JCDECAUX

SEPTEMBER 2019

CHURCH STREET OVERPASS ABOVE BURNS BAY ROAD HUNTERS HILL

SIGNAGE SAFETY ASSESSMENT

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Church Street Overpass above Burns Bay Road Hunters Hill
Signage Safety Assessment

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	NAME	DATE	SIGNATURE
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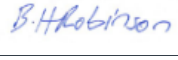
Reviewed by:	Brigette Humphrey-Robinson	12/09/19	
Approved by:	Richard West	12/09/19	

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1 PROJECT BACKGROUND

1.1 OVERVIEW

JCDecaux, on behalf of Roads and Maritime Services engaged WSP to prepare a signage safety assessment for two new digital advertising signs in Hunters Hill. The signs would be located on both sides of the Church Street overpass, facing northbound and southbound traffic travelling on Burns Bay Road as shown in Figure 1.1.

This assessment has been prepared as per the requirements set out in the *Transport Corridor Outdoor Advertising and Signage Guidelines, Assessing development applications under SEPP 64* (NSW Government Department of Planning and Environment, 2017).

Basemap Source: *Nearmap*

Figure 1.1 Signage location and surrounds

1.2 REPORT REFERENCES

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

- an inspection of the site and its surrounds on 18 July 2019
- Transport Corridor Outdoor Advertising and Signage Guidelines – Assessing Development Applications under SEPP 64, NSW Department of Planning, Industry and Environment, 2017
- Crash data provided by Roads and Maritime Services
- Guide to Road Design, Part 3: Geometric Design, Austroads, 2016.

2 PROPOSAL

2.1 EXISTING ROAD ENVIRONMENT

The proposed signs would be located above Burns Bay Road on both sides of the Church Street overpass, approximately 280 metres north of the Tarban Creek Bridge, as shown in Figure 2.1 and Figure 2.2. The road alignment near the bridge is generally straight with a slight curve.

Burns Bay Road is classified as a state road, known as Main Road 166 (MR166). It has a dual carriageway with two traffic lanes in both directions.

Approaching the Church Street overpass, the speed limit in both directions on Burns Bay Road is 70km/h.

In the northbound direction, the Victoria Road on-ramp and Church Street off-ramp are located south of the overpass. The Church Street off-ramp directional sign is located approximately 250 metres south of the overpass. Repeater speed signs are also provided, approximately 150 metres south of the overpass.

In the southbound direction, the Church Street off-ramp starts approximately 350 metres north of the overpass. A large directional sign is also located at this location.

No footpaths are provided along Burns Bay Road near the overpass and no parking is permitted.

Figure 2.1 South approach (northbound) to the Church Street overpass on Burns Bay Road, Hunters Hill

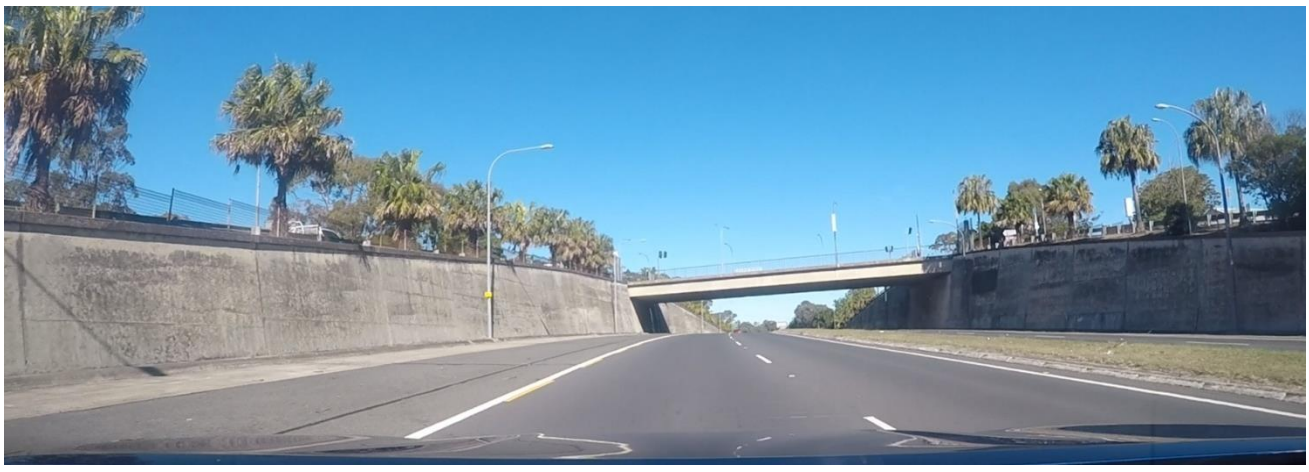

Figure 2.2 North approach (southbound) to the Church Street overpass on Burns Bay Road, Hunters Hill

2.2 PROPOSED SIGNAGE

Both of the proposed signs would be of the Supersite format, with a length of approximately 12 metres and a height of approximately 3 metres, as shown in Figure 2.3 and Figure 2.4.

A 10 second dwell time is proposed for message changes on both signs.

Source: JCDecaux

Figure 2.3 Northbound facing sign on the Church Street overpass on Burns Bay Road, Hunters Hill

Source: JCDecaux

Figure 2.4 Southbound facing sign on the Church Street overpass on Burns Bay Road, Hunters Hill

2.3 PRE-DEVELOPMENT APPLICATION ADVICE

Pre-Development Application (DA) advice was sought from Roads and Maritime who provided general advice on the 21st of June 2019. This report endeavors to document all requirements as specified by Roads and Maritime in this correspondence.

2.4 SIGNAGE EXPOSURE

It is estimated that the proposed signs would be visible and readable to drivers from approximately 250 metres away from the overpass, as shown in Figure 2.5.

A driver's view of the proposed signs from approximately 250 metres away are indicatively shown in Figure 2.6 and Figure 2.7.

Basemap Source: *Nearmap*

Figure 2.5 Signage exposure

Figure 2.6 Indicative view of the proposed northbound facing sign from approximately 250 metres away

Figure 2.7 Indicative view of the proposed southbound facing sign from approximately 250 metres away

2.5 CRASH HISTORY

According to historical crash data provided by Roads and Maritime Services for the five year period of 1 July 2013 to 30 June 2018, one crash was recorded within the northbound readable distance and one crash was recorded within the southbound readable distance to the proposed sign locations.

The single crash that occurred in the northbound direction, occurred approximately 150 metres south of the overpass. It occurred during the AM peak on a weekday in 2015 and involved a motorcycle colliding with a car. It resulted in a moderate injury.

The single crash that occurred in the southbound direction, occurred immediately north of the overpass. It occurred late at night in 2013 and involved a taxi colliding with a parked truck. It is understood that at the time of the collision, temporary road works or a diversion was in place. No casualties were recorded.

The location of the crashes discussed above are indicatively shown in Figure 2.8.

Basemap Source: Nearmap

Figure 2.8 Nearby historical crash data within the exposure distances on Burns Bay Road, Hunters Hill

3 STATUTORY REQUIREMENTS

3.1 ROAD SAFETY ASSESSMENT CRITERIA

This section of the report assesses the compliance of the proposed signage and its design with the road safety assessment criteria set out in the Transport Corridor Outdoor Advertising and Signage Guidelines (Department of Planning and Environment, 2017).

The road safety assessment criteria set out in the guidelines include:

- *Would the proposal reduce the safety for any public road?*
- *Would the proposal reduce the safety for pedestrians and bicyclists?*
- *Would the proposal reduce the safety for pedestrians by obscuring sight lines from public areas?*

In order to assess the proposed signage against the above criteria, the following principles referenced in the guidelines need to be considered.

3.2 SIGN LOCATION AND DESIGN

3.2.1 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?

Both signs are proposed on either side of the existing overpass above the road and not protruding below the overpass. Therefore, the signs could not obstruct the movement of pedestrians or cyclists and could not be hit by vehicles.

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

The proposed signs would be attached to the sides of the existing overpass and would be located outside the clear zone requirements for Burns Bay Road.

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 defection and working width.

The proposed signs would be attached to the sides of the existing overpass and would be located outside the clear zone requirements for Burns Bay Road.

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

This criterion is to be addressed in a separate specialist report prepared by the relevant consultant.

3.2.2 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 signs would be attached to the overpass and therefore the signs could not obstruct a driver's view.

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

The signs would be attached to the overpass and therefore the signs could not obstruct a pedestrian or cyclist's view of the road. Further, pedestrians are not permitted on Burns Bay Road in the vicinity of the Church Street overpass.

(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 signs would be attached to the sides of the overpass above the northbound and southbound carriageways. Therefore, the signs would not indicate a road alignment contrary to the existing roadway.

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

> ***The sign should not be located in such a way that the driver's head is required to turn away from the road and the components of the traffic stream in order to view its display and/or message. All drivers should still be able to see the road when viewing the sign, as well as the main components of the traffic stream in peripheral view.***
>
> ***The sign should be oriented in a manner that does not create headlight reflections in the driver's line of sight. As a guideline, angling a sign five degrees away from right angles to the driver's line of sight can minimise headlight reflections. On a curved road alignment, this should be checked for the distance measured back from the sign that a car would travel in 2.5 seconds at the design speed.***

The signs would be attached to the sides of the overpass above the northbound and southbound carriageways. Driver's would be able to view the signs briefly while still being able to view the traffic stream in their peripheral view.

The elevated signs would not create headlight reflections in the driver's line of sight.

3.2.3 PROXIMITY TO DECISION MAKING POINTS AND CONFLICT POINTS

a. The sign should not be located:

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

Stopping Sight Distance (SSD) is defined in the Guide to Road Design, Part 3: Geometric Design (Austroads, 2016) as:

'the distance to enable a normally alert driver, travelling at the design speed on wet pavement, to perceive, react and brake to a stop before reaching a hazard on the road ahead'

The SSD along Burns Bay Road is derived using a formula prescribed in the Guide to Road Design, Part 3 which uses the posted speed limit of the road, road gradient and other road characteristics. Accordingly, Burns Bay Road's SSD is 103 metres.

No intersections, merge points, pedestrian or cyclist crossings or traffic control devices are located within the 103 metres SSD of the proposed sign location.

The Church Street off-ramps in both directions, start outside the SSD and their respective directional signage are readable prior to the proposed advertising signs being readable. Therefore, the sign wouldn't distract a driver while diverging to these off-ramps.

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 6-9m) or higher.***

The signs would not distract a driver from an intersection or emergency vehicle access point given that the proposed signs would not be located within the SSD requirements of any of these features.

As discussed in Section 2.1, speed zone signs are located approximately 150 metres south of the overpass. However, these are repeater signs and are not associated with a speed change. Therefore, the sign would not be distracting a driver at a critical information /decision making time.

3.2.4 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.

The proposed signs would not be located near any other advertising signs.

3.3 SIGN DESIGN AND OPERATION CRITERIA

3.3.1 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.

The proposed signs would not distract driver's from any directional signs, traffic signals, prescribed traffic control devices, regulatory signs or advisory signs and they would not obscure information relating to the road alignment.

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

- ***i. Could the advertisement be construed as giving instructions to traffic such as 'Stop', 'Halt' or 'Give Way'?***
- ***ii. Does the advertisement imitate a prescribed traffic control device?***
- ***iii. If the sign is in the vicinity of traffic lights, does the advertisement use red, amber or green circles, octagons, crosses or triangles or shapes or patterns that may result in the advertisement being mistaken for a traffic signal?***

This criterion relates to signage content and should be considered once the signs are in operation. The criterion could be included in the Consent Conditions.

Additional criteria for digital signs and moving signs:

a. The image must not be capable of being mistaken:

- ***i. for a rail or traffic sign or signal because it has, e.g. red, amber or green circles, octagons, crosses or triangles or shapes or patterns that may result in the advertisement being mistaken for a traffic signal***
- ***ii. as text providing driving instructions to drivers.***

This criterion relates to signage content and should be considered once the signs are in operation. The criterion could be included in the Consent Conditions.

b. 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).

This criterion relates to signage content and should be considered once the signs are in operation. The criterion could be included in the Consent Conditions.

3.3.2 DWELL TIME AND TRANSITION TIME

Dwell time criteria for digital signs:

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

The proposed digital signs would display static advertisement only, with no motion.

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.

Both signs would be visible to drivers from within an 70km/h speed zone. Therefore, the proposed dwell time of 10 seconds is suitable for both signs.

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 signs would not be located in or near a school zone.

d. Digital signs must not contain animated or video/movie style advertising or messages including live television, satellite, Internet or similar broadcasts.

The proposed digital signs would display static advertisement only.

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

The signs would have an almost instantaneous transition no longer than 0.1 seconds.

3.3.3 ILLUMINATION AND REFLECTANCE

The illumination and reflectance criteria would be addressed in a separate report prepared by a lighting consultant.

4 ADDITIONAL CRITERIA

The guidelines indicate that in addition to the above criteria, the consent authorities must also be satisfied that the proposed digital signs would meet the criteria set out in Table 4.1. With consideration for the above road safety assessment and the details of the proposed signs, we have identified the proposed signs would meet these criteria, where applicable at this stage of the approval and design process.

Table 4.1 Digital signs criteria

#	Criteria	Response
a)	*Each advertisement must be displayed in a completely static manner, without any motion, for the approved dwell time as per criterion (d) below.*	✓
b)	*Message sequencing designed to make a driver anticipate the next message is prohibited across images presented on a single sign and across a series of signs.*	Not applicable at this stage. Should be a condition of consent.
c)	*The image must not be capable of being mistaken:* – *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* – *as text providing driving instructions to drivers.*	Not applicable at this stage. Should be a condition of consent.
d)	*Dwell times for image display must not be less than:* **i** *10 seconds for areas where the speed limit is below 80 km/h* **ii** *25 seconds for areas where the speed limit is 80km/h and over.*	✓
e)	*The transition time between messages must be no longer than 0.1 seconds, and I n the event of image failure, the default image must be a black screen.*	✓
f)	*Luminance levels must comply with the requirements in Section 3 below.*	To be addressed in a separate lighting assessment
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.*	Not applicable at this stage. Should be a condition of consent.
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).*	Not applicable at this stage. Should be a condition of consent.
i)	*Any sign that is within 250m of a classified road and is visible from a school zone must be switched to a fixed display during school zone hours.*	Not applicable for the proposed signs
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.*	✓
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.*	Not applicable. Should be a condition of consent.
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.*	✓

#	Criteria	Response
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.*	No portion of the sign is lower than the vertical clearance of the overpass.
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 at this stage. Should be a condition of consent.
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 at this stage. Should be a condition of consent.

5 CONCLUSION

JCDecaux, on behalf of Roads and Maritime Services, is proposing to install digital LED advertising signs on both sides of the Church Street overpass, facing northbound and southbound traffic travelling on Burns Bay Road in Hunters Hill.

The proposal has been assessed against the current statutory requirements for outdoor advertising as outlined in the *Transport Corridor Outdoor Advertising and Signage Guidelines*, *Assessing development applications under SEPP 64* (NSW Government Department of Planning and Environment, 2017). The proposal is generally consistent with the guidelines and is considered to be suitable for the site.

The following comments are made with regards to the road safety implications of the proposed signs:

- both signs would be readable from approximately 250 metres north or south of the overpass
- the proposed signs would be positioned above the northbound and southbound traffic lanes and therefore drivers would not need to turn away from their direct line-of-sight to view the full extent of the signs
- no intersections, crossing, merge points or critical traffic control devices are located within the Stopping Sight Distance (SSD) requirements for the signs
- a single crash occurred within the readable distance of both signs in the last 5 years
- the surrounding environment presents a low risk environment for the proposed digital advertising signs.

The proposed dwell time of 10 seconds for the signs would be suitable, as drivers would be viewing the signs while travelling 70km/h or less.