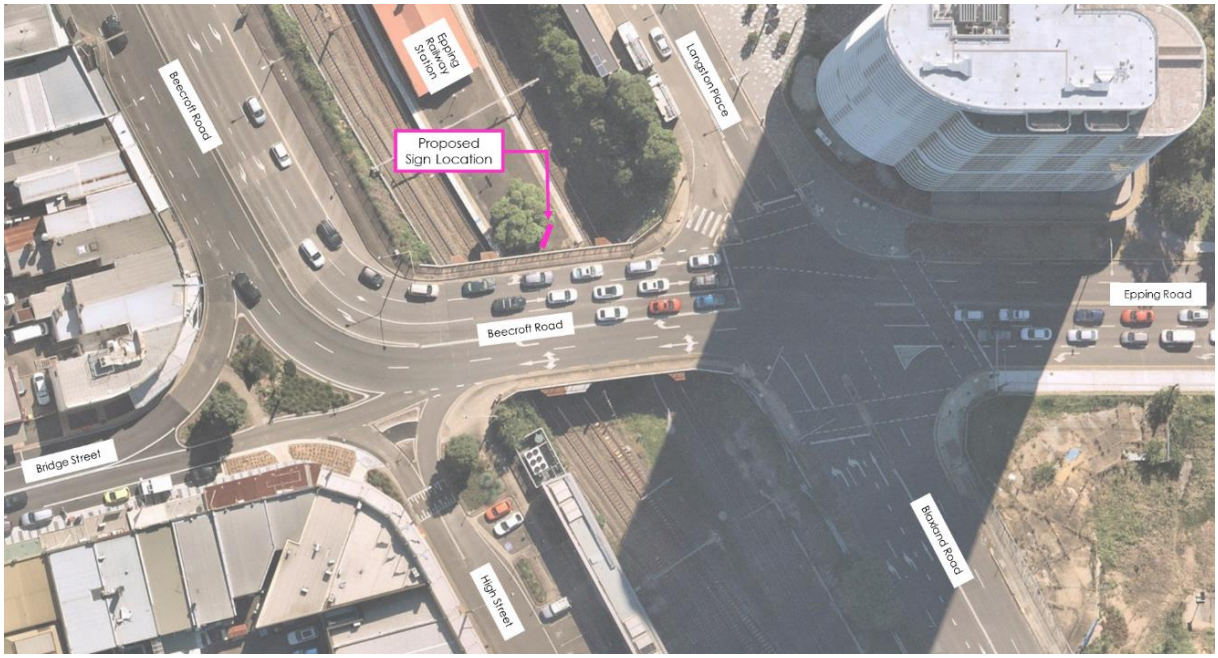
A new digital sign is proposed to be installed on the north side of the Beecroft Road bridge, located west of the intersection of Epping Road, Beecroft Road, Blaxland Road, and Langston Place in Epping.

In the immediate vicinity of the proposed sign, the posted speed limit is 60 km/h on Beecroft Road and Epping Road.

The proposed digital sign would be installed on a column (a monopole-like structure) where the base of the column is fixed on Platform 1-2 of Epping railway station and the digital display would be erected 3.39 m above the road surface level on Beecroft Road bridge. The digital sign would be positioned facing motorists on the Beecroft Road east approach.

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

Figure 2.1: Sign Location



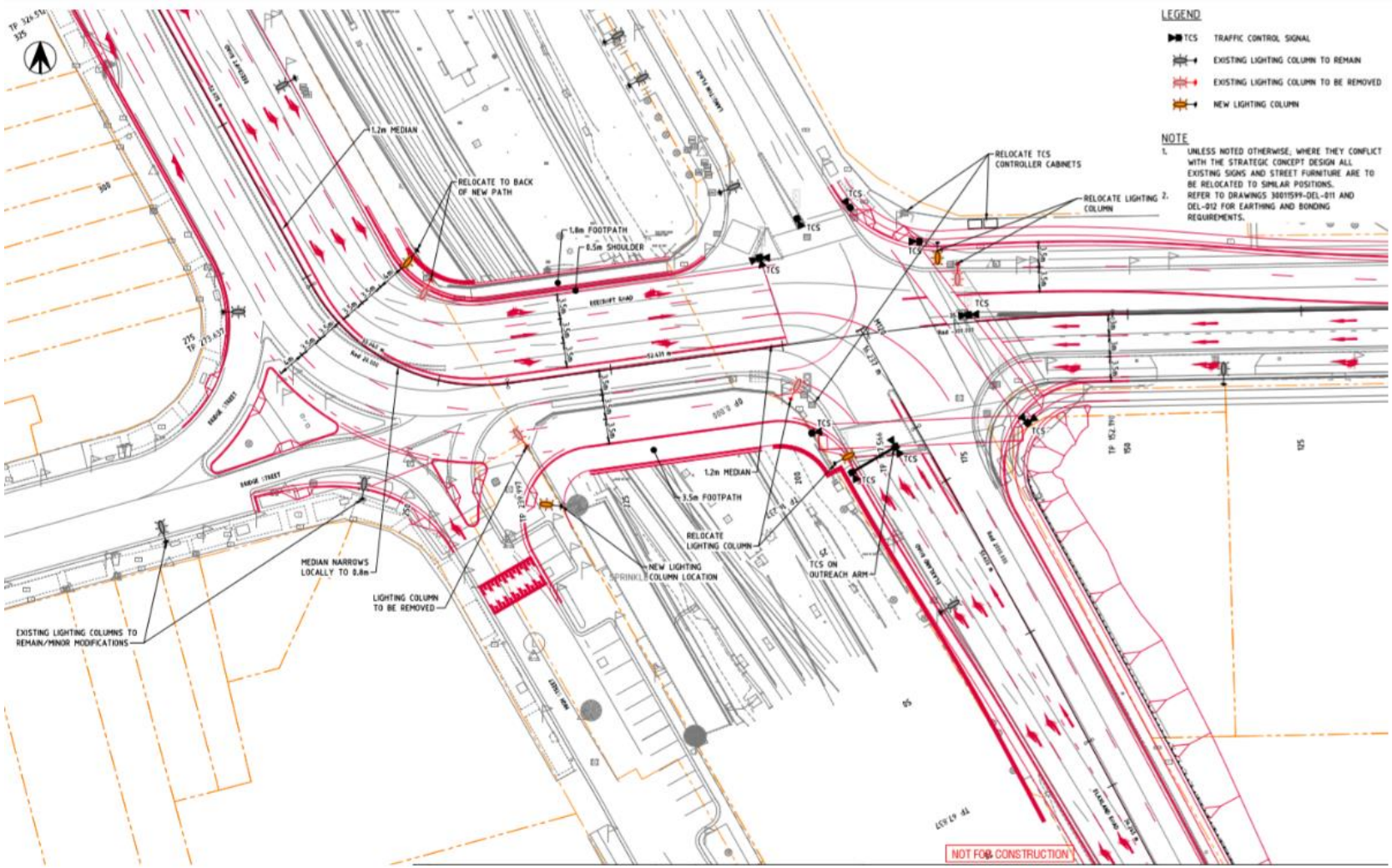
Map Source: Nearmap, aerial imagery dated 03/04/2022

2.1.1 Epping Road Project

Federal and State Government funding was announced on Tuesday 10 May 2022 for the widening and upgrade of the existing Epping Road bridge. The upgrade would facilitate an additional westbound lane and provide increased capacity to meet future traffic growth and support nearby development in the vicinity. The upgrade would also provide a new central median, wider travel lanes, and wider footpath.

Based on a concept plan available online, the widening of Epping Road would occur on the south side of the bridge as shown in Figure 2.2. The proposed digital sign is located directly north of the Beecroft Road bridge, and as such, is not expected to be impacted by the future Epping Road project.

Figure 2.2: Epping Road Project Concept Design



Source: Pulse White Noise Acoustics (PWNA), viewed online on 27/06/2022

2.2 Description of Proposed Signage

As per the Industry and Employment SEPP, the advertising display area is defined as follows:

> *"advertising display area means, subject to subsection (2), the area of an advertisement or advertising structure used for signage, and includes any borders of, or surrounds to, the advertisement or advertising structure, but does not include safety devices, platforms or lighting devices associated with advertisements or advertising structures."*

On the above basis, the advertising display area of the proposed digital sign would be 14.93 m^2 (3.172 m width by 4.708 m height). The sign would be mounted on a "7" shaped stainless steel cladded support with a height 3.35 m. Beneath the support would be a column with a height of approximately 5.65 m from Platform 1-2 at Epping railway station. The visual display area (the screen alone) would be 14.16 m^2 (3.072 m width by 4.608 m height). The general layout of the proposed digital sign is shown by the elevation plans in Figure 2.3 to Figure 2.5. Full scale concept design plans are provided in Appendix A.

The proposed digital sign would be used by JCDecaux to promote its sponsors and third-party advertising. The digital sign would contain text and images.

Figure 2.3: Elevation A Plan – Front of Sign

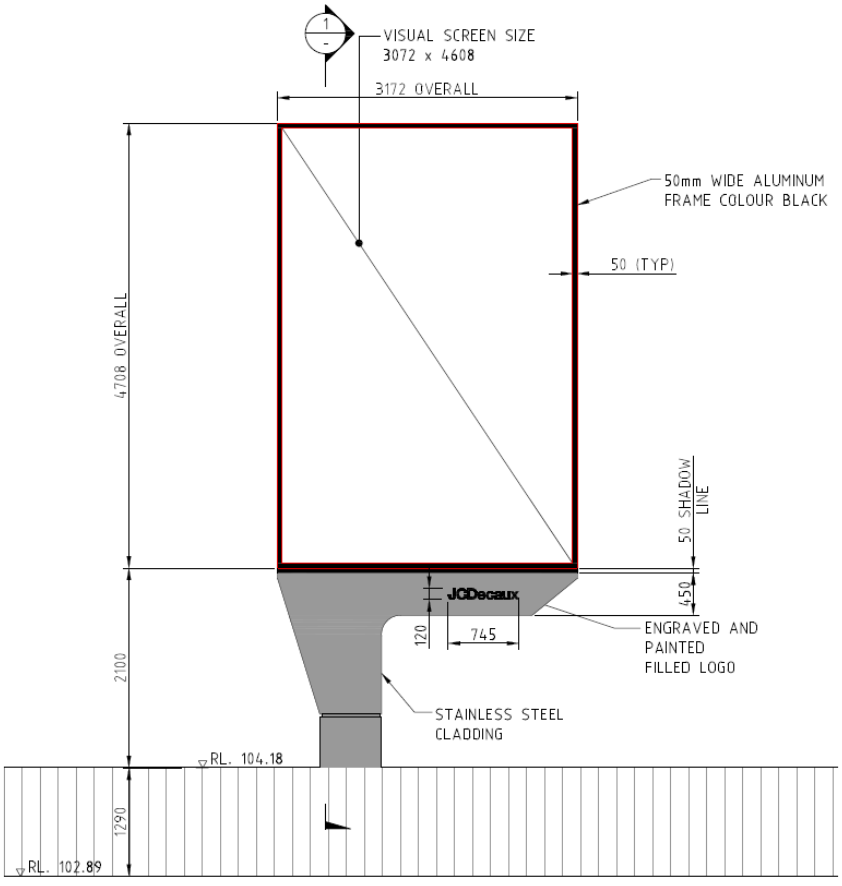


Figure 2.4: Elevation B Plan – Back of Sign

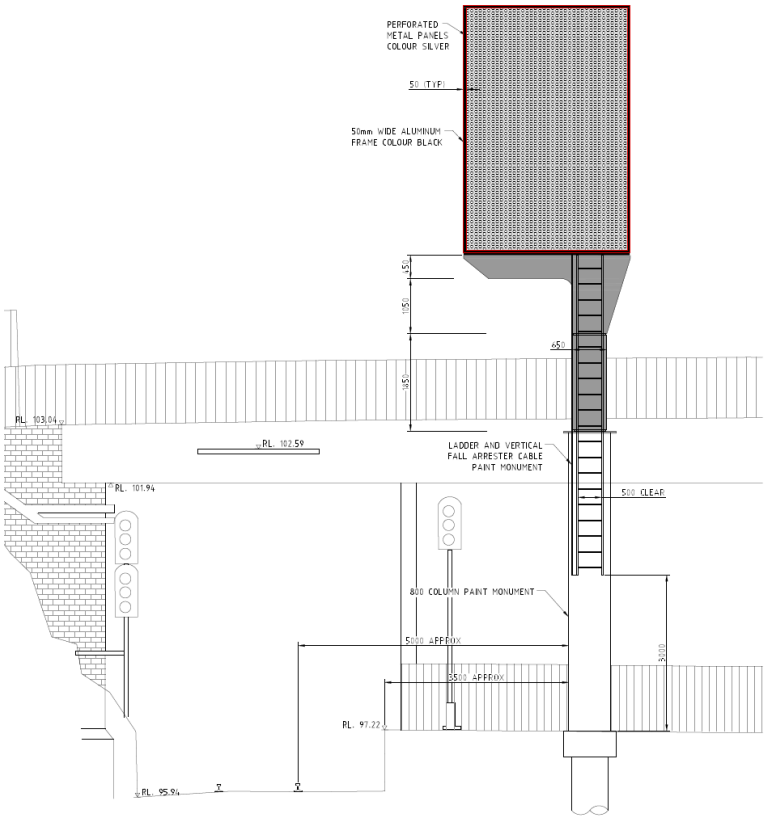
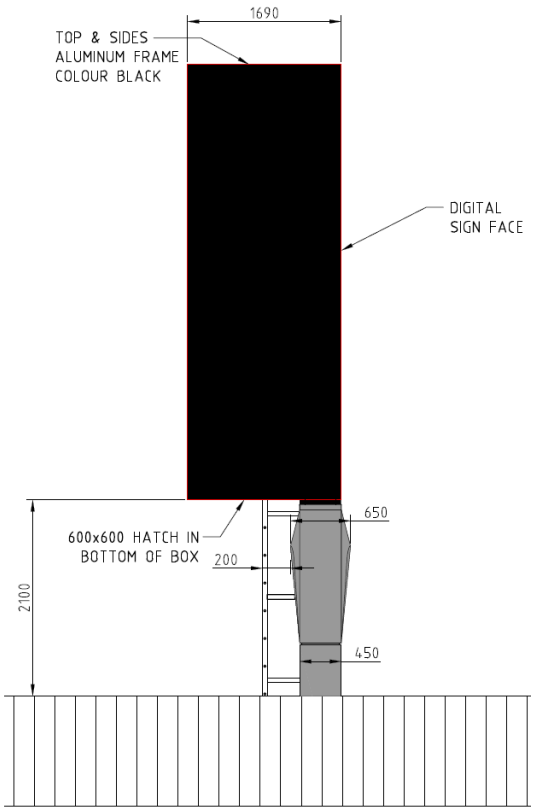


Figure 2.5: Elevation C Plan – Side View

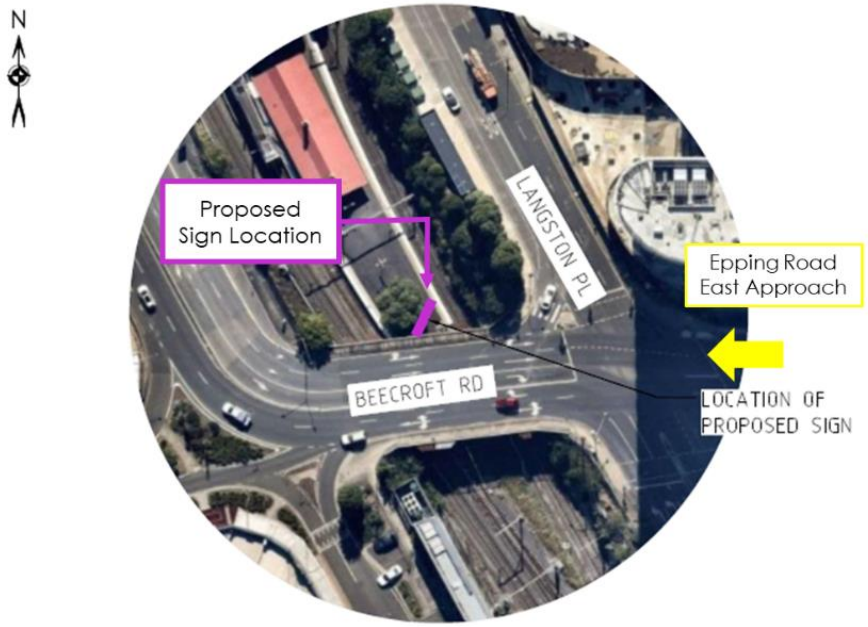


2.3 Signage Exposure

The proposed digital sign and the contents displayed would be visible to motorists on the Epping Road east approach as shown in Figure 2.6.

Site visits were undertaken on Wednesday 26 January 2022 and Monday 4 April 2022 to inspect driver sight distances on approach to the proposed digital sign. A description of the site investigation findings is provided herein.

Figure 2.6: Epping Road East Approach

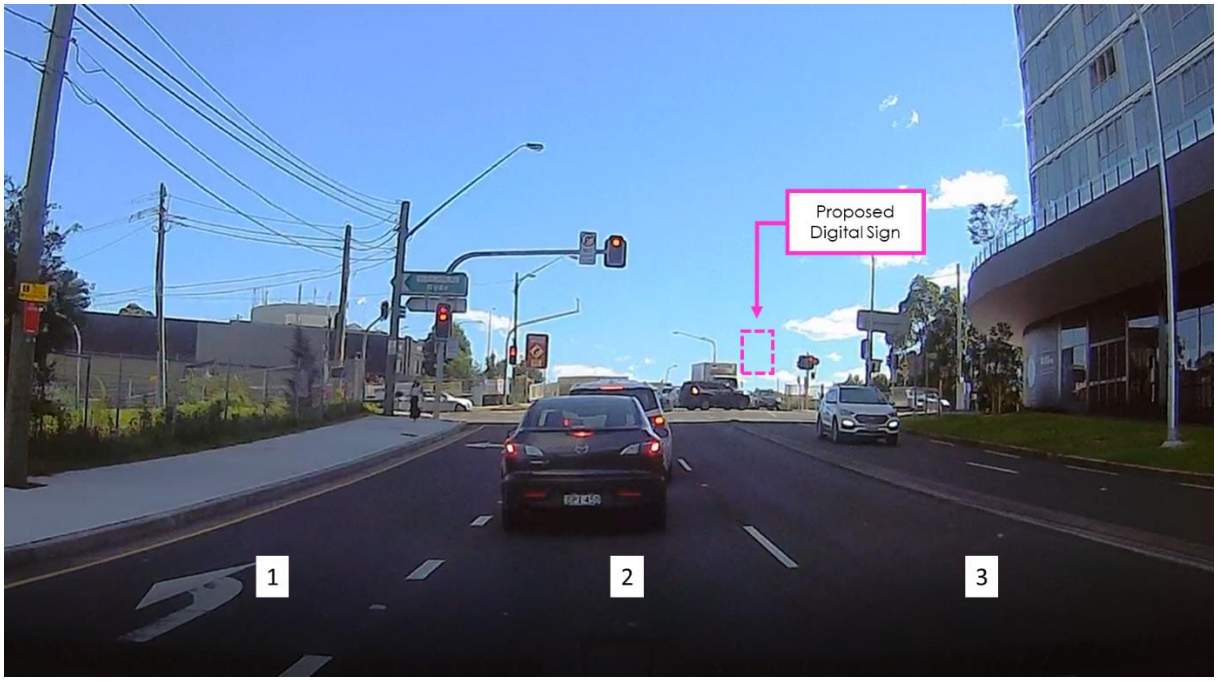


Source: JCDecaux

2.3.1 Epping Road East Approach

The lane configuration on Epping Road east approach is shown in Figure 2.7. Travel lanes are numbered to 1 to 3 from left to right. Lane 1 is a left-turn lane to Blaxland Road and Lanes 2 and 3 are through lanes towards the Beecroft Road bridge.

Figure 2.7: Epping Road East Approach Lane Configuration



Source: Photograph taken by TTPP dated 04/04/2022

The key findings are summarised below:

- The digital sign would be visible to motorists on Epping Road travelling in the westbound direction.
- Treating the observed conditions during the site inspections as typical conditions in the area, the digital sign would likely be visible in travel lanes as follows:
  - In Lane 1 (left-turn lane to Blaxland Road), 150 m from the sign on approach.
  - In Lane 2 (through lane), 150 m from the sign on approach.
  - In Lane 3 (through lane), 150 m from the sign on approach.

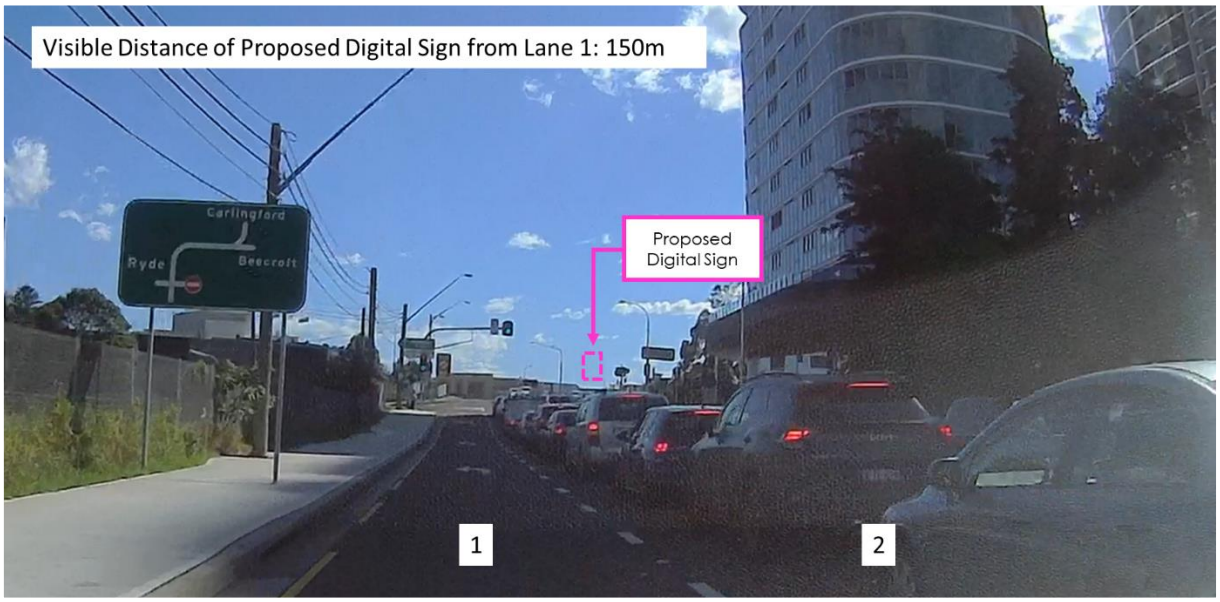
Figure 2.8 illustrates the perspective of the designer's impression of the proposed digital sign.

The likely visible and readable distances in each lane on Epping Road approach to the digital sign are shown in Figure 2.9 to Figure 2.11.

Figure 2.8: Designer's Impression on Epping Road (from the East Approach)

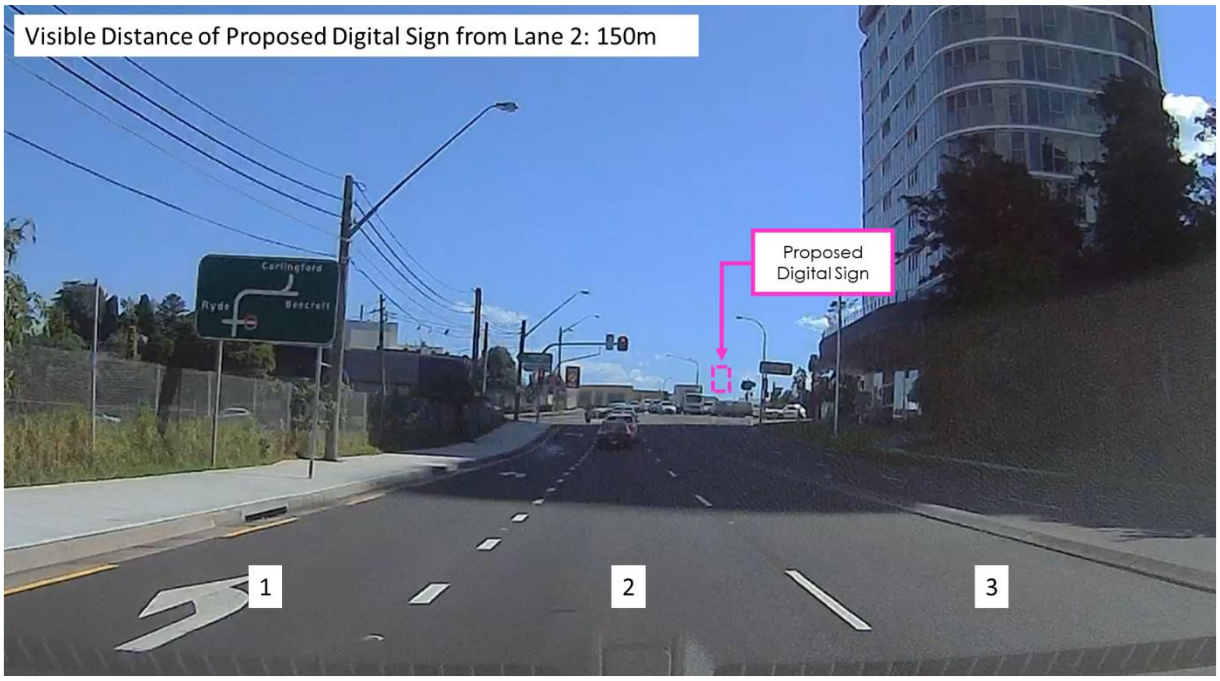
Source: JCDecaux

Figure 2.9: Epping Road East Approach Sign Exposure – Lane 1



Source: Photographs taken by TTPP dated 04/04/2022

Figure 2.10: Epping Road East Approach Sign Exposure – Lane 2



Source: Photographs taken by TTPP dated 04/04/2022

Figure 2.11: Epping Road East Approach Sign Exposure – Lane 3

Source: Photographs taken by TTPP dated 04/04/2022

2.4 Crash History

Historic crash data has been obtained from Transport for NSW (TfNSW) and assessed for incidents along Epping Road within the visible distance of the proposed sign and the intersection of Epping Road, Beecroft Road, Blaxland Road, and Langston Place. Based on site observations, the proposed digital sign would be visible from up to 150 m away.

Crash history data has been assessed on Epping Road east approach towards the proposed digital sign for the most recent five-year period for data collated and published by TfNSW. This period is between 1 January 2016 and 31 December 2020.

In the vicinity of the proposed sign, there was a total of five incidents recorded during this period. Two crashes were recorded on Epping Road east approach within the visible distance on approach towards the sign. These were rear-end collisions which resulted in a moderate injury and vehicle being towed-away.

At the intersection, there were three crashes recorded where the vehicles involved were turning onto Beecroft Road. Two of these incidents involved a vehicle travelling straight on Blaxland Road south approach and a vehicle turning right from Langston Place north approach (towards Beecroft Road). In June 2018, the intersection was upgraded which included the removal of the right-turn movement from Langston Place north approach to Beecroft Road west approach. Hence, such crashes would not occur in the future.

The last incident was a rear-end collision on Blaxland Road south approach while a vehicle was waiting in the left-turn lane (Lane 1). The proposed digital sign would not be visible to motorists in Lane 1 on Blaxland Road as visibility would be obstructed by fencing located along the railway corridor boundary (as shown in Figure 3.1). The proposed digital sign would not exacerbate the likelihood of crashes in such location.

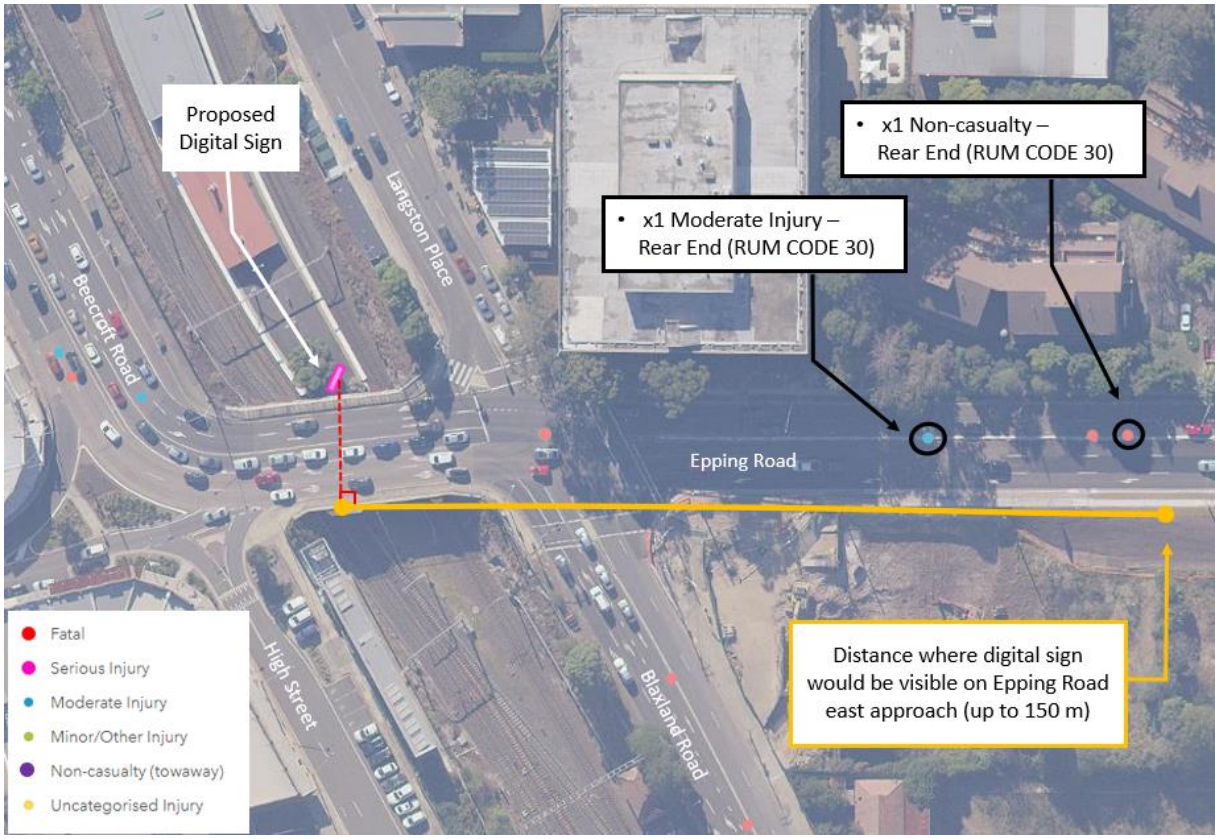
As such, the three incidents recorded at the intersection have been excluded from the historic crash tally in relation to the proposed digital sign.

A summary of crashes in the vicinity of the proposed digital sign is presented in Table 2.1, while the crash location and incident descriptions are illustrated in Figure 2.12.

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)
Within **visible** distance of digital sign on Epping Road (up to 150 m away from proposed digital sign)	Rear End (RUM CODE 30)			1		1
Total		**Nil.**	**Nil.**	**1**	**Nil.**	**1**

Figure 2.12: Crash Locations



Source: Transport for NSW

3 Statutory Requirements

This section of the report assesses the compliance with the safety assessment criteria established in the NSW Guidelines and State Environmental Planning Policy (Industry and Employment) 2021. It requires analysis as to whether the proposal would 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 key safety assessment criteria, a series of detailed criteria are set out in Section 3, Advertisements and Road Safety of the NSW Guidelines.

3.1 Industry and Employment SEPP Schedule 5

Clauses 1 to 7 of the Industry and Employment SEPP – Schedule 5 refer to aspects that are unrelated to road safety, as outlined in Appendix B. However, Clause 8 is related to road safety, and thus, is covered under this signage safety assessment as follows:

(a) Would the proposal reduce the safety for any public road?
(b) Would the proposal reduce the safety for the pedestrians or bicyclists?
(c) Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?

Provision of the digital sign on the north side of the Beecroft Road bridge is unlikely to reduce safety for motorists, pedestrians or cyclists.

Assessment of the proposal in accordance with the Department of Planning's *Transport Corridor Outdoor Advertising and Signage Guidelines* has been undertaken in the following sections below.

3.2 Transport Corridor Outdoor Advertising and Signage Guidelines – Digital Signs Criteria (Section 2 of Guidelines)

Transport Corridor Outdoor Advertising and 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, this criteria should be included as part of the consent conditions for the proposal to ensure future compliance.

Table 3.1: Digital Sign Criteria (Section 2 of Guidelines)

	Criteria, for Signs less than 20 m² Display Area	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 3.3.2.2, a dwell time of 10 seconds would typically be suitable for the proposed digital signage. However, it is recommended to increase the dwell time (e.g. up to 15 seconds) for the digital sign given that it is in close proximity to traffic signals.
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 sign would be classified as Zone 3. 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.

	Criteria, for Signs less than 20 m² Display Area	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 a school zone, and therefore, would not be required to be conditioned as so.
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 would be assessed by RMS as part of their concurrence role.*	Not applicable as sign less than 20 m². Criteria is applicable to signs greater than 20 m².
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.*	Not applicable as sign less than 20 m². Criteria is applicable to signs greater than 20 m².
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.*	Not applicable as sign less than 20 m². Criteria is applicable to signs greater than 20 m².
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.*	Not applicable as sign less than 20 m². Criteria is applicable to signs greater than 20 m².

3.3 Transport Corridor Outdoor Advertising and Signage Guidelines (Section 3 of Guidelines)

3.3.1 Sign Location Criteria

3.3.1.1 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 steel 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? Would 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 digital sign would be installed on a column (a monopole-like structure) where the base of the column is fixed on Platform 1-2 of Epping railway station and the digital display would be erected 3.39 m above the road surface level on Beecroft Road bridge. The edge of the proposed sign would be offset 0.6 m from the edge of the pedestrian footpath on the bridge, and 2.6 m from the edge of the carriageway on Beecroft Road. Hence, the sign would not protrude over the pedestrian footpath and carriageway. The sign would not physically obstruct any vehicle, pedestrian, and cyclist movements.

The concept design for the proposed sign and its positioning on the north side of Beecroft Road are provided in Appendix A.

(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 Austroads Guide to Road Design Part 6 states that a clear zone is the area adjacent to the traffic lane that should be kept free from features that would be potentially hazardous to errant vehicles. The Guide also acknowledges that it may not be possible to physically provide clear zone at every location particularly in well-established urban environments. The proposed digital sign is located within an urban area where there is kerb and guttering which would redirect an errant vehicle. Furthermore, it is a low-speed environment with an advisory speed limit of 25 km/h on approach to this location.

Based on the above, the proposed digital sign is considered to be in an acceptable location.

(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.

As discussed above, the digital sign is located within a well-established urban area where a clear zone has not been provided. Notwithstanding, the proposed digital sign is located within an urban area where there is kerb and guttering which would redirect an errant vehicle. Furthermore, it is a low-speed environment with an advisory speed limit of 25 km/h on approach to this location.

The sign screen display would be laterally offset 2.6 m from the edge of the carriageway and 3.39 m above the road surface level on Beecroft Road.

(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.

The proposed digital sign would not hang over the road or footpath on Beecroft Road.

As part of the detailed design phase, the digital sign would 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 boards when under maximum vertical deflection.

3.3.1.2 Line of Sight

(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 sign would be positioned on the north side of the Beecroft Road bridge and would not extend over the carriageway and adjacent footpath.

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

The proposed digital sign would not obstruct pedestrian or cyclist's view of the surrounding road network.

(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 sign would be located beside the carriageway and elevated above the level of vehicles on the carriageway. There would be clear definition between the proposed digital sign and the surrounding road network which would not provide misleading information on the roadway alignment. This is supported by the designer's impression as shown in Figure 2.8.

(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 guidelines, 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 sign would be located within the motorists' peripheral view when travelling on Epping Road/ Beecroft Road westbound (for which the sign is intended). Motorists would not be required to turn their heads when observing the sign and would be able to view the road and sign simultaneously.

The sign would be angled away from the Blaxland Road south approach, and therefore, the sign display would not be visible to motorists on this approach. Furthermore, visibility of the sign structure would be obscured by fencing located along the railway corridor boundary as shown in Figure 3.1.

The positioning and angle of the sign would not be expected to result in headlight reflection or glare for vehicles on approach to the sign.

Figure 3.1: Motorist's View on Blaxland Road Left Turn Lane 1

Source: Photograph taken by TTPP dated 4/04/2022

3.3.1.3 Proximity to Decision Making Points and Conflict Points

(a) A sign should not be located:

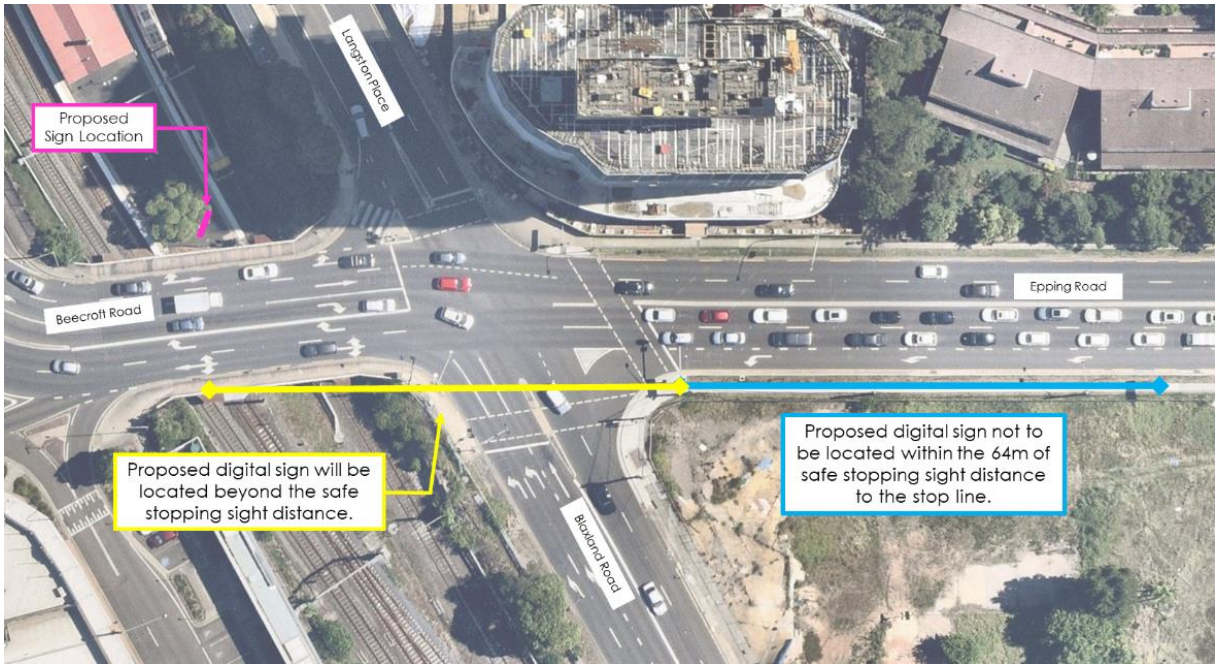
- **i. Less than the safe sight distance from an intersection, merge points, exit ramp, traffic control signal or sharp curves.**
- **ii. Less than the safe stopping sight distance from a marked foot crossing, pedestrian crossing, pedestrian refuge, cycle crossing, cycleway facility or hazard within the road environment.**
- **iii. So that it is visible from the stem of a T-intersection.**

As referenced in the Austroads 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 60 km/h has been used to calculate the safe stopping sight distance which is the signposted speed limit on Epping Road and Beecroft Road. Also, it is the speed which motorists were observed to be driving during the site inspection. According to the Austroads guide, the minimum safe stopping sight distance for a 60km/h speed zone is 64 m.

The proposed digital sign would be located beyond the stop line at the Epping Road east approach. Therefore, the digital sign would not be located within the SSD of the stop line at the Epping Road – Beecroft Road – Blaxland Road – Langston Place intersection, as shown in Figure 3.2.

Figure 3.2: Minimum Safe Stopping Sight Distance



Basemap Source: Nearmap, aerial imagery dated 06/12/2020

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

The proposed digital sign would be positioned beyond the traffic signals at the Epping Road east approach. As such, the proposed digital sign would not obstruct the motorist's view of traffic signal lanterns at any time.

3.3.1.4 Sign Spacing

(a) Sign spacing should limit driver's 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 would be assessed by RMS as part of their concurrence role.

There is an existing digital sign located on the pedestrian overpass above Beecroft Road. However, the existing digital billboard sign would be spaced 180 m away from the proposed digital sign (Figure 3.3). Due to the alignment of Beecroft Road, motorists would not be able to view the proposed digital sign and existing digital sign at the same time.

Figure 3.3: Spacing of Advertising Signs

Source: Nearmap, aerial imagery dated 03/04/2022

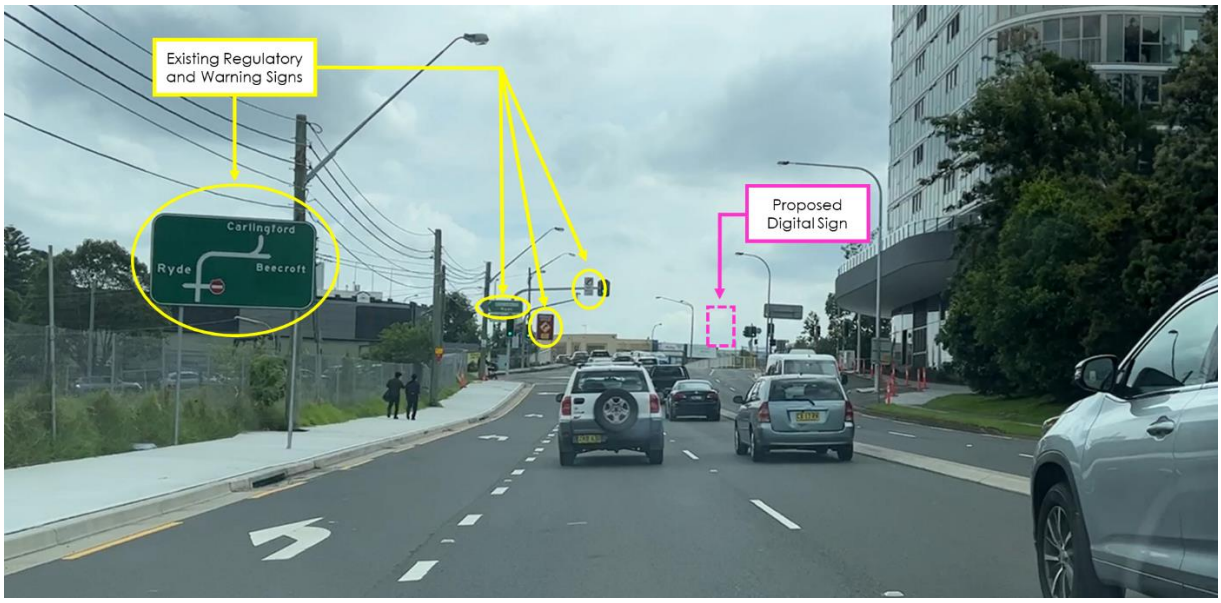
3.3.2 Sign Design and Operation Criteria

3.3.2.1 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.

Regulatory and warning signage are currently present at the Beecroft Road – Epping Road – Blaxland Road – Langston Place intersection facing Epping Road east approach, as shown in Figure 3.4. The proposed digital sign is located on the far side of the road carriageway and thus would not obstruct or reduce the visibility of the regulatory, advisory and warning signs.

Figure 3.4: Regulatory and Warning Signage on Epping Road East Approach



Source: Photograph taken by TTPP dated 26/01/2022

(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, the sign content would not display colours and shapes which could be mistaken for a traffic signal or traffic signs. It is recommended that the content of the proposed sign be reviewed against Table 5 of the Guidelines to avoid any content that may be construed as imitating a traffic control device.

3.3.2.2 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.**

Based on the NSW Guidelines, the minimum dwell time for content displayed on the digital sign would be 10 seconds. Notwithstanding this, increasing the minimum dwell time could be considered a measure to mitigate any preserved safety risk of the proposed sign located in the vicinity of traffic signals. Thus, it is suggested that the dwell time is increased to a minimum of 15 seconds for the sign.

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 sign was proposed to be installed at the intersection of the 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 industry advising 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 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 minimum 10 seconds dwell time prescribed by the Guidelines, is deemed to be an appropriate measure for consideration.

(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.

The proposed digital sign is not visible from any school zones.

(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 sign is proposed to contain text and images, which would be in a static manner without any motion for this dwell time. The transition between content would be almost instantaneous.

3.3.2.3 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 the sign 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.

3.3.2.4 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.
(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 digital sign would not contain interactive technology or technology that enables opt-in direction communication with motorists. The digital sign would not be designed to make motorists anticipate information.

4 Conclusion

JCDecaux is proposing to install a new digital sign on the north side of Beecroft Road in Epping.

The proposal has been assessed in accordance with the following statutory requirements for digital advertising signs:

- Transport Corridor Outdoor Advertising and Signage Guidelines
- State Environmental Planning Policy (Industry and Employment) 2021.

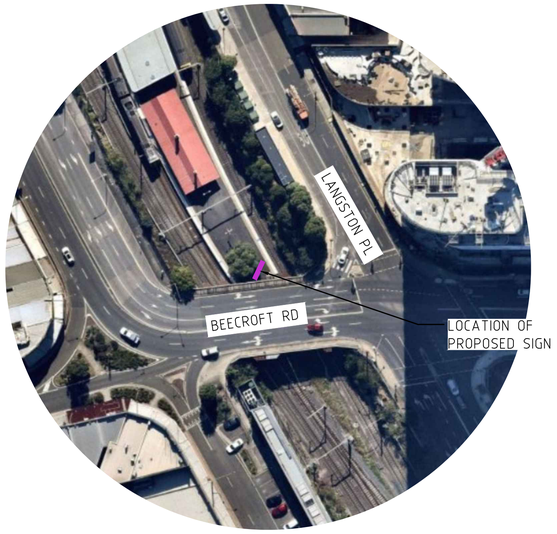
The following findings and conclusions are made from the signage safety assessment:

- The proposed sign on the north side of Beecroft Road bridge would face the Epping Road east approach.
- Two crashes have occurred within the visible distance of the proposed digital sign in the most recent five years.
- The proposed digital sign would not be located within the safe stopping sight distance to the traffic signals, crossings, or warning signage.
- The proposed sign would not obstruct/reduce visibility of any traffic control devices, signage, pedestrians, or cyclists.
- The proposed signage would not give incorrect information on the road alignment.
- Given that the proposed sign is located within close proximity to traffic signals, it is recommended to increase the minimum dwell time from 10 seconds to 15 seconds.

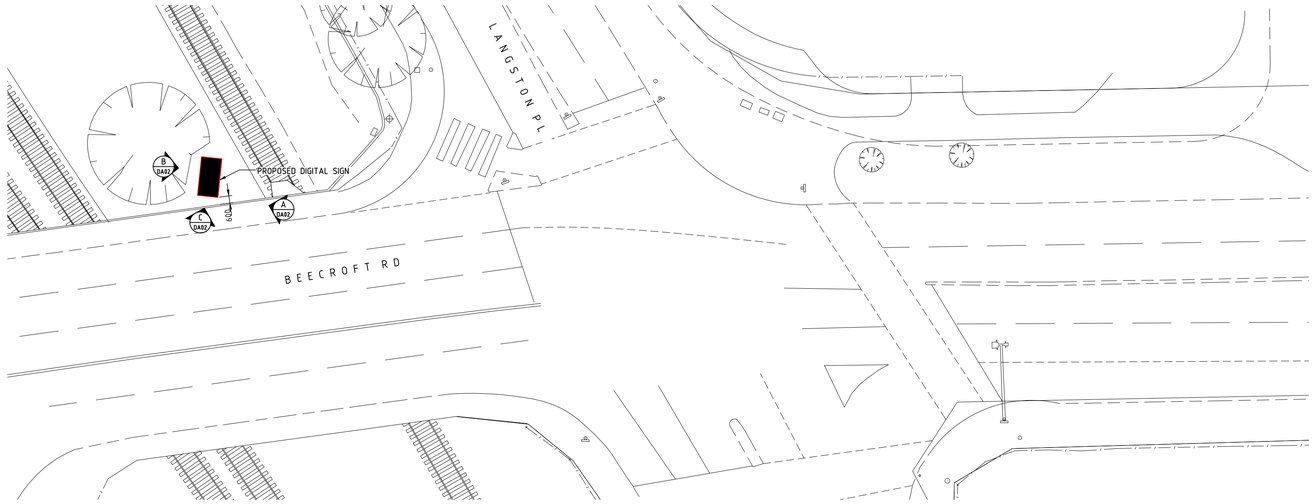
Having consideration for the signage safety assessment and discussions presented within this report, the analysis suggests that the installation of one digital sign on the north side of Beecroft Road would be acceptable.

Appendix A

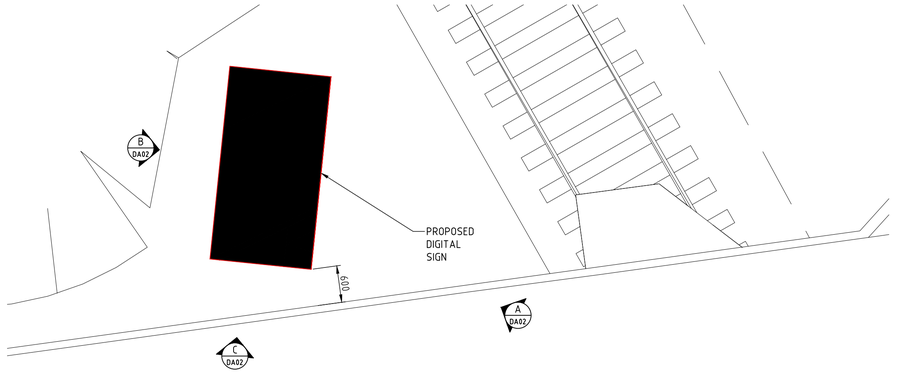
Concept Design Plans



AERIAL PHOTO
NTS



SITE PLAN
SCALE 1:250



PART PLAN
SCALE 1:50

NOT FOR CONSTRUCTION

ISS	DATE	COMMENT
A	11/04/22	ISSUED FOR APPROVAL
B	20/04/22	ISSUED FOR APPROVAL
C	22/04/22	ISSUED FOR APPROVAL
D	29/04/22	ISSUED FOR APPROVAL
E	12/05/22	ISSUED FOR APPROVAL

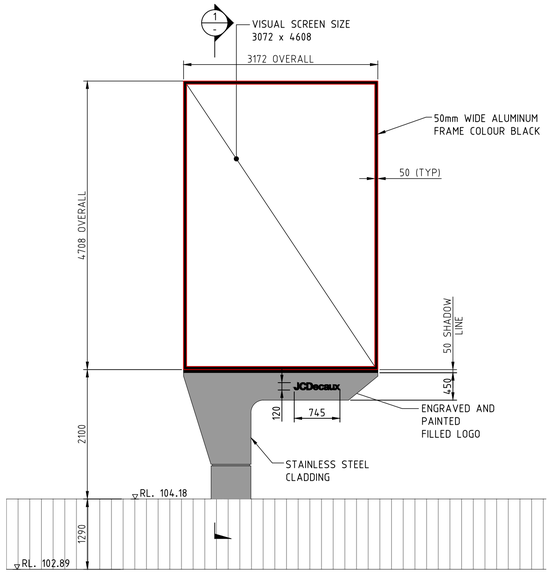
Dennis Bunt Consulting Engineers Pty Ltd
Suite 1, Building 8, 49 Frenchs Forest Road East,
Frenchs Forest, NSW 2086
P.O. Box 652, Forestville, NSW 2087
Ph: 02 9451 3455 Fax: 02 9451 3466
Email: info@dbce.com.au
ABN 23 039 013 724

CLIENT: JCDecaux

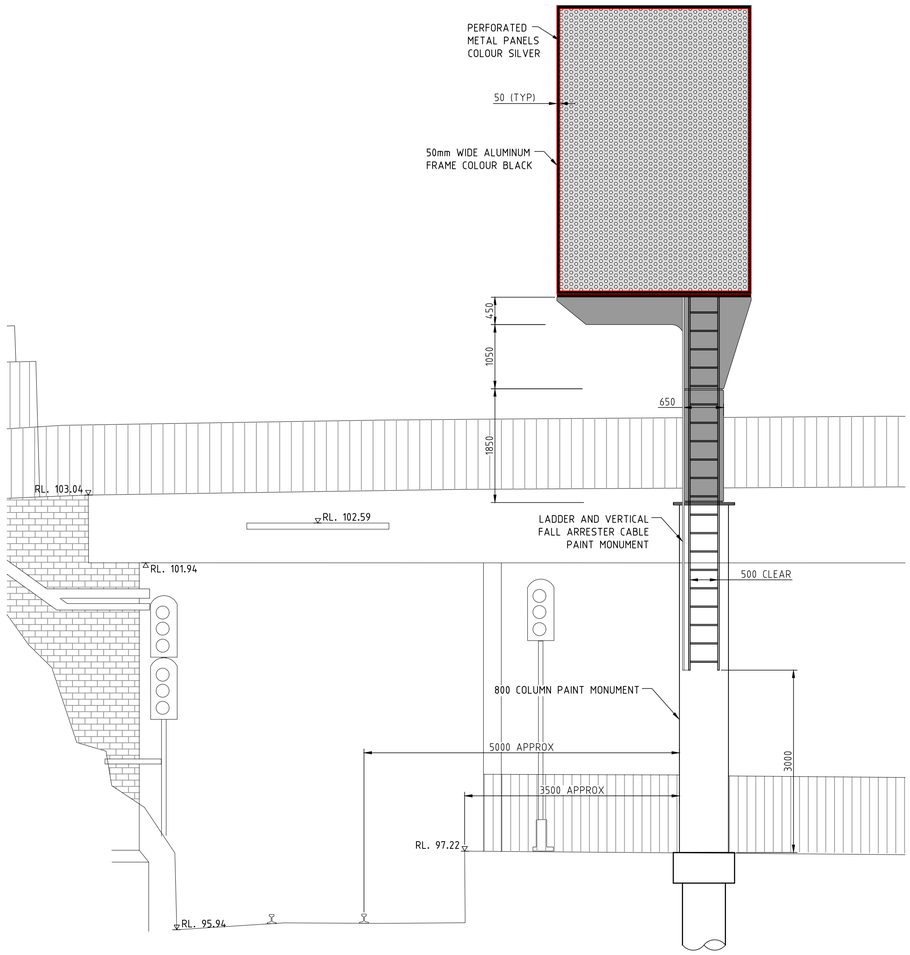
PROJECT: BEECROFT RD, EPPING
PORTRAIT 50

TITLE: PROPOSED DIGITAL SIGN
SITE PLAN

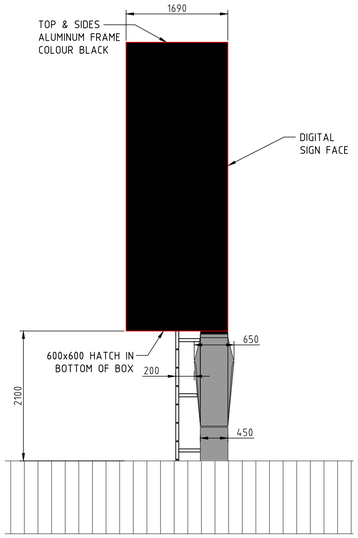
DRAWN A.T	DESIGN J.L	DATE: MAR' 22
JOB NO: 21267		DWG NO: DA01
SCALE @ A1: AS SHOWN		REV: E



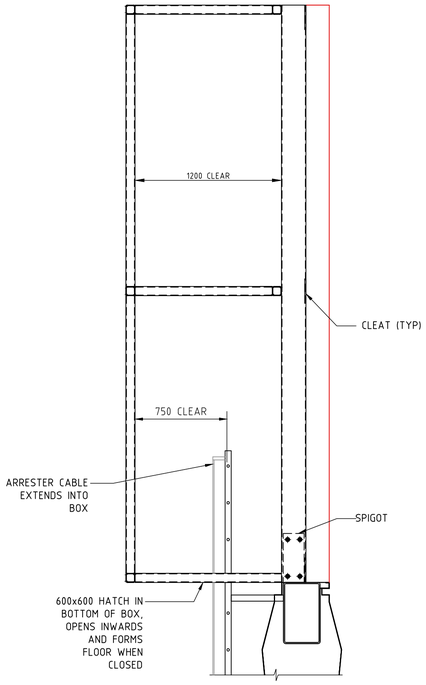
ELEVATION A
SCALE 1:50 DA01



ELEVATION B
SCALE 1:50 DA01



ELEVATION C
SCALE 1:50 DA01



SECTION 1
SCALE 1:25 -

NOT FOR CONSTRUCTION

ISS	DATE	COMMENT
A	12/05/22	ISSUED FOR APPROVAL

DBCE Dennis Bunt Consulting Engineers Pty Ltd
Suite 1, Building 8, 49 Frenchs Forest Road East,
Frenchs Forest, NSW 2086
P.O. Box 652, Forestville, NSW 2087
Ph: 02 9451 3455 Fax: 02 9451 3466
Email: info@dbce.com.au
ABN 23 039 013 724

CLIENT: JCDecaux

PROJECT: BEECROFT RD, EPPING
PORTRAIT 50

TITLE: PROPOSED DIGITAL SIGN
GENERAL ARRANGEMENT

DRAWN	DESIGN	DATE: MAY' 22
A.T	J.L	
JOB NO: 21267		DWG NO: DA02
SCALE @ A1: AS SHOWN		REV: A

Appendix B

State Environmental Planning Policy (Industry and Employment) – Schedule 5

State Environmental Planning Policy (Industry and Employment) 2021

Current version for 1 March 2022 to date (accessed 22 March 2022 at 15:07)

Schedule 5

Schedule 5 Assessment criteria

sections 3.6, 3.11 and 3.15

1 Character of the area

- Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located?
- Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?

2 Special areas

- Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?

3 Views and vistas

- Does the proposal obscure or compromise important views?
- Does the proposal dominate the skyline and reduce the quality of vistas?
- Does the proposal respect the viewing rights of other advertisers?

4 Streetscape, setting or landscape

- Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape?
- Does the proposal contribute to the visual interest of the streetscape, setting or landscape?
- Does the proposal reduce clutter by rationalising and simplifying existing advertising?
- Does the proposal screen unsightliness?
- Does the proposal protrude above buildings, structures or tree canopies in the area or locality?
- Does the proposal require ongoing vegetation management?

5 Site and building

- Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located?
- Does the proposal respect important features of the site or building, or both?
- Does the proposal show innovation and imagination in its relationship to the site or building, or both?

6 Associated devices and logos with advertisements and advertising structures

- Have any safety devices, platforms, lighting devices or logos been designed as an integral part of the signage or structure on which it is to be displayed?

7 Illumination

- Would illumination result in unacceptable glare?
- Would illumination affect safety for pedestrians, vehicles or aircraft?
- Would illumination detract from the amenity of any residence or other form of accommodation?
- Can the intensity of the illumination be adjusted, if necessary?
- Is the illumination subject to a curfew?

8 Safety

- Would the proposal reduce the safety for any public road?
- Would the proposal reduce the safety for pedestrians or bicyclists?
- Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?

The Transport Planning Partnership
Suite 402 Level 4, 22 Atchison Street
St Leonards NSW 2065

P.O. Box 237
St Leonards NSW 1590

02 8437 7800

info@ttpp.net.au

www.ttpp.net.au