

A nighttime photograph of a city street corner. In the foreground, a paved sidewalk with a brick-like pattern leads to a bus stop shelter. The shelter has a large, blank digital display panel. In the background, there are blurred lights from buildings and a passing vehicle, suggesting a busy urban environment.

DEVELOPMENT APPLICATION FOR PROPOSED LARGE FORMAT DIGITAL SIGN

366 ALBANY HIGHWAY, VICTORIA PARK

18 JULY 2018
PREPARED FOR VICINITY CENTRES



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1. INTRODUCTION

This report has been prepared to support an application for development approval for a large format digital sign for third party advertising at Lot 2000 (No.366) Albany Highway, Victoria Park (the subject site).

This application proposes to install a new large format digital sign on top of the Victoria Park Central shopping centre overlooking Shepperton Road. Based on our review of the State and local planning framework, it is understood that a development approval is required to facilitate the above-mentioned signage. To assist the City in its consideration of this application, the following information has been provided:

- Site Details –information on land tenure, surrounding development, traffic and heritage.
- Proposal – a description of the digital sign and summary of the traffic, heritage and lighting considerations.
- Planning Assessment – an assessment of the proposed sign against the City's Town Planning Scheme No. 2 and Draft Planning Policy Manuel – Signs.
- Conclusion – summary of key considerations.

1.1. DEVELOPMENT APPLICATION PROCESS

Based on the Instrument of Delegations 2017/02 Powers of Local Government and Department of Transport (MRS), applications for Large Format Digital Signage made by a non-public authority, requires approval under both the local planning scheme determined by the local authority and the Metropolitan Region Scheme (MRS) determined by the WAPC (dual approval). We understand the application will also require referral to Main Roads WA as the land subject to the application abuts a Primary Regional Road (PRR) being Shepperton Road.

1.2. PRE-LODGEEMENT MEETING

A pre-lodgement meeting was undertaken between Urbis and the Town of Victoria Park on 12 July 2018. Based on discussions with the City it was advised that the application needs to be assessed against the recent Draft Local Planning Policy 'Signs' which has been publicly advertised and is considered a 'seriously entertained proposal'.

An assessment of the current local planning framework and the draft policy has been included in this planning report for completeness.

2. SITE DETAILS

2.1. LOCATION

The subject site is located at Lot 2000 (No. 366) Albany Highway, Victoria Park. The site is currently occupied by the Victoria Park Central shopping centre. The shopping centre is a single storey building with basement carparking. The shopping centre has frontage to Albany Highway, Duncan Street and Shepperton Road.

The digital sign is proposed along the Shepperton Road frontage and attached to the existing plant equipment screening. The signage will be visible to vehicles and pedestrians travelling south-east along Shepperton Road and will not be visible from any other surrounding areas.

Opposite the shopping centre on the northern side of Shepperton Road is Ursula Frayne Catholic College. The nearest residential dwelling with potential view lines to the sign is over 200m to the north-west on Harper Street.

2.2. CONTEXT

The subject site is located approximately 4.5km east of the Perth CBD. The site is situated between two Primary Regional Roads (Shepperton Road and Albany Highway), with Albany Highway providing a variety of commercial and retail shops including cafes and restaurants. Immediately to the north of the site across Shepperton Road is Ursula Frayne Catholic College.

Further north is a mix of residential and some scattered commercial uses. To the south, east and west of the site is a mix of retail and commercial uses lining Albany Highway. An aerial photograph of the subject site has been provided in **Figure 1**.

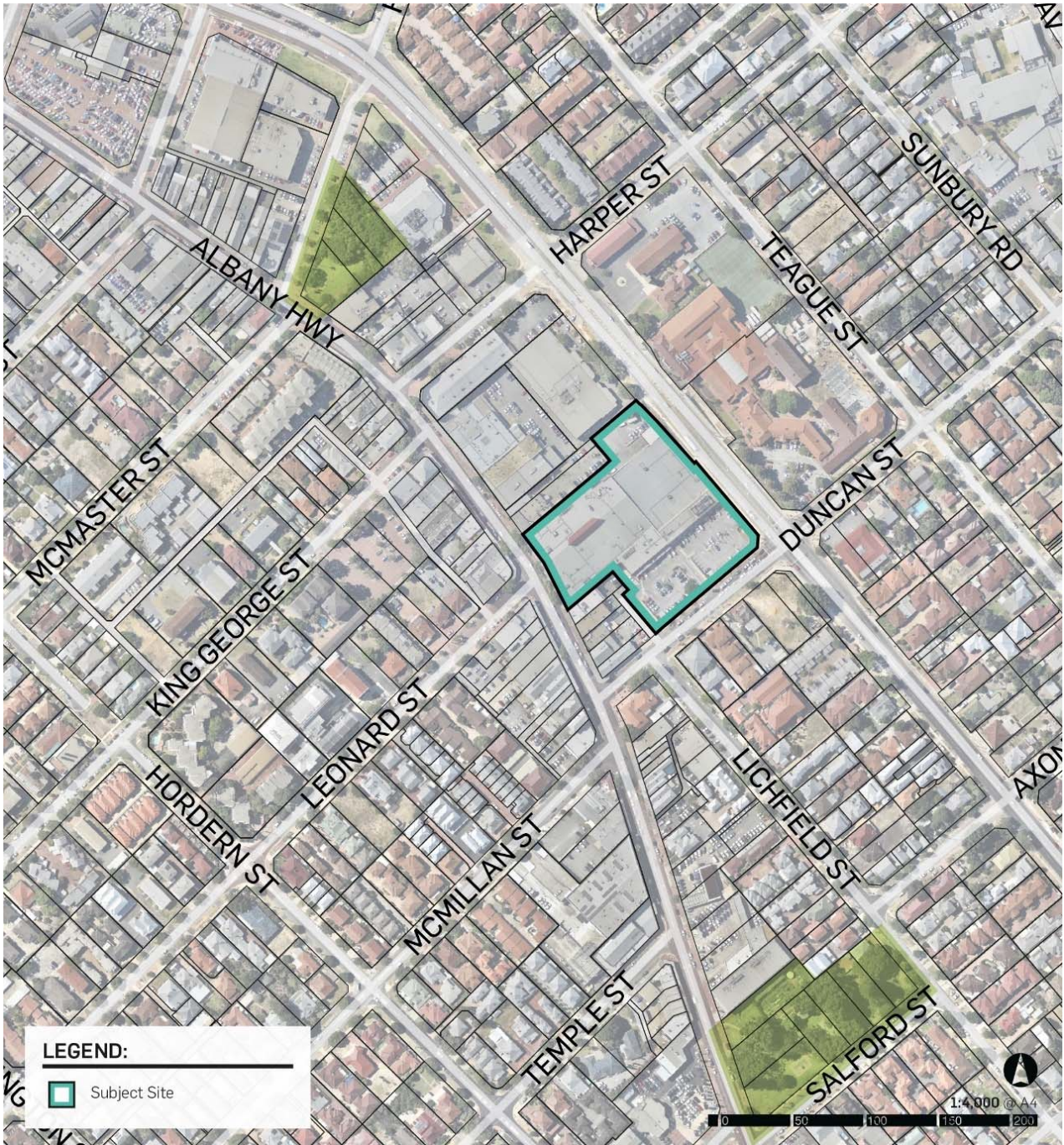
2.3. SITE PARTICULARS

Site particulars including lot details and cadastre has been summarised in **Table 1**.

Table 1 – Lot Details

Lot	Plan	Vol/Folio	Registered Proprietor	Encumbrances
2000	38478	2571/800	Vicinity Custodian Pty Ltd	Refer to Certificate of Title at Appendix A .

Figure 1 – Aerial Photograph



Source: Urbis 2018

3. PROPOSAL

This application proposes to install a new large format digital sign for third party advertising. The proposed sign will be located on the northern side of the existing rooftop plant to the shopping centre. In summary, the proposed sign comprises of the following key elements:

- Total dimensions of 12m (W) x 4m (H) x 1.1m deep
- 48sq.m digital screen
- Illumination levels of 300cd/m2 at night and 6,000 cd/m2 during day
- The contents of the proposed sign will have a dwell time of 30 seconds.

A series of signage plans and specifications have been submitted with this application, which identify the function and location of the proposed signage (refer **Appendix B**). An indicative photo montage is provided in **Figure 2**.

Figure 2 – Indicative Proposed Signage



3.1. DIGITAL SIGNAGE OVERVIEW

Digital signage is an emerging technology that is being implemented worldwide. It is a fast-growing industry providing outdoor advertising across urban and retail environments, from large format digital billboards to smaller scale drive-through signage. There are numerous benefits of digital signs over traditional signage measures, including:

- The signs can be changed electronically and remotely, reducing occupational safety and health issues, which are associated with the physical changeover between the advertising campaigns.
- The signs result in long term environmental benefits when compared to standard signs, given that they do not require the use of vinyl skins, thus reducing the carbon footprint of the sign.
- Digital signs are directly aligned to future e-commerce and economic growth consistent with other forms of digital media and many of the strategic growth objectives of government and private industry across Australia and including Western Australia.

3.2. SIGNAGE CONTENTS

The contents of the proposed sign will have a dwell time of 30 seconds with a refresh rate not exceeding 0.1 seconds compliant with Main Roads guidelines. Vicinity Centres will manage the content of the sign through the following mechanisms:

- Advertising Standards Bureau (ASB)
- Australian Association of National Advertisers (ANNA)
- Outdoor Media Association (OMA)

The regulation of advertising content in Australia is managed by the ASB, who administers the AANA Code of Ethics and various other Codes. The AANA, together with the ASB, represent two halves of Australia's gold standard system of self-regulation. The independent Advertising Standards Board adjudicates complaints under the codes.

Vicinity Centres will follow these guidelines and codes for advertising content and standards across all media. In this regard, the guidelines and codes of conduct provided by these national industry bodies are considered sufficient to manage the content of the sign and provide an appropriate avenue for addressing any potential complaints.

3.3. ROAD SAFETY ASSESSMENT

A Road Safety Assessment has been prepared by Cardno (refer **Appendix C**). The assessment examined the proposed sign against the relevant provisions of the following documents:

- Main Roads' *Conditions for Advertising Signs beyond State Road Reserves policy*.

The assessment concluded that the proposed signage will generally be compliant with the requirements set out within the Main Roads WA policy. However, it was noted that a minor portion of the sign encroaches on the 'Device Restriction Area – Outside Road Reserve', however it is considered that the encroachment should not result in rejection of the proposed sign given the minor nature of the impact. Overall it is considered that the proposed sign is 'low-risk' in nature.

In addition, a minor variation from the required 40 second dwell time, to 30 seconds is proposed. The effect of digital sign dwell times on road safety is not well understood and there is limited evidence-based policy on this matter. Before-and-after studies are still being undertaken by various road authorities however, these are yet to establish definitive links between lower dwell times and reductions in road safety.

For example, the Australia Road Research Board (ARRB) undertook a study of the Kwinana Freeway digital sign at Bull Creek Train Station to analyse differences in driver's behaviour at different dwell times of 25, 30, 40, and 60 seconds. The study used vehicle headways and lateral control (lane drift) as metrics on which to measure changes in driver behaviour. ARRB concluded that the results of the study "*provide no evidence that the LFDS on the Bull Creek Train Station's PTA Bridge has any practically significant negative impact on headway or lateral control even at the shortest dwell time.*"

Based on the available evidence, it is expected that the proposed 30 second dwell time is unlikely to have any noticeable impact on road safety in comparison to the 40 second requirement, and therefore a relaxation of this requirement is acceptable.

In addition, the refresh rate (the duration of transition between the full display of one message and the full display of the next message) will not exceed 0.1 seconds which is compliant with MRWA guidelines.

3.4. LIGHTING ASSESSMENT

A Lighting Impact Assessment has been prepared by Electro Light (refer **Appendix D**). The assessment examined the proposed sign against the relevant provisions of the following documents:

- Western Australian Main Roads 'Policy and Application Guidelines for Advertising Signs'.
- Australian Standards 4282 – 1997 Control of the Obtrusive Effects of Outdoor Lighting.

The Lighting Assessment recommends that the sign shall initially operate to half the recommended maximum luminance, with the level of luminance gradually increasing over time.

The assessment demonstrates that the proposed level of illumination is compliant with the requirements of the above-mentioned documents. In complying with these requirements, the proposed signage will not result in unacceptable glare nor will it adversely impact the safety of pedestrians, residents or vehicular traffic. The proposed signage will also not cause any reduction in visual amenity to nearby residences or accommodation.

4. PLANNING ASSESSMENT

4.1. STATE PLANNING FRAMEWORK

The proposed digital sign is located on land zoned under the Town of Victoria Park Local Planning Scheme No. 1 (LPS1) and directly abutting a Primary Regional Road (PRR) under the Metropolitan Region Scheme (MRS) (Refer to **Figure 3**).

In accordance with the *Planning and Development Act 2005 Instrument of Delegation DEL 2017/02 Powers of Local Governments and Department of Transport*, the proposed sign is categorised as 'Large Format Digital Signage' which means –

“an electronic billboard whether freestanding or attached to another structure with a display area of greater than 13m².”

Based on the nature of the signage location, it is understood that application will be referred to Main Roads WA for comment and also to the WA Planning Commission for determination.

Figure 3 – MRS Zoning Map



Source: WAPC 2018

4.2. LOCAL PLANNING FRAMEWORK

An assessment of the following local planning instruments has been undertaken:

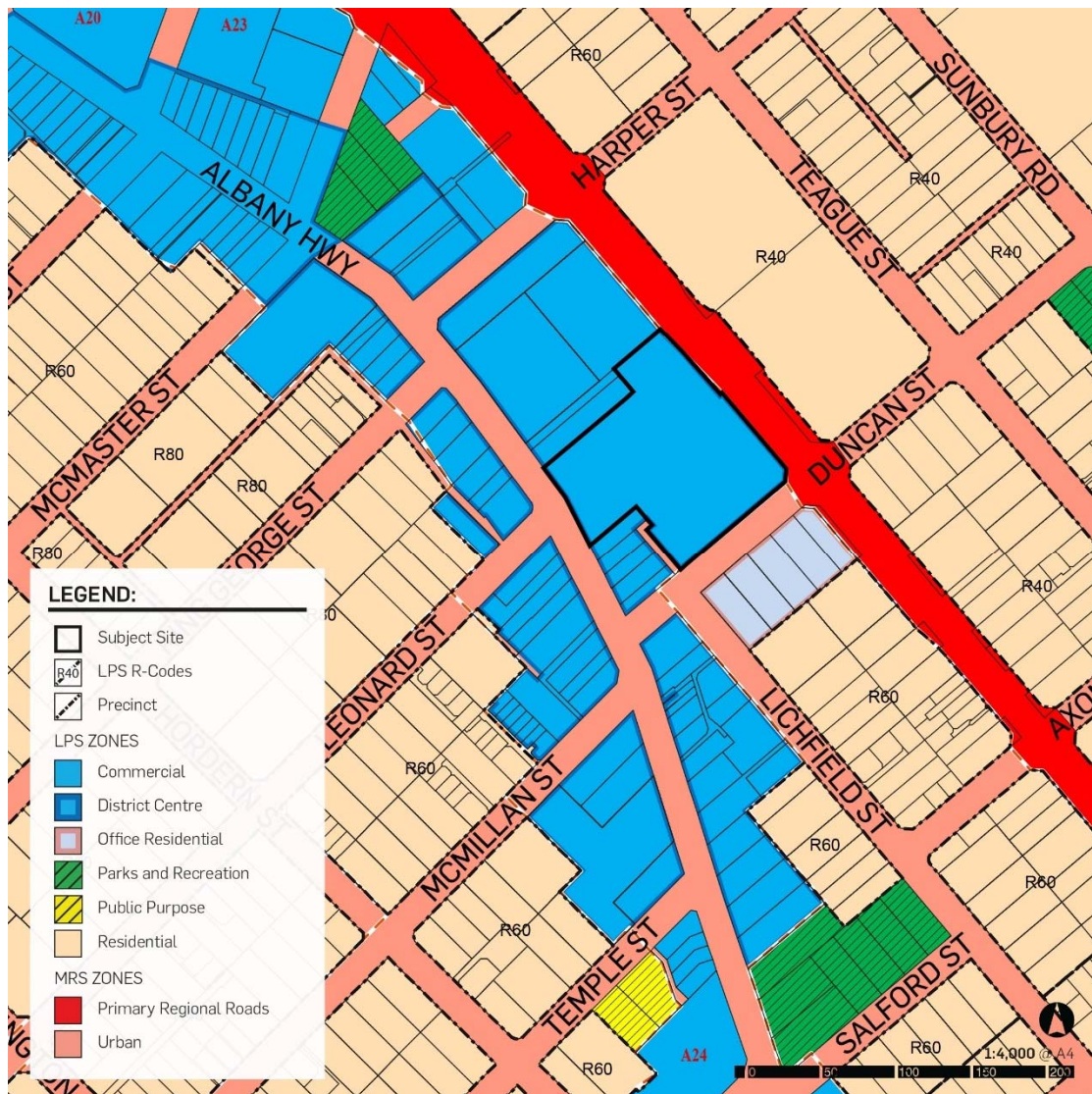
- Town of Victoria Park Local Planning Scheme No. 1
- Town of Victoria Park Local Planning Scheme No.1 – Policy Manual
- Draft Local Planning Policy ‘Signs’ (May 2018)
- Signs Local Law 2006

It is noted that large format digital signage is not defined within the local planning framework.

4.2.1. Town of Victoria Park Local Planning Scheme No. 1

The subject site is zoned ‘District Centre’ under the Town of Victoria Park Local Planning Scheme No. 1 (LPS1). An extract of the subject’s site’s zoning has been provided in **Figure 4**. The site is also located within the ‘P11 Albany Highway Precinct’, within the ‘Victoria Park Precinct’ as part of the District Centre. The intent of this precinct is to retain its strong shopping character, accommodating a wide range of activities concentrated at pedestrian level.

Figure 4 – Zoning Map



Source: WAPC 2018

In accordance with the LPS1, development applications involving an ‘advertisement’ are to be determined having regard to Clause 30A provisions. An assessment against Clause 30A is in section 4.2.3 as the provision are now contained also within the draft Local Planning Policy ‘Signs’.

In accordance with Schedule D of LPS1, signs that require development approval are outlined in Part 6 of the Town of Victoria Park Signs Local Law 2006.

4.2.2. Town of Victoria Park Policy Manual

Clause 4.5.2 of the Town’s Policy Manual provides specific guidance in relation to roof signs. An assessment is provided below.

Table 2 – Policy Manual Assessment

Provision	Response	Compliance
<p>4.5.2. POLICY</p> <p>a) The general policy in respect of the erection of signs, the construction of new signs or the alteration to the dimensions of existing roof signs is as follows:</p> <p>(i). no roof signs should be permitted to be erected on buildings except where such signs may be seen to be designed as an integral part of the design of the building and are for the purpose of identification of the building, its ownership or the major activities carried on within it;</p>	<p>Whilst the sign is technically a ‘roof sign’, the sign does not protrude above the building as a standalone signage element. The location of the proposed sign is on the façade of the existing rooftop plant room which will transform a blank, unattractive structure on the existing building into a vibrant digital sign increasing the element of interest and activation to the area.</p> <p>Whilst the sign will be used for third party advertising, the content of the sign can be readily changed electronically and remotely in response to a request to display emergency information or in the event of a complaint due to content. This is considered highly beneficial and an advantage over traditional static advertising signs.</p> <p>Due to the topography and site level difference between Shepperton Road and Victoria Park Central, the main building sits well below the street level and views for passing vehicles and pedestrians is to the blank rooftop and plant equipment which provides an opportunity for improvement.</p> <p>All advertising standards will be adhered to. This includes compliance with the national standards and codes of content by Advertising Standards Bureau, Australian Association of National Advertisers and the Outdoor Media Association which will manage content.</p>	<p>Minor variation requested</p>

Provision	Response	Compliance
	It's expected that conditions relating to text size and signage content may form a part of a condition of approval.	
ii. pending the formation of more detailed criteria, roof signs other than those identified in (i) above, should only be permitted where it can be demonstrated that having regard to the character of the area in which they are to be situated, they would not adversely affect its amenities or those of other areas;	<p>The sign will provide vibrancy in an area that has limited to no night time amenity. The digital nature of the sign will create a visual interest and enhance the vibrancy of the area.</p> <p>The subject site's building façade will be enhanced by the proposed in terms of stimulating the built form through colour, lighting and tasteful advertising campaigns.</p> <p>The nature of signage is expected as part of the urban context and fits appropriately within the built environment characterised by high levels of pedestrian and vehicle movements.</p>	✓
iii. in accordance with the Street Frontage Design Guidelines - District Centres and Commercial Areas along Albany Highway roof signs are generally not acceptable along Albany Highway; and	Not applicable. The sign is located along the Shepperton Road frontage.	✓
iv. all roof signs are subject to an application for planning approval under the requirements of the Town of Victoria Park Town Planning Scheme No 1.	Noted. This application satisfies this requirement.	✓


4.2.3. Draft Local Planning Policy 'Signs' (May 2018)

In accordance with draft LPP 'Signs' the proposal is classified as a 'Roof Sign' and 'Third Party Signage'. An assessment against the relevant provisions of the draft LPP is provided in **Table 4**.

Table 3 – Draft LPP 'Signs' Assessment

Provision	Response	Compliance
Objectives		
<p>a) To ensure that the display of signage does not adversely impact upon the amenity of the streetscape or surrounding area;</p> <p>b) To strike a balance between the reasonable identification of businesses and the need to ensure that advertising signs are complementary to built form and streetscapes;</p> <p>c) To avoid a proliferation of signs on individual sites and buildings;</p>	<p>The sign meets the objectives of the policy based on the following grounds:</p> <ul style="list-style-type: none"> • Whilst the sign is for third party advertising the location and design does not detract from the built form or streetscape. • The location of the proposed sign is on the façade of the existing rooftop plant room which will transform a blank, unattractive structure on the existing building into a 	✓

Provision	Response	Compliance
<p>d) Encourage the incorporation of signage into the design consideration of buildings; and</p> <p>e) To outline the standards that apply to signage throughout the Town and the matters that the Town will have regard to in determining applications.</p>	<p>vibrant digital sign increasing the element of interest and activation to the area.</p> <ul style="list-style-type: none"> • The sign does not protrude above the building as a standalone signage element but will conceal the unsightly plant equipment. • There is one existing static Pylon Sign at the Corner of Shepperton Road and Duncan Street which is predominantly Vicinity branding signage with two small tenant branding panels underneath. • Whilst the proposed digital sign will add a second sign to the Shepperton Road frontage, the existing static Pylon Sign serves the purpose of providing an arrival point for visitors to the shopping centre visible from vehicles and pedestrians travelling in both directions. • On the contrary, the proposed digital sign will provide third-party advertising to vehicles travelling in only a south-east direction. • The sign has a different purpose and message to the existing sign on the site. • No other signage is visible in the nearby locality. 	
General Requirements for All Signs		
(1) Advertisements shall be located such that traffic and pedestrian safety is not compromised;	<p>The sign is located on the roof of the building and therefore does not affect any driver sightlines or pedestrian safety nor potentially dominate or obscure a traffic control device.</p> <p>Refer to the Road Safety Assessment has been prepared by Cardno at Appendix C.</p>	✓
(2) Advertisements shall not contain any obscene or offensive information or illustration;	Refer to section 3.2 of this report.	✓
(3) Advertisements shall not impede pedestrian or vehicle movements;	The sign is located on the roof of the building and will not impede pedestrian or vehicle movements.	✓
(4) Advertisements associated with new commercial, industrial or mixed use	N/A	✓

Provision	Response	Compliance
developments with multiple tenancies are to be accompanied with a wider signage strategy for the site;		
<p>(5) Where illuminated:</p> <p>(a) not cause a nuisance, by way of light spillage to abutting sites;</p> <p>(b) not comprise flashing, intermittent or running lights, or change more than once in every 5-minute period;</p> <p>(c) not interfere with or be likely to be confused with, traffic control signals;</p> <p>and</p> <p>(d) not have a light of such intensity as to cause annoyance to the public.</p>	<p>The proposed digital signage is illuminated using LEDs installed within the front face. The brightness of the LEDs shall be controlled to provide upper and lower thresholds as required as well as automatically via a local light sensor to adjust to ambient lighting conditions.</p> <p>A Lighting Impact Assessment has been prepared by Electro Light (refer Appendix D). The assessment examined the proposed sign against the relevant provisions of the applicable Australian Standards and Main Roads guidelines.</p> <p>The assessment concludes that the proposed sign will not result in unacceptable glare nor will it adversely impact the safety of pedestrians, residents or vehicular traffic. The proposed signage will also not cause any reduction in visual amenity to nearby residences or accommodation. The signage shall be initially commissioned to half the recommended maximum luminances.</p> <p>A dwell time of 30 seconds is proposed which is a slight variation to the Main Roads guideline of 40 seconds. Refer to response to section 3.3 of this Report and the Road Safety Assessment has been prepared by Cardno at Appendix C which outlines the rationale for the proposed dwell time.</p> <p>In addition, the refresh rate (the duration of transition between the full display of one message and the full display of the next message) will not exceed 0.1 seconds which is compliant with MRWA guidelines. This means that a driver or pedestrian would not be aware of the transition in content.</p>	<p>Variation requested for a dwell time of 30 seconds</p>
<p>(6) Where the policy refers to a maximum area and the advertisement involved has more than one visible face the measurement identified is applicable to each face;</p>	N/A	

Provision	Response	Compliance
(7) Advertisements are not to extend beyond the boundary of the lot unless located on an existing awning or canopy; and	The sign is located within the property boundary.	✓
(8) Not obscure any architectural features of the building.	<ul style="list-style-type: none"> • The location of the proposed sign is on the façade of the existing rooftop plant room which will transform a blank, unattractive structure on the existing building into a vibrant digital sign increasing the element of interest and activation to the area. • The sign does not protrude above the building as a standalone signage element but will conceal the unsightly plant equipment. 	✓
Part Three – Non preferred sign types		
Roof Sign	The sign is technically an above roof sign, however it is considered a good built form outcome as it conceals an unattractive, bulky roof top plant equipment box. The digital sign will appear as a vibrant architectural feature to activate and improve the streetscape.	Minor variation requested.
Third party signage for any sign type. However, consideration will be given where the sign advertises a sponsor of a sporting or community organisation, is located on the same property, and the sign is of an acceptable visual standard.	<p>Whilst the sign will be used for third party advertising, the content of the sign can be readily changed electronically and remotely in response to a request to display emergency information or in the event of a complaint due to content. This is considered highly beneficial and an advantage over traditional static advertising signs.</p> <p>All advertising standards will be adhered to. This includes compliance with the national standards and codes of content by Advertising Standards Bureau, Australian Association of National Advertisers and the Outdoor Media Association which will manage content.</p> <p>With the sign forming part of a shopping centre development, third party signage is consistent with the retail/commercial context supported by high volumes of pedestrian and vehicle traffic. A sign of this nature would not be inconsistent with the urban context in which it sits.</p>	Minor variation requested.
Part Four - Matters to be considered when determining an application for development approval for signage		

Provision	Response	Compliance
<p>(1) In determining an application for development approval the Council will have regard to:</p> <p>1. any other Policies or specific Design Guidelines that may apply to the area within which the sign is to be located.</p>	<p>All applicable planning requirements and policies have been addressed.</p>	<p style="text-align: center;">✓</p>
<p>2. The matters listed in deemed clause 67 of the Planning and Development (Local Planning Schemes) Regulations 2015 and clause 30A of Town Planning Scheme No. 1 being:</p>	<p>Refer below.</p>	<p style="text-align: center;">Minor variation requested.</p>
<p>(i) the impact of the sign on the quality of the streetscape where it is to be displayed and more generally of the district;</p>	<p>Shepperton Road is a main vehicle spine connecting the eastern end of the CBD to the Albany Highway / Welshpool Road intersection in Bentley. Whilst there are still a number of residential dwellings with direct frontage to Shepperton Road, there also a number of commercial and retail uses particularly at the northern end where the subject site is located.</p> <p>The streetscape environment in proximity to the proposed sign is dominated by vehicles with limited visual amenity. The location of the proposed sign is on the façade of the rooftop plant which will transform a blank, unattractive structure on the existing building into a vibrant digital sign increasing the element of interest and activation to the area. For these reasons, the proposed sign will have a positive contribution to the streetscape.</p>	<p style="text-align: center;">✓</p>
<p>(ii) whether the size of the sign appropriately relates to the architectural style, design and size of a building on which the sign is to be displayed, and in measuring the size of a sign a polygon shall be taken immediately around the text, graphics or image of the sign and not the entire background, except where the finish or colour of the background differs substantially from the background against which the sign is to be displayed.</p>	<p>The location of the proposed sign is on the façade of the rooftop plant which will transform a blank, unattractive structure on the existing building.</p> <p>The sign will be 12m x 4m and occupy the majority of the plant structure which will improve the visual amenity of the building.</p> <p>The face of the sign will comprise of a digital screen constructed with material sufficient for outdoor viewing. The proposed sign will be upkept to ensure high quality visual displays.</p>	<p style="text-align: center;">✓</p>
<p>(iii) whether the colour scheme and materials of the sign are compatible with the</p>	<p>The existing colour palate is generally all white. The digital sign will contribute with a vibrant modern sign that contributes to the commercial</p>	<p style="text-align: center;">✓</p>

Provision	Response	Compliance
architectural style and design of a building on which the sign is to be displayed;	context of a shopping centre. The sign is considered compatible with the style and design of the existing building.	
(iv) whether the colour scheme and materials of the sign are compatible with the overall architectural style and design of the area or precinct in which the sign is to be displayed; and	As stated above, the digital sign will provide colourful, interactive advertising which is appropriate and an expected component of a busy urban environment. The sign is considered compatible and in line with expectation of signage within a shopping precinct supported by complementary urban uses.	✓
(v) how many signs are on the land where the sign will be displayed.	<p>There is one existing static Pylon Sign at the Corner of Shepperton Road and Duncan Street which is predominantly Vicinity branding signage with two small tenant branding panels underneath.</p> <p>Whilst the proposed digital sign will add a second sign to the Shepperton Road frontage, the existing static Pylon Sign serves the purpose of providing an arrival point for visitors to the shopping centre visible from vehicles and pedestrians travelling in both directions.</p> <p>On the contrary, the proposed digital sign will provide third-party advertising to vehicles travelling in only a south-east direction. The sign has a different purpose and message to the existing sign on the site. No other signage is visible in the nearby locality.</p>	✓
(3) Council may refuse to approve an application, where - (i) the sign may obstruct the sight lines of a person driving or riding a vehicle or a pedestrian;	<p>The sign will be installed on the roof of the Victoria Park Central Shopping Centre, adjacent to an existing plant room. The signage will face north and be visible only to southbound traffic. Given the location of the signage on the existing rooftop, it is not expected to obstruct any sight lines for a person or pedestrian.</p> <p>Further details relating to sign visibility have been addressed in Part 4 of the attached Road Safety Assessment (Appendix C).</p>	✓
(ii) the sign may unreasonably distract persons driving or riding vehicles;	A detailed Road Safety Assessment has been completed as part of this proposal and outlines details relevant to this provision. Please see Appendix C , specifically Section 6 for more information.	✓

Provision	Response	Compliance
(iii) the sign may detract from the quality of the streetscape or area where it is to be displayed;	<p>The streetscape environment in proximity to the proposed sign is dominated by vehicles with limited visual amenity. Due to the topography and site level difference between Shepperton Road and Victoria Park Central, the main building sits well below the street level and views for passing vehicles and pedestrians is to the blank rooftop and plant equipment which provides an opportunity for improvement.</p> <p>The location of the proposed sign is on the façade of the rooftop plant which will transform a blank, unattractive structure on the existing building into a vibrant digital sign increasing the element of interest and activation to the area. For these reasons, the proposed sign will have a positive contribution to the streetscape amenity and overall provides improvements to the existing built form.</p>	✓
(iv) the size of the sign does not appropriately relate to the architectural style, design and size of a building on which the sign is to be displayed;	Refer to response at (1)(ii) above.	✓
(v) the colour scheme and materials of the sign are not compatible with the architectural style and design of a building on which the sign is to be displayed;	Refer to response at (1)(iii) above.	✓
(vi) the colour scheme and materials of the sign are not compatible with the overall architectural style and design of the area or precinct in which the sign is to be displayed; or	Refer to response at (1)(iv) above.	✓
(vii) the sign will be additional to other signs on the land where it will be displayed.	Refer to response at (1)(v) above.	✓
(viii) The sign contains offensive material; and	Refer to section 3.2 of this report.	
(ix) The sign contains third party advertising.	Refer to response for Part Three of the policy above.	Minor variation requested.

4.2.4. Signs Local Law 2006

In accordance with the Town of Victoria Park's Signs Local Laws, the proposed digital sign does not fall within the list of exempt signs or temporary signs. Rather, in accordance with Part 6 of the local laws, the advertising sign falls within the category of a "roof sign" under clause 35 which is defined as:

“A roof sign is an advertising sign that protrudes above the normal roofline of a building or is painted on or mounted flush to the roof of a building.”

In relation to the sign proposed, clause 33 (2)(a) states that:

“(a) the Town will generally not approve the provision of any of the advertising signs in clauses 35, 36 and 37 to a commercial premise because they do not provide a positive contribution to the amenity and built form of the locality; and...” [Emphasis added]

As previously stated, whilst the sign is technically a ‘roof sign’ under the Town of Victoria Park local planning framework, the sign does not protrude above the building as a standalone signage element. The location of the proposed sign is on the façade of the existing rooftop plant which will transform a blank, unattractive structure on the existing building into a vibrant digital sign increasing the element of interest and activation to the area.

The streetscape environment in proximity to the proposed sign is dominated by vehicles with limited visual amenity. Due to the topography and site level difference between Shepperton Road and Victoria Park Central, the main building sits well below the street level and views for passing vehicles and pedestrians is to the blank rooftop and plant equipment which provides an opportunity for improvement.

The location of the proposed sign is on the façade of the rooftop plant which will transform a blank, unattractive structure on the existing building into a vibrant digital sign increasing the element of interest and activation to the area. For these reasons, the proposed sign will have a positive contribution to the streetscape amenity and overall provides improvements to the existing built form.

5. CONCLUSION

Overall, the proposed large format digital sign is considered appropriate within the context of the site and the surrounding area being a District Centre abutting a Primary Regional Road.

As discussed above, the proposal seeks minor variations to the Town's policy framework, however despite this the proposal is considered to have merit based on the following planning grounds:

- The location of the proposed sign is on the façade of the existing rooftop plant room which will transform a blank, unattractive structure on the existing building into a vibrant digital sign increasing the element of interest and activation to the area.
- Whilst the billboard will provide for third party advertising, this is within the expectations of the local context and is considered compatible within a shopping precinct and a busy urban environment.
- The Road Safety Assessment demonstrates that the proposal is low risk. A minor portion of the sign encroaches on the 'Device Restriction Area – Outside Road Reserve', however it is considered that the proposed sign is 'low-risk' in nature. Further, the proposed 30 second dwell time is unlikely to have any noticeable impact on road safety in comparison to the 40 second requirement.
- The Lighting Assessment demonstrates that the proposed level of illumination is compliant with the relevant Australia Standards, Main Roads WA guidelines and local planning policy requirements.
- The content of the sign can be readily changed electronically and remotely in response to a request to display emergency information or in the event of a complaint due to content. This is considered highly beneficial and an advantage over traditional static advertising signs.
- The refresh rate (the duration of transition between the full display of one message and the full display of the next message) will not exceed 0.1 seconds which is compliant with MRWA guidelines.
- All advertising standards will be adhered to including compliance with the national standards and codes of content by Advertising Standards Bureau, Australian Association of National Advertisers and the Outdoor Media Association which will manage content.
- The sign will provide vibrancy in an area that has limited to no night time amenity.

The provided technical reports demonstrate that the proposed sign can be maintained and operate in a safe manner with regards to the traffic safety and visual impact. As such we request the Town have regard to the individual merits of the application in applying discretion and making a determination on the proposal.

We trust sufficient information has been provided to consider the application in a timely manner and respectfully request this application be approved.

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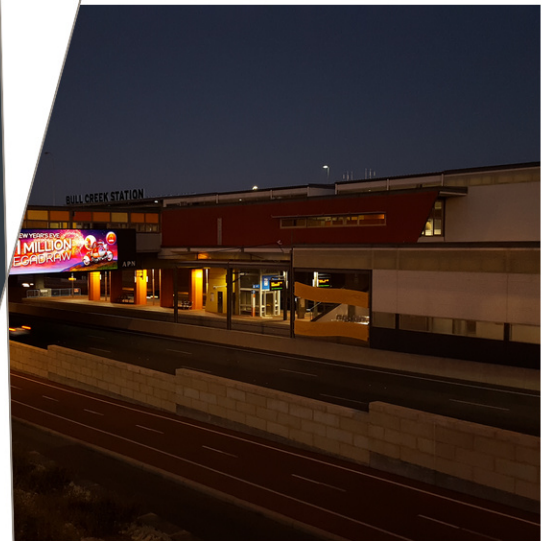
Proposed Digital Advertising Sign – Road Safety Assessment

Shepperton Road, Victoria Park

CW1021700

Prepared for
Vicinity Centres

11 April 2018



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Document Information

Prepared for	Vicinity Centres
Project Name	Shepperton Road, Victoria Park
File Reference	CW1021700-TR-RP-B-Vic Park Digital Sign Assessment
Job Reference	CW1021700
Date	11 April 2018
Version Number	B

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Effective Date 11/04/2018

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Date Approved 11/04/2018

Document History

Version	Effective Date	Description of Revision	Prepared by	Reviewed by
A	26/2/2018	For issue	RR	SL
B	11/4/2018	Final Report	RR	SL

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1 Introduction

Cardno has been engaged by Vicinity Centres to undertake a safety assessment of installing a digital advertising sign on the roof of the Victoria Park Central Shopping Central, 366 Albany Highway, Victoria Park. The proposed sign would be located adjacent to Shepperton Road, facing north.

As the proposed digital advertising sign is visible from a state-controlled road (Shepperton Road), it is subject to Main Roads' *Conditions for Advertising Signs beyond State Road Reserves* policy.

The purpose of this assessment is to review safety aspects of the proposed sign in relation to Main Roads' *Conditions for Advertising Signs beyond State Road Reserves* policy ('the Policy').

2 Sign Location and Characteristics

2.1 Sign Location

The location of the proposed sign is shown in **Figure 2-1**.

The sign will be installed on the roof of the Victoria Park Central Shopping Centre, adjacent to an existing plant room. The sign will face north and therefore be visible only to southbound traffic.

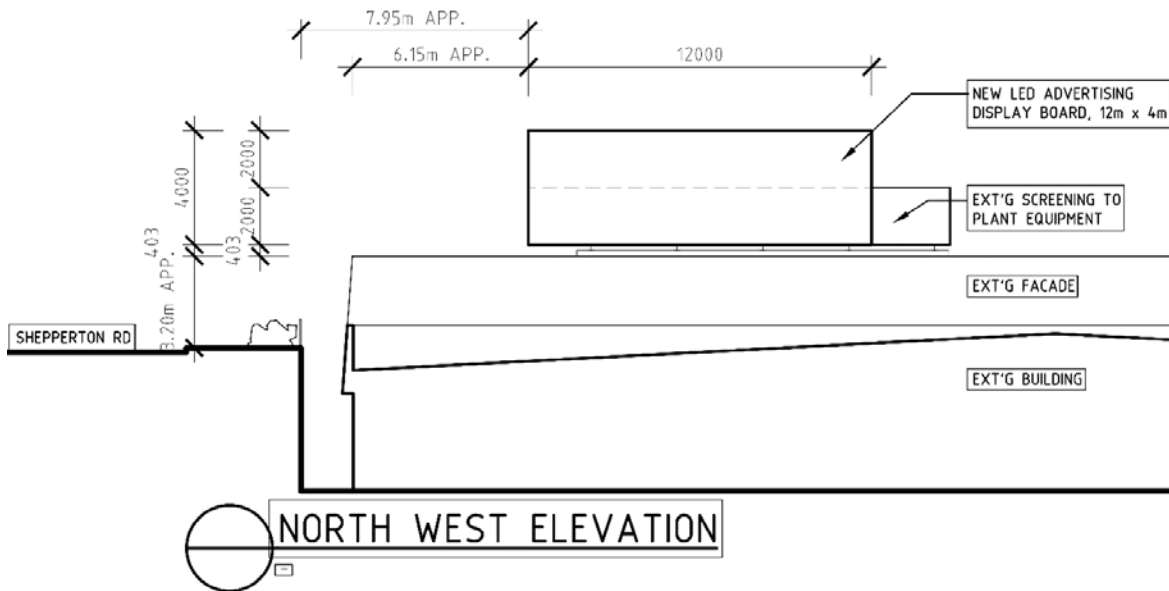
Figure 2-1 Sign Location



2.2 Sign Characteristics

The dimensions of the proposed sign are shown in **Figure 2-2** below. The full drawing set can be found in **Appendix A**.

Figure 2-2 Proposed Digital Advertising Sign Dimensions



Source: Vicinity Centres

According to information provided by Vicinity Centres, the sign will display a series of static advertisements which are rotated periodically. The transition between advertisements will not include any transition effects i.e. fly in, fade out etc. The main benefit of the proposed sign will be the ability to rotate advertisements without requiring manual labour, eliminating the safety risks involved in the installation and replacement of traditional static advertising signs.

3 Road Environment and Traffic Volumes

Shepperton Road is classified as a Primary Distributor under the Main Road WA Functional Road Hierarchy with a posted speed limit of 60 km/h. At the location of the proposed sign, Shepperton Road has two southbound lanes and two northbound lanes divided by a 2.8m wide median island, which reduces in width to accommodate a right turn pocket at the Duncan Street intersection.

The Shepperton Road / Duncan Street intersection is a four-way signalised intersection with partial filter right turns on the Albany Highway approaches and filter right turn at Duncan Street approaches.

Ursula Frayne Catholic College is located on the north/east side of Shepperton Road, opposite the location of the proposed sign. Shepperton Road is subject to 'No Parking' restrictions and no student drop off/pick up activity occurs on the Shepperton Road frontage. There is also not a school zone on Shepperton Road, as shown in **Figure 2-1**. An indented bus bay for southbound traffic is located on Shepperton Road approximately 120 metres north of the proposed sign.

A pedestrian underpass is located beneath Shepperton Road, providing safe access across Shepperton Road for students of the Catholic College.

Existing traffic volumes on Shepperton Road are shown in **Table 3-1** below.

Table 3-1 Average Mid-Block Traffic Volume

Location	Date	AM Peak (08:00-09:00)	PM Peak (17:00-18:00)	Daily
North of Duncan Street	June 2016	2,403	2,709	30,339
South of Duncan Street	Aug 2015	2,313	2,646	30,629

Source: MRWA Traffic Map

The intersection of Shepperton Road and Duncan Street is currently being upgraded by Main Roads and the scope of works includes:

- > Extend the city-bound bus lane on Shepperton Road
- > Double the length of the right-turn pockets on Shepperton Road at Duncan Street
- > Install a safety barrier adjacent to the Victoria Park Centre shopping centre
- > Upgrade pedestrian facilities
- > Modify the traffic signals to remove the right-turn filter movement from Shepperton Road to Duncan Street

A copy of the Main Roads Project Update for this project is included at **Appendix B**.

These upgrades are expected to improve safety in the vicinity of the proposed digital sign.

4 Sign Location and Visibility

4.1 Visibility

The proposed digital advertising sign will be installed on the roof of the Victoria Park Central Shopping Centre, adjacent to an existing plant room. The sign will face north and therefore will only be visible only to southbound traffic.

Figure 4-1, Figure 4-3 and Figure 4-4 illustrate the relative visibility of the proposed sign from the perspective of a driver travelling south east on Shepperton Road. The sign is first visible approximately 200m from the proposed sign, at the intersection of Harper Street, and remains visible to drivers until they have passed the sign.

Figure 4-1 Shepperton Road view southbound, approximately 250m before the Proposed Sign



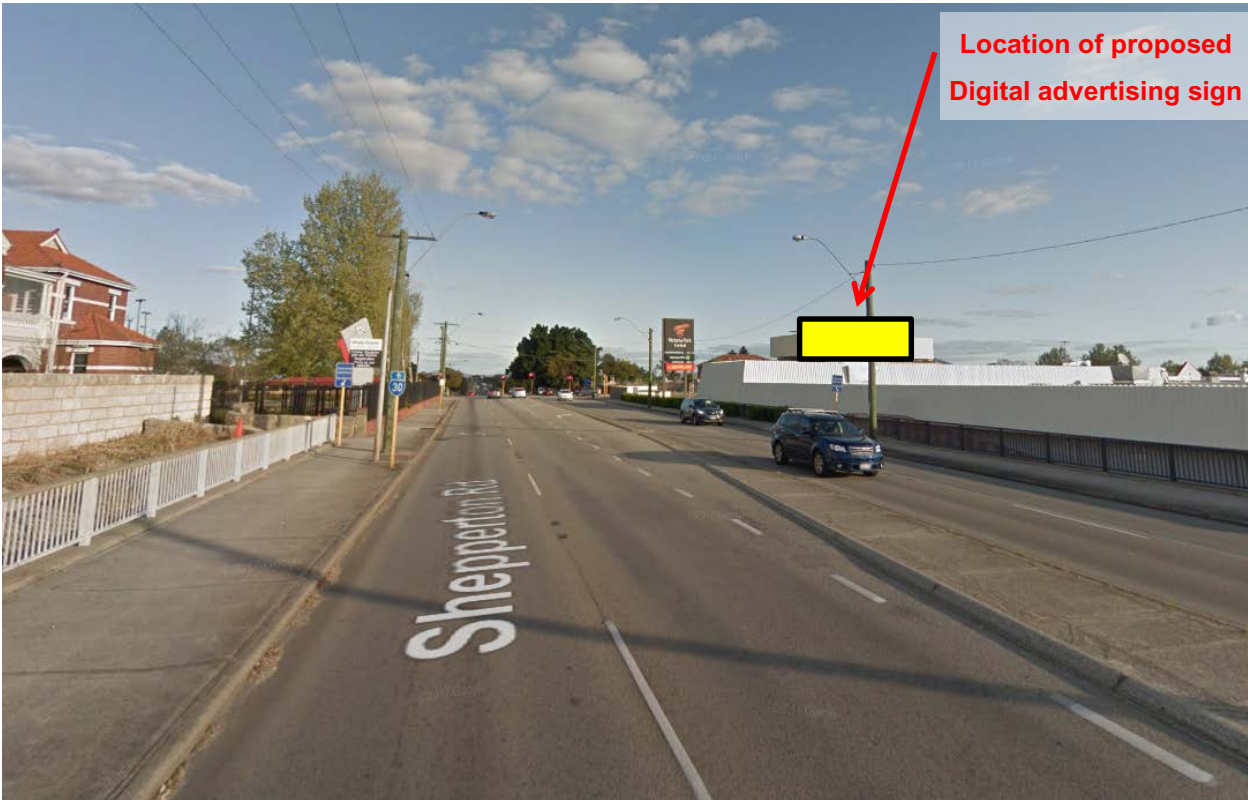
Figure 4-2 Shepperton Road view southbound, approximately 200m before the Proposed Sign



Figure 4-3 Shepperton Road view southbound, approximately 150m before the Proposed Sign



Figure 4-4 Shepperton Road view southbound, approximately 50m before the Proposed Sign



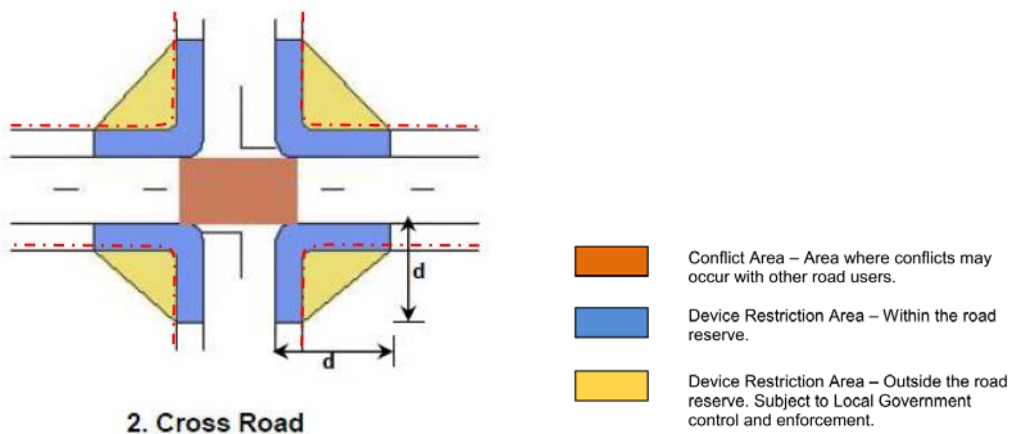
4.2 Driver Sight Lines

As the sign is located on top of the roof of a shopping centre building it will have no impact on driver sightlines for any movement.

4.3 Device Restriction Areas

A Device Restriction Area (DRA) is an area where advertising devices visible from state-controlled road are restricted under the Policy. The location of DRAs are defined in Appendix A of the Policy, and the size of the DRA is determined by distance 'd' which varies based on the posted speed limit of the subject road. Shepperton Road has a speed limit of 60km/h which corresponds to a distance 'd' of 65m. The relevant DRA for the proposed sign is shown in **Figure 4-5**.

Figure 4-5 Device Restriction Area for Cross Road



Source: Figure 1, Appendix A of the Policy

The location of the sign relative to the DRA is shown in **Figure 4-6** and **Appendix C**. As shown below, the sign is located mostly outside of the ‘Device Restriction Area – Outside the road reserve’. A small portion of the sign – approximately 3.1m – encroaches upon the DRA. The proposed sign is therefore considered to be substantially compliant with this element of the Policy.

Figure 4-6 Proposed Sign Location in Reference to the DRA



The minor encroachment into the DRA is not considered sufficient to reject the proposed sign for the following reasons:

- > The encroachment is only a small proportion of the sign (approx 3.1m of a 12m wide sign).
- > The section of Shepperton Road where the proposed sign is located has a crash rate significantly below the critical crash rate (refer to **Section 5.2**).
- > The road environment approaching the sign is considered to be low risk and low complexity for the following reasons:
 - The road is four lanes (two lanes each direction), separated by a raised median island
 - Parking is prohibited
 - There are no crossovers to/from private property
 - A pedestrian underpass is provided for school students to safely cross the road without interacting with traffic
 - The closest bus stop is located approximately 120m north of the proposed sign and has an indented bus bay

In addition, it must be acknowledged that in areas of acceptable crash rates, low risk and low complexity, Main Roads WA considers it appropriate to depart from the DRA requirements of the Policy. In recent years, Main Roads has approved and/or not objected to several digital advertising signs which are located within DRAs including, but not limited to, the following examples:

- > Kwinana Freeway northbound at Leach Highway, Bull Creek
- > Channel 9 Office at 267 St Georges Terrace, Perth (visible from Mitchell Freeway northbound)
- > 3 Oxford Close, West Leederville

5 Crash History

Main Roads' *Conditions for Advertising Signs within and beyond State Road Reserves* policy requires an evaluation of the crash history of the location of proposed advertising signs to determine whether a billboard is permitted at the nominated site.

5.1 Killed and Serious Injury (KSI) Criteria

Main Roads' policy (Clause 3.1.3.1) states that a billboard sign is subject to amendment when the proposed site has a history of three (3) or more Killed and Serious Injury crashes at any intersection within 'd' metres of the approach to the proposed advertisement sign. As Shepperton Road has a speed limit of 60km/h, distance 'd' is determined to be 65m (refer to **Table 5-1**).

Table 5-1 Distance 'd'

Speed Limited (km/h)	Distance 'd' (m)
50 or less	45
60	65
70	85
80	110
90	140
100	170
110	210

The closest intersection on the approach to the subject sign is Harper Street, which is located approximately 190m north of the Site, therefore this criterion is not applicable.

5.2 Crash Rate Criteria

Section 3.1.3.2 of the policy states that 'A billboard sign is not permitted where sections of the road on a carriageway have a crash rate higher than the critical crash rate.'

To determine the crash rate of the road section, the casualty crash (fatal, hospital, medical) rate for the section of the southbound carriageway of Shepperton Road from SLK 1.22 to SLK 2.72 (SLK=Straight Line Kilometre) has been calculated in accordance with Appendix C of the Policy. A copy of the crash data used for the calculation has been included as **Appendix D**.

The sign is located on SLK 2.22, and the crash rate calculation was conducted on a rolling 1 km segments starting from 1km (SLK 1.22) approaching the sign to 500m beyond the sign (SLK 2.72) in accordance to Appendix C of the *Policy*.

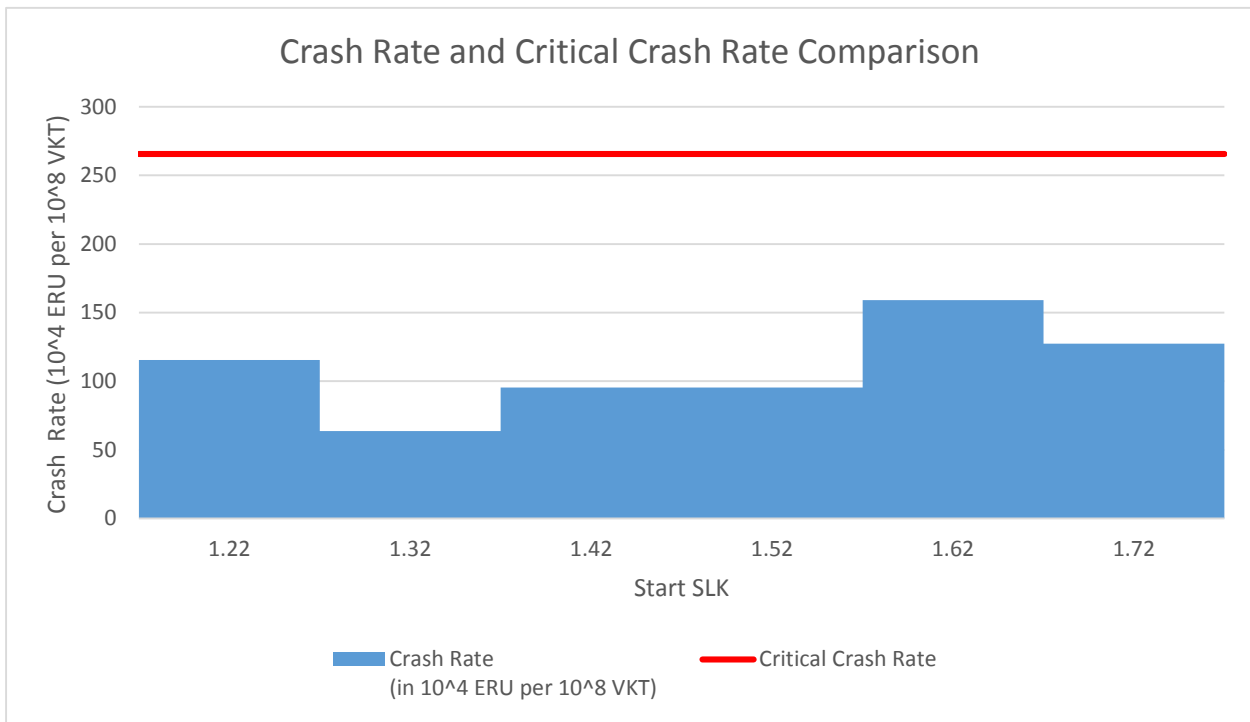
Table 5-2 below presents the summary of the results of the crash rate calculation and a comparison with the critical crash rates for this type of road and speed limit.

Table 5-2 Summary of Crash Rate Calculation

Section	Start SLK	End SLK	AADT (southbound)	Vehicles Kilometres Travelled (VKT)	No. of Casualty Crashes	Risk Score (in 10 ⁴ ERU)	Crash Rate (in 10 ⁴ ERU per 10 ⁸ VKT)	Critical Crash Rate	Crash Category
1	1.22	2.22	13,772	25,133,900	3	29	115.38	265.7	Low
2	1.32	2.32	13,772	25,133,900	2	16	63.66	265.7	Low
3	1.42	2.42	13,772	25,133,900	3	24	95.49	265.7	Low
4	1.52	2.52	13,772	25,133,900	3	24	95.49	265.7	Low
5	1.62	2.62	13,772	25,133,900	5	40	159.15	265.7	Low
6	1.72	2.72	13,772	25,133,900	4	32	127.32	265.7	Low

The results show that the casualty crash rate for this section of road is well below the critical crash rate and therefore the sign location has met the Critical Crash Rate criterion. **Figure 5-1** shows the comparison graphically.

Figure 5-1 Comparison of Casualty Crash Rate and Critical Crash Rate



6 Assessment against Main Roads Policy

Main Roads' *Conditions for Advertising Signs beyond State Road Reserves* policy, Clause 5.3 provides the road safety conditions under which advertising signs visible from state-controlled roads are assessed. The conditions are outline and addressed below.

Category	Policy Description	Assessment
Display	Advertising displays that have the potential to unduly distract drivers due to their design form, orientation or physical size, or iridescence, lustre or brilliance of reflected light, shall not be permitted. Assessment shall be undertaken subjectively.	The design, form, orientation and physical size of the proposed sign is not expected to distract drivers and is consistent with the visual environment of the area, which is a commercial precinct. Figure 6-1 and Figure 6-2 shows the existing visual environment of the vicinity of the proposed sign location. Iridescence, lustre or brilliance of reflected light will be managed by illumination settings on the sign which react to the level of ambient light in order to reduction the potential for any distraction to a driver. The maximum luminance values and the method of varying luminance will be in accordance with Appendix B of the <i>Policy</i> .
Display	Advertising signs likely to dazzle or distract drivers due to their brightness, high light emissions and/or frequent flashing, shall not be permitted. Sign owners may be directed to arrange for an independent post-installation assessment to determine whether the maximum luminance of illuminated and electronic advertising devices shown at Appendix B are exceeded, in which case the sign owner may be required to subsequently remove or modify the sign display	The brightness and light emission of the proposed sign will be managed according to the level of ambient light in order to reduce the potential for any distraction to a driver. The maximum luminance values and the method of varying luminance will be in accordance with the Appendix B of the <i>Policy</i> . The proposed sign will not include flashing messages – the advertising messages will have a transition time not exceeding 0.1 seconds between alternate messages. This transition will be used to change the luminance levels as the level of ambient light changes.
Display	Advertising displays that could create a confusing or dominating background, which have the potential to reduce the clarity of a traffic control device or the readability of the road layout, shall not be permitted. Assessment shall be undertaken subjectively	The sign is located on the roof of an existing building which is set back approximately 12 metres from the edge of the carriageway and 3.6 metres above road level. The sign will form part of an existing commercial streetscapes and will not dominate or potentially reduce the clarity of a traffic control device.
Display	For digital format billboards, the duration of transition between the full display of one message and the full display of the next message shall not exceed 0.1 seconds	Transition time will be set to not exceed 0.1 seconds
Display	Animated transitional effects such as fly-in, sliding and checker boarding shall not be permitted on electronic signs	The proposed sign will not include animated transitional effects such as fly-in, sliding or checker boarding.
Display	The primary textual elements of advertisements intended to be read by passing motorists shall be legible for drivers travelling at the normal road operating speed and when viewed within a ten-degree horizontal field of vision. No more than seven words on any single sign display shall be readable by such drivers at any one time. Any additional legend displayed on the sign shall have a letter height that renders the wording decisively illegible to passing motorists, i.e. any additional legend shall be legible only for non-motorised road users such as cyclists, passers-by on foot, etc.”	Advertisements to be displayed on the proposed sign will be designed to meet this condition.

Category	Policy Description	Assessment
Display	Message dwell time should be as per the requirements of Table 4.2 of the Policy – i.e. 40 seconds for a 60km/h speed limit.	<p>The dwell time for messages on this sign is proposed to be set to 30 seconds. The proposed digital sign is therefore not compliant with this requirement.</p> <p>The purpose of setting a minimum dwell time in the <i>Policy</i> is to limit the number of drivers who are exposed to a change in sign message, depending on the operating speed on the road. That is, the recommended dwell time in the <i>Policy</i> increases as the posted speed limit decreases and vice versa.</p> <p>The effect of digital sign dwell times on road safety is not well understood and there is limited evidence-based policy on this matter. Before-and-after studies are still being undertaken by various road authorities however, these are yet to establish definitive links between lower dwell times and reductions in road safety.</p> <p>For example, ARRB undertook a study of the Kwinana Freeway digital sign at Bull Creek Train Station (previously mentioned in Section 4.3) to analyse differences in driver's behaviour at different dwell times of 25, 30, 40, and 60 seconds. The study used vehicle headways and lateral control (lane drift) as metrics on which to measure changes in driver behaviour. ARRB concluded that the results of the study "<i>provide no evidence that the LFDS on the Bull Creek Train Station's PTA Bridge has any practically significant negative impact on headway or lateral control even at the shortest dwell time.</i>"</p> <p>Therefore, based on the available evidence, it is expected that the proposed 30 second dwell time is unlikely to have any noticeable impact on road safety compared to a compliant 40 second dwell time.</p>
Location	Advertising devices shall not be located within Device Restriction Areas as depicted in Figure 1 of Appendix A for state roads other than Freeways and Freeway standard roads or Figure 2 of Appendix A for Freeways or Freeway standard roads.	<p>The majority of the sign (approximately 75%) is located outside of the DRA, so the proposed sign is substantially compliant. A small portion of the sign is located within the edge of the DRA.</p> <p>The minor encroachment into the DRA is not considered sufficient to reject the proposed sign for the following reasons:</p> <ul style="list-style-type: none"> > The encroachment is only a small proportion of the sign (approx 3.1m of a 12m wide sign). > The section of Shepperton Road where the proposed sign is located has a crash rate significantly below the critical crash rate (refer to Section 5.2). > The road environment approaching the sign is considered to be low risk and low complexity for the following reasons: <ul style="list-style-type: none"> - The road is four lanes (two lanes each direction), separated by a raised median island - Parking is prohibited - There are no crossovers to/from private property - A pedestrian underpass is provided for school students to safely cross the road without interacting with traffic - The closest bus stop is located approximately 120m north of the proposed sign and has an indented bus bay
Location	Within two (2) kilometres of an information bay located on the same route, which provides for the display of business advertising.	The sign is not located within two (2) kilometres of an information bay on the same route.
Location	Advertising devices shall not be positioned within driver sightline areas	The sign is located on the roof of Victoria Park Central Shopping Centre therefore is not located within driver sightline areas.

Category	Policy Description	Assessment
Content	<p>The content of advertising devices shall exclude the following:</p> <ul style="list-style-type: none"> ▪ Colours and shapes arranged that may be mistaken for a traffic signals, traffic signs or instruction signs. ▪ Symbols, graphics or text that entices drivers to immediately turn or change lanes, or which could be mistaken for an instruction to drivers. ▪ Complicated / long website, social media or email addresses, and text messaging instructions. 	<p>Advertisements to be displayed on the proposed sign will be designed to meet this condition.</p>
Movement and Rotation	<ul style="list-style-type: none"> ▪ Moving advertising devices shall be restricted to speed environments of 70 km/h or less. ▪ Movement of an advertising device shall be restricted to rotation about a vertical axis or axes (Advertising devices in the form of a flag or banner are excluded from this condition). ▪ Variable message sign advertising shall not be displayed on a moving advertising device. 	<p>The proposed sign will be stationary and not involve movement or rotation.</p>
Road User Amenity	<p>Advertising signs shall be excluded from road sections offering significant visual aesthetic value for motorists where the display of devices will detract from such visual amenity for motorists.</p>	<p>The proposed sign is located on the roof of a shopping centre, which forms part of an existing commercial streetscape between the Causeway and Duncan Street. Figure 6-1 and Figure 6-2 show the visual environment in the vicinity of the proposed sign.</p>

Figure 6-1 Existing Visual Environment – Shepperton Road

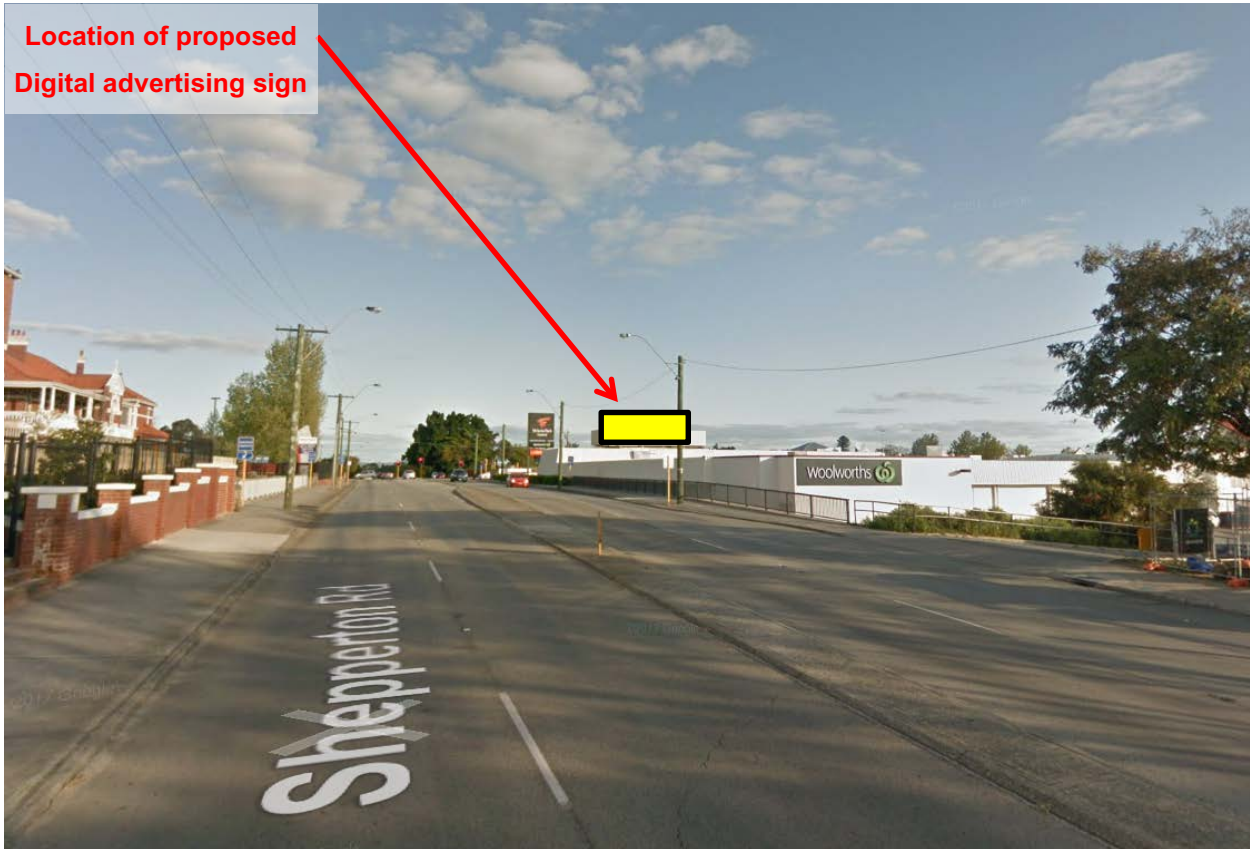


Figure 6-2 Close-up of Existing Visual Environment – Shepperton Road



7 Conclusions and Recommendations

The proposed digital advertising sign is to be located on the roof of the Victoria Park Central Shopping Centre, visible to southbound traffic on Shepperton Road.

The proposed digital advertising sign has been assessed against the Main Roads *Conditions for Advertising Signs beyond State Road Reserves* policy, with the following conclusions:

- > The sign is located outside of, but visible from, a state-controlled road reserve.
- > The sign is visible to southbound drivers from approximately 250m away.
- > The sign is located on the roof of a building and therefore does not affect any driver sightlines, nor potentially dominate or obscure a traffic control device.
- > The sign is located substantially outside the relevant Device Restriction Area.
- > There are no intersections within 65m (distance 'd') on approach to the proposed sign.
- > The Casualty Crash Rate for the subject section of Shepperton Road is significantly below the Critical Crash Rate as identified in Appendix C of the Policy.
- > The proposed sign will comply with all message display requirements, including luminosity, transitions and colours.
- > The sign is located within an existing commercial streetscape which is not an area of significant visual aesthetic value.

It is acknowledged that the proposed sign does not comply with the MRWA's policy on the following points:

- > Dwell time is proposed to be 30 seconds, which is shorter than the minimum 40 seconds recommended by the *Policy*.
- > A small portion of the sign encroaches on the 'Device Restriction Area – Outside Road Reserve' as defined in Appendix A, Figure 1 of the *Policy*.

However, it is considered that the above should not result in rejection of the proposed sign for the following reasons:

- > The proposed 30 second dwell time is unlikely to have any noticeable impact on road safety in comparison to a compliant 40 second dwell time. Studies undertaken in Western Australia (e.g. for Kwinana Freeway digital sign at Bull Creek) have not shown any negative impact on road safety related to reductions in dwell time below those recommended by the *Policy*.
- > The encroachment into the DRA is only a small proportion of the sign (approx 3.1m of a 12m wide sign).
- > The section of Shepperton Road where the proposed sign is located has a crash rate significantly below the critical crash rate (refer to **Section 5.2**).
- > The road environment approaching the sign is considered to be low risk and low complexity for the following reasons:
 - The road is four lanes (two lanes each direction), separated by a raised median island
 - Parking is prohibited
 - There are no crossovers to/from private property
 - A pedestrian underpass is provided for school students to safely cross the road without interacting with traffic
 - The closest bus stop is located approximately 120m north of the proposed sign and has an indented bus bay

In addition, it must be acknowledged that in areas of acceptable crash rates, low risk and low complexity, Main Roads WA considers it appropriate to depart from the DRA requirements of the Policy. In recent years, Main Roads has approved and/or not objected to several digital advertising signs which are located within DRAs including, but not limited to, the following examples:

- > Kwinana Freeway northbound at Leach Highway, Bull Creek
- > Channel 9 Office at 267 St Georges Terrace, Perth (visible from Mitchell Freeway northbound)

> 3 Oxford Close, West Leederville

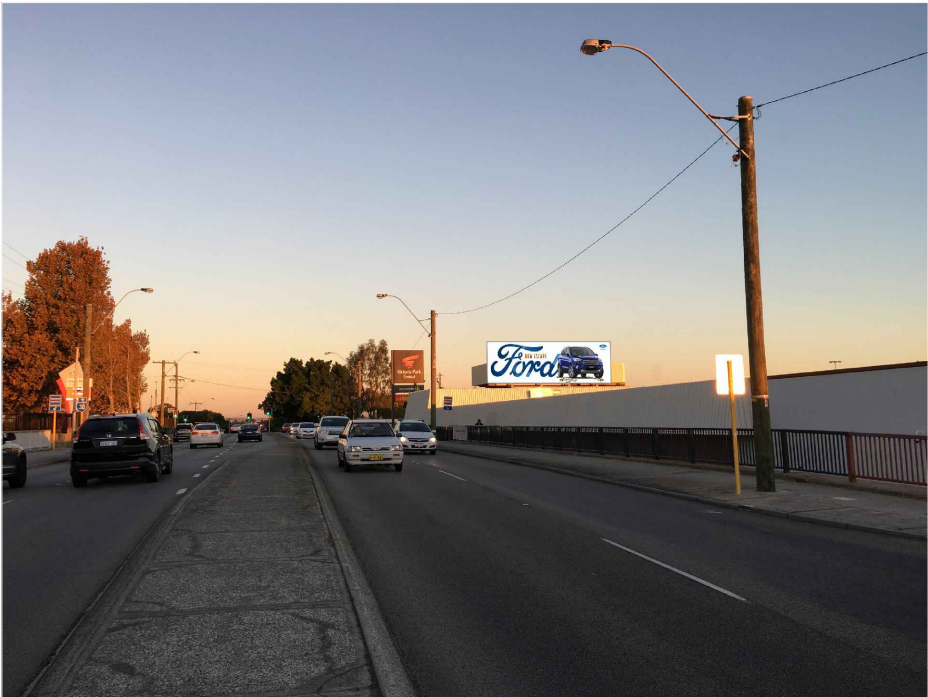
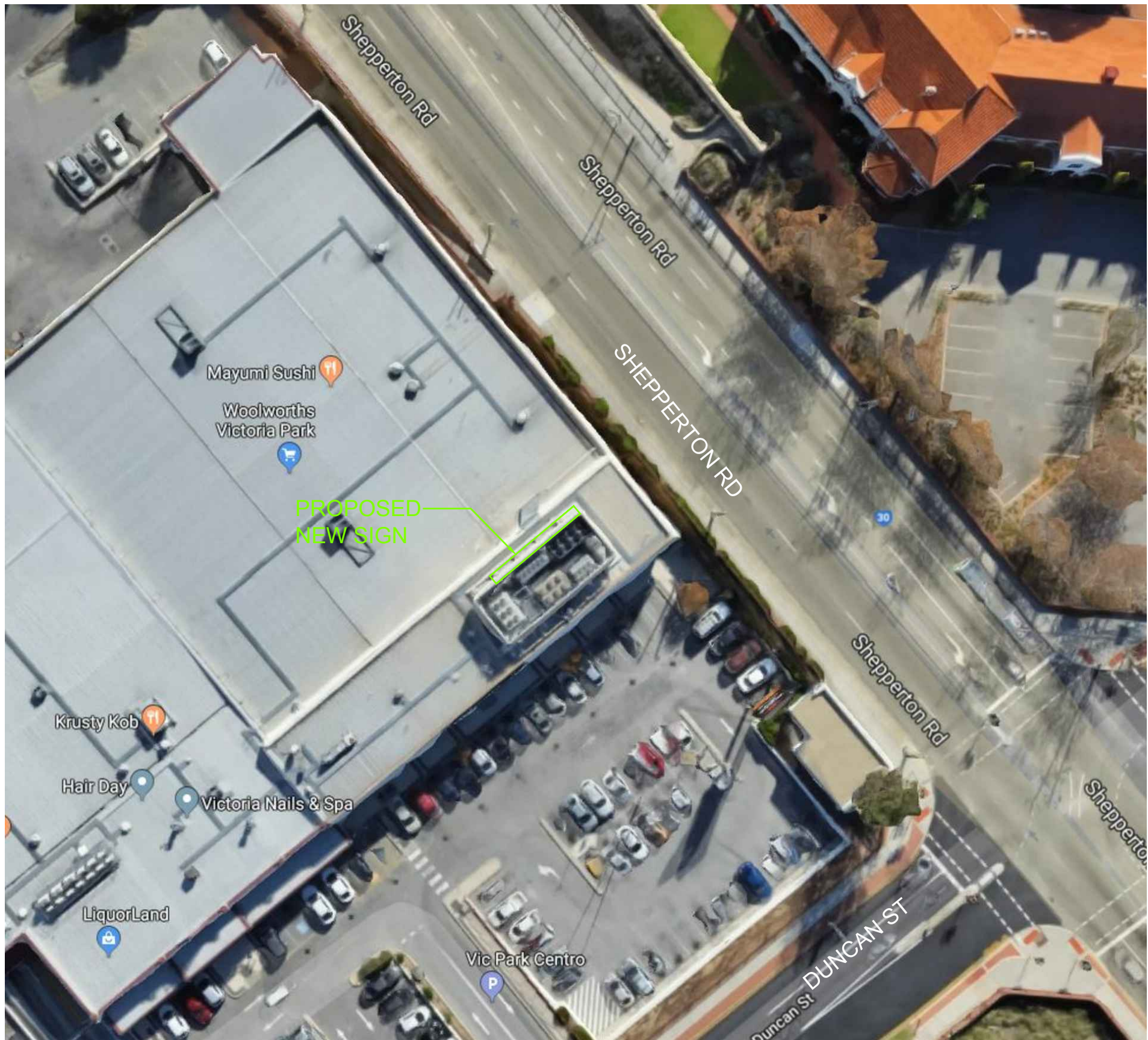
In conclusion, the proposed sign is considered low risk and, therefore, it is recommended that the proposed sign be approved.

Shepperton Road, Victoria Park

APPENDIX

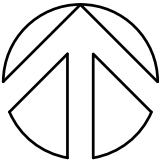
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SIGN PLANS



⊙ PROPOSED PHOTO

⊙ AERIAL PHOTO
SCALE 1:500 APP.



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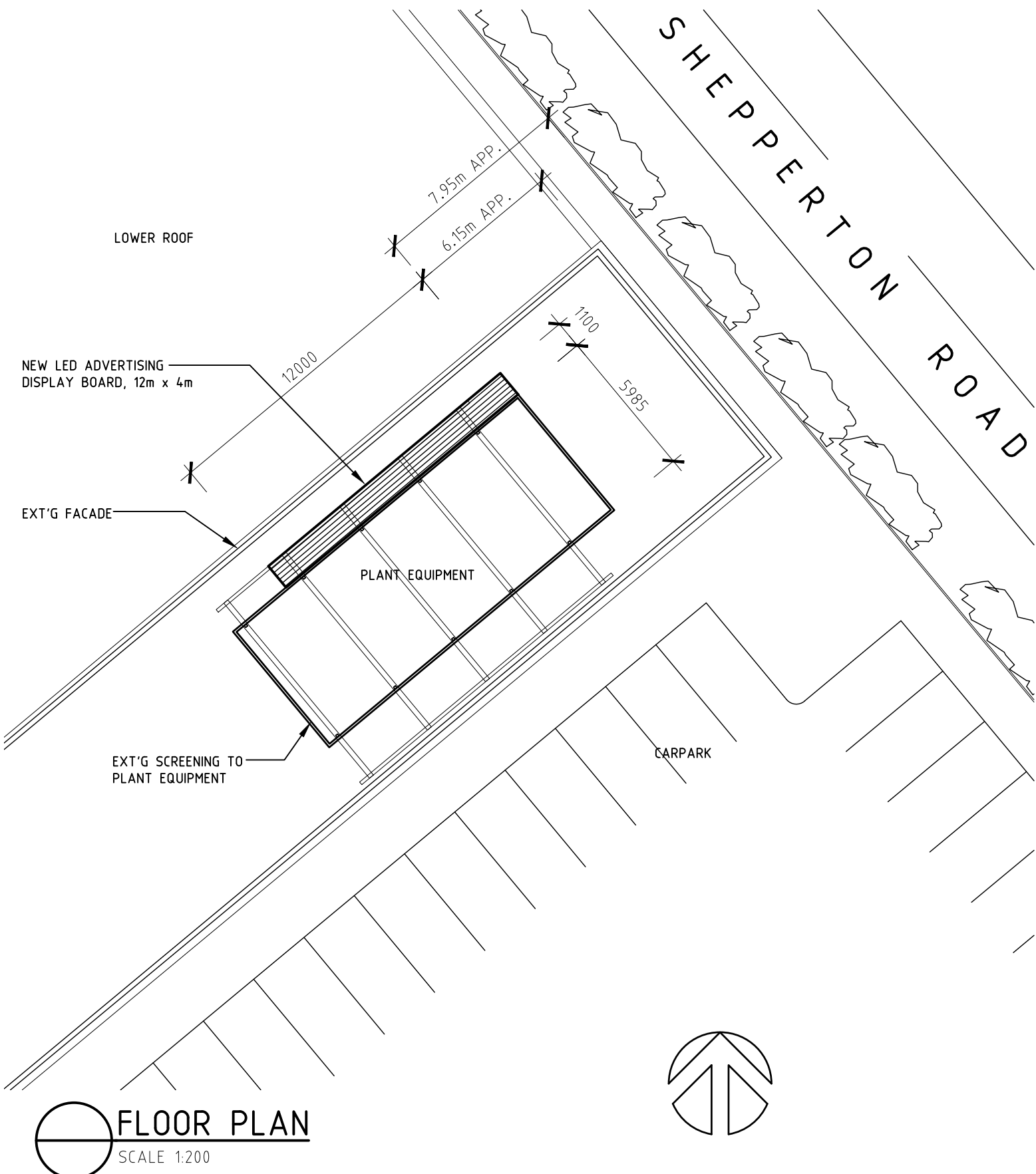


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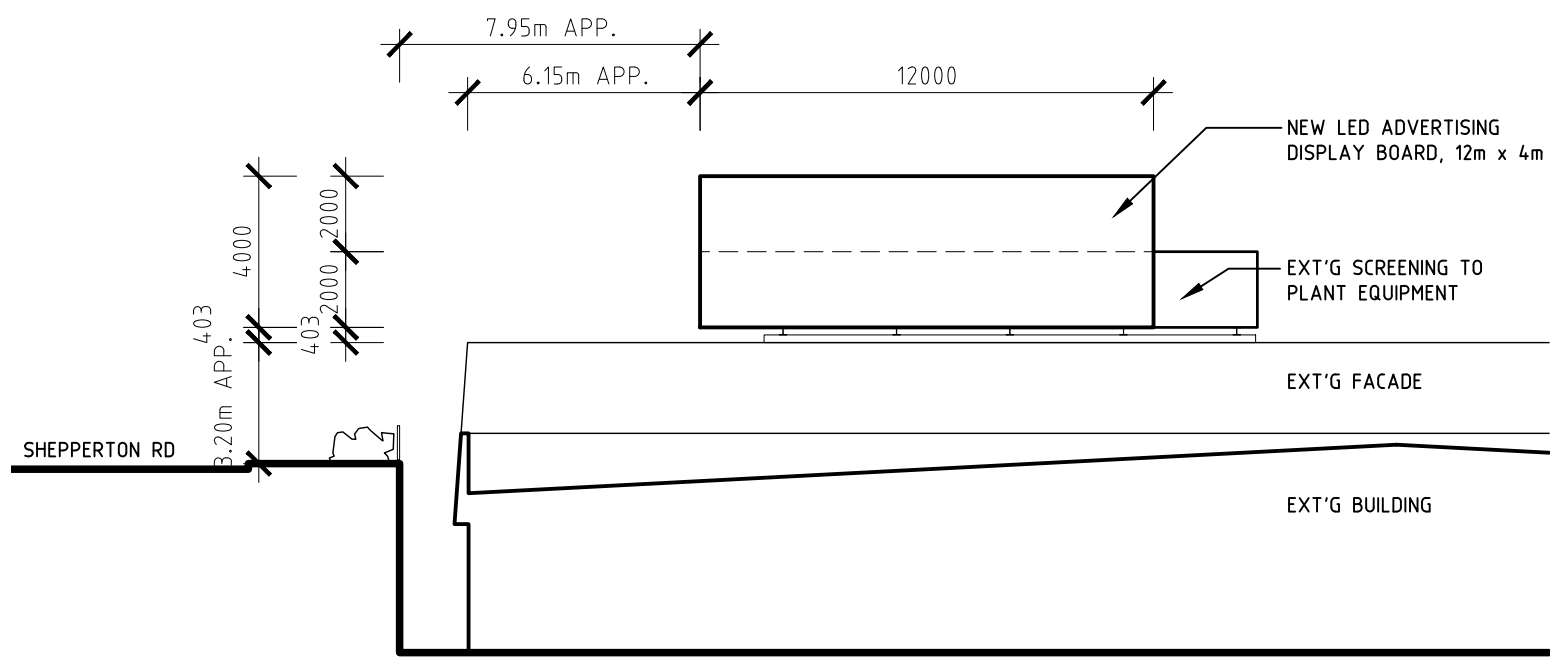
NEW ADVERTISING DISPLAY
127 SHEPPERTON RD,
VICTORIA PARK, W.A. 6100
PHOTOS

DRAWN KAS	DATE 2/2/18	SCALE 1:500	SHEET SIZE A3	JOB No. 1770	DRG. No. 01
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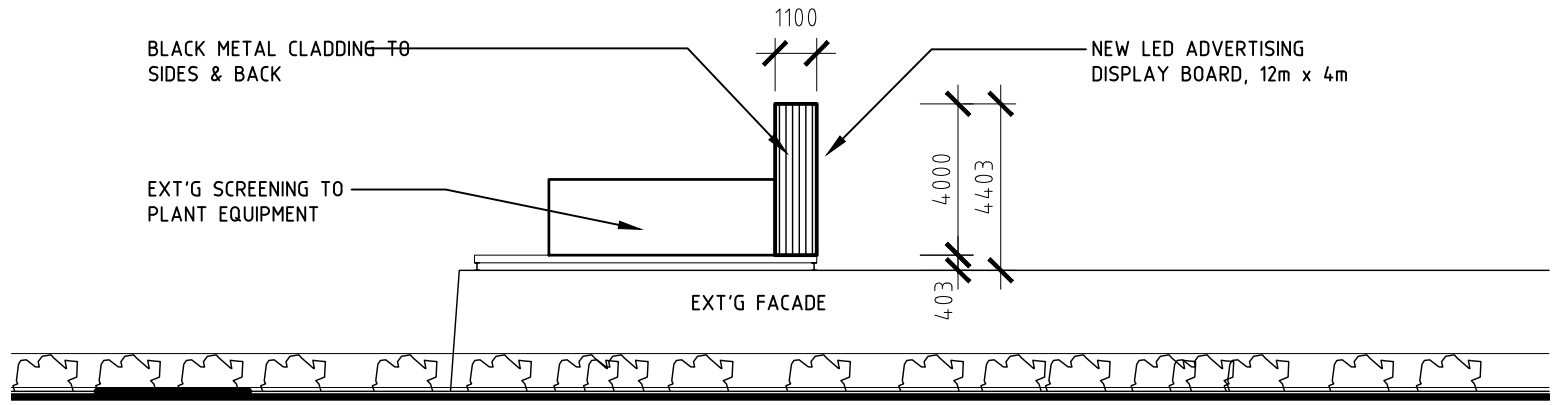
oe
OutdoorElements
Outdoor Elements Pty Ltd.
59 Derrimut Drive, Derrimut, VIC 3030.
Tel: (03) 9394 1111, Fax: (03) 9394 1555
www.oel.com.au



FLOOR PLAN
SCALE 1:200



NORTH WEST ELEVATION



NORTH EAST ELEVATION

REV.	DATE	DESCRIPTION



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NEW ADVERTISING DISPLAY
127 SHEPPERTON RD,
VICTORIA PARK, W.A. 6100
FLOOR PLAN & ELEVATIONS

DRAWN KAS	DATE 2/2/18	SCALE 1:200	SHEET SIZE A3	JOB No. 1770	DRG. No. 02
--------------	----------------	----------------	------------------	-----------------	----------------

oe
OutdoorElements
Outdoor Elements Pty Ltd.
59 Derrimut Drive, Derrimut, VIC 3030.
Tel: (03) 9394 1111, Fax: (03) 9394 1555
www.oel.com.au

Shepperton Road, Victoria Park

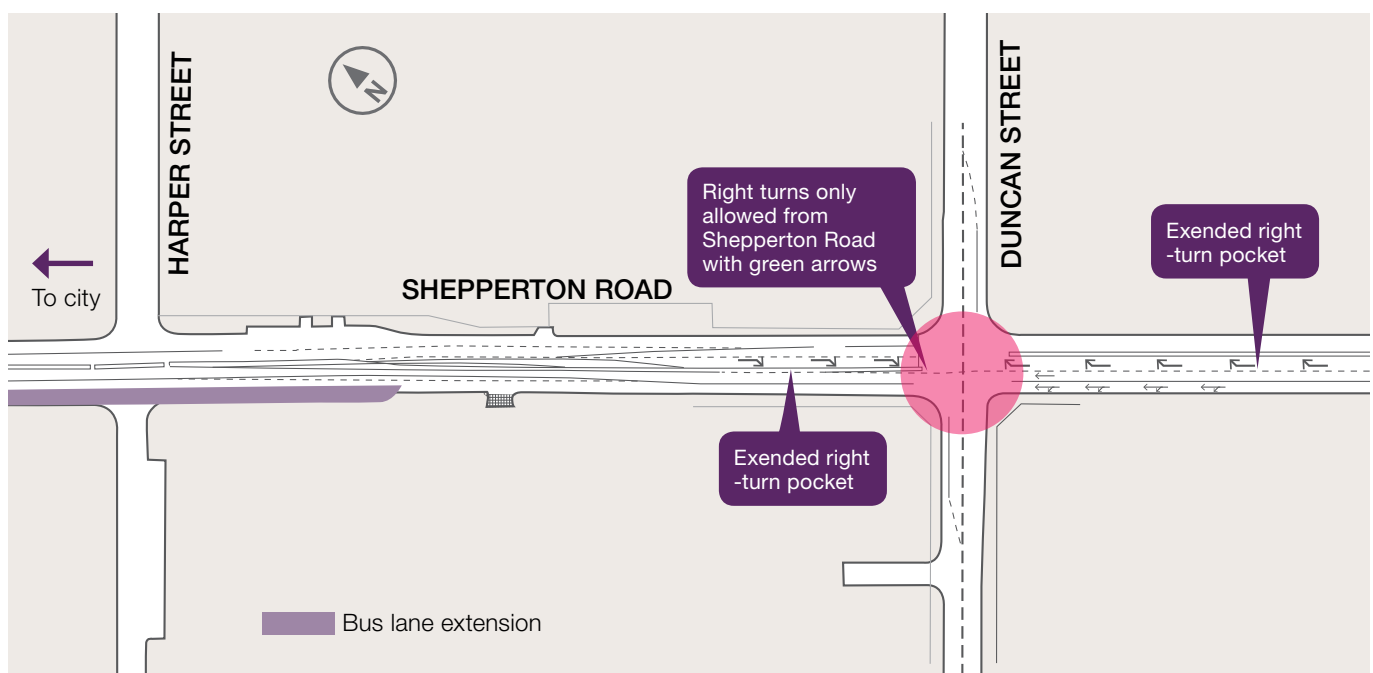
APPENDIX

B

SHEPPERTON ROAD / DUNCAN
STREET UPGRADE INFORMATION

Shepperton Road / Duncan Street Intersection, Victoria Park

Main Roads is upgrading the busy intersection of Shepperton Road and Duncan Street, in Victoria Park, to improve traffic flow and safety.



This project includes:

- extending the city-bound bus lane on Shepperton Road past Harper Street
- doubling the length of the right-turn pockets on Shepperton Road at Duncan Street
- modifying traffic signals so that right turns from Shepperton Road to Duncan Street can only be made with a green arrow
- upgrading pedestrian facilities at traffic signals
- installing a crash barrier on Shepperton Road, adjacent to the Victoria Park Central shopping centre.

This \$3 million project is funded by the State Government.

Timeframe

Service relocations will be complete for this project by the end of 2017. Construction will start in early 2018 and take up to four months to complete.

What to expect during construction

To minimise disruption to traffic on this busy route, construction will primarily be completed after hours (night works) from Monday to Saturday. Every effort will be made to minimise noise.

Road users should expect lane closures and speed reductions, and are advised to plan ahead to avoid delays.

MORE INFORMATION

Tel: 138 138

Email: enquiries@mainroads.wa.gov.au

www.mainroads.wa.gov.au

Shepperton Road, Victoria Park

APPENDIX

C

SIGN LOCATION PLAN

PROPOSED SIGN
ENCROACHING THE
DRA □□ □□□□
APPRO □□□□

PROPOSED SIGN

PAINT
EQUIPMENT

65m

3.1m
12.0m
2.8m

65m

SHEPPERTON ROAD

DUNCAN STREET

DUNCAN STREET



Device Restriction Area – Within the road reserve.



Device Restriction Area – Outside the road reserve. Subject to Local Government control and enforcement.



Shepperton Road, Victoria Park

APPENDIX

D

CRASH DATA

Detailed Crash History



Report Criteria

Road	SLK	CWY
H001 - Albany Hwy	1.22 to 2.72	All

Parameter	Value	Description
From Date	01/01/2012	
To Date	31/12/2016	
Crash Type	Midblock	
Severity	All	

Road	SLK	CWY	True Dist	Loc End Date	Dist Error	Intersection	Date	Day	Time	Severity	Crash No.	Type	Light Cond	Road Cond	Speed Limit	Traffic Control	Road Feature	Road Alignment	Speed Factor	MR Nature	Location	RUM	Unit	Unit Type	From Dir	To Dir	Veh/Ped Move	First Object Hit	Second Object Hit	Third Object Hit	Target Impact Point		
H001	1.31	L	1.31				20/01/2013	Sunday	1245	Medical	2013606834	Midblock	Daylight	Dry	60	No Sign Or Control		Straight			Sideswipe Same Dirn	On Cway	36:Same Dirn: Change Lanes - Right	Target	Car	N	S	Straight Ahead: Not Out Of Control				Side	
																							Colliding	Car	N	S	Overtaking: Cut In From Left						
	1.36	L	1.36		0.00		21/03/2012	Wednesday	1610	PDO Minor	2012805136	Midblock	Daylight	Dry	60	No Sign Or Control		Straight			Non Collision	On Cway	75:Off Path On Straight: Lost Control On Cway	Colliding	Motor Cycle	N	S	Swerving: To Avoid Veh					
							21/05/2016	Saturday	2015	PDO Minor	2016171172	Midblock	Dark - Street Lights On	Wet		No Sign Or Control		Straight			Sideswipe Same Dirn	On Cway	37:Same Dirn: Change Lanes - Left	Target	Car	N	S	Straight Ahead: Not Out Of Control				Side	
																							Colliding	Bus	N	S	Overtaking: Cut In From Right						
	1.44	L	1.50		0.00		06/11/2014	Thursday	0900	PDO Minor	2014076246	Midblock	Daylight	Dry		No Sign Or Control		Straight				Sideswipe Same Dirn	On Cway	37:Same Dirn: Change Lanes - Left	Target	Car	N	S	Straight Ahead: Not Out Of Control				Side
																							Colliding		N	S	Overtaking: Cut In From Right						
	1.50	L	1.56				31/08/2013	Saturday	1710	PDO Minor	2013764216	Midblock	Daylight	Dry		Intersection Traffic Lights	4-way Intx	Straight				Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	N	S	Stopped: To Avoid Veh				Rear
																							Colliding	Car	N	S	Straight Ahead: Not Out Of Control						
	1.55	L	1.61		0.00		11/12/2013	Wednesday	1330	PDO Minor	2013866394	Midblock	Daylight	Dry		No Sign Or Control		Straight				Sideswipe Same Dirn	On Cway	36:Same Dirn: Change Lanes - Right	Target	Utility	N	S	Straight Ahead: Not Out Of Control				Side
																							Colliding	Truck	N	S	Overtaking: Cut In From Left						
	1.63	L	1.69				21/05/2014	Wednesday	1010	PDO Major	2014723444	Midblock	Daylight	Wet	60	No Sign Or Control		Straight	No			Hit Object	On Left Verge After Leaving Cway	72:Off Path On Straight: Off Left Cway Obj	Colliding	Truck	N	S	Swerving: To Avoid Veh	Kerb When Stated As Cause	Fence		
	1.64	L	1.70		0.00		17/04/2012	Tuesday	0810	PDO Major	2012809667	Midblock	Daylight	Dry	60	No Sign Or Control		Curve				Sideswipe Same Dirn	On Cway	37:Same Dirn: Change Lanes - Left	Target	Car	N	S	Stopped: To Avoid Veh				Side
																							Colliding	Car	N	S	Overtaking: Cut In From Right						
							07/11/2014	Friday	1500	PDO Major	2014038833	Midblock	Daylight	Dry		No Sign Or Control		Straight				Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	N	S	Stopped: To Avoid Veh				Rear
																							Colliding		N	S	Straight Ahead: Not Out Of Control						

Detailed Crash History



Road	SLK	CWY	True Dist	Loc End Date	Dist Error	Intersection	Date	Day	Time	Severity	Crash No.	Type	Light Cond	Road Cond	Speed Limit	Traffic Control	Road Feature	Road Alignment	Speed Factor	MR Nature	Location	RUM	Unit	Unit Type	From Dir	To Dir	Veh/Ped Move	First Object Hit	Second Object Hit	Third Object Hit	Target Impact Point
	1.64	L	1.70				23/08/2013	Friday	1705	Medical	2013756925	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target		N	S	Stopped: To Avoid Veh				Rear
																							Colliding		N	S	Straight Ahead: Not Out Of Control				
	1.67	L	1.73				29/03/2012	Thursday	1400	PDO Major	2012806374	Midblock	Daylight	Dry	60	No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding	Car	N	S	Straight Ahead: Not Out Of Control				
																							Target	Station Wagon	N	S	Stopped: To Avoid Veh				Rear
	1.68	L	1.74		0.00		12/10/2012	Friday	1207	PDO Minor	2012703993	Midblock	Daylight	Dry	60	No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding	Car	N	S	Straight Ahead: Not Out Of Control				
																							Target	Car	N	S	Stopped: Reasons Unknown				Rear
	1.70	L	1.76				01/04/2016	Friday	0130	PDO Major	2016105405	Midblock		Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Truck	N	S	Stopped: To Avoid Veh				Rear
																							Colliding	Truck	N	S	Straight Ahead: Not Out Of Control				
	1.75	L	1.81		0.00		22/07/2015	Wednesday	1650	PDO Minor	2015216973	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	N	S	Straight Ahead: Not Out Of Control				Rear
																							Colliding	Utility	N	S	Straight Ahead: Not Out Of Control				
	1.77	L	1.83		0.00		20/09/2016	Tuesday	1720	PDO Major	2016283426	Midblock	Dawn Or Dusk	Dry		No Sign Or Control		Straight		Sideswipe Same Dirn	On Cway	36:Same Dirn: Change Lanes - Right	Target	Station Wagon	N	S	Overtaking: Cut In From Left				Side
																							Colliding	Car	N	S	Straight Ahead: Not Out Of Control				
	1.78	L	1.84		0.00		27/03/2016	Sunday	1600	PDO Major	2016110795	Midblock	Daylight	Dry		No Sign Or Control		Straight		Head On	On Cway After Xing Median Strip	21:Opposite Dirn: Head On	Target	Station Wagon	N	S	Straight Ahead: Not Out Of Control				Side
																							Colliding	Station Wagon	S	N	Out Of Control: Other				
	1.87	L	1.93				05/04/2012	Thursday	1830	PDO Minor	2012067822	Midblock	Dark - Street Lights On	Dry		No Sign Or Control		Straight			On Cway	45:Manoeuv: Reversing In Traffic	Target	Car	N	S	Stopped: To Avoid Veh				Front
																							Colliding	Car	S	N	Reversing Or Rolling Back: Straight				
	2.02	L	2.08				02/09/2015	Wednesday	1735	PDO Major	2015264293	Midblock	Dawn Or Dusk	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	N	S	Stopped: To Avoid Veh				Rear
																							Colliding	Car	N	S	Straight Ahead: Not Out Of Control				
	2.11	L	2.17				08/01/2016	Friday	1605	PDO Minor	2016010500	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	N	S	Stopped: To Avoid Veh				Rear
																							Colliding		N	S	Straight Ahead: Not Out Of Control				
	2.16	L	2.22				07/09/2013	Saturday	1420	Medical	2013758443	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target		N	S	Straight Ahead: Not Out Of Control				Side

Detailed Crash History



Road	SLK	CWY	True Dist	Loc End Date	Dist Error	Intersection	Date	Day	Time	Severity	Crash No.	Type	Light Cond	Road Cond	Speed Limit	Traffic Control	Road Feature	Road Alignment	Speed Factor	MR Nature	Location	RUM	Unit	Unit Type	From Dir	To Dir	Veh/Ped Move	First Object Hit	Second Object Hit	Third Object Hit	Target Impact Point	
																							Colliding	Utility	N	S	Overtaking: Passing On Left					
							21/11/2013	Thursday	1110	PDO Minor	2013845991	Midblock	Daylight	Dry		No Sign Or Control		Straight			Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	N	S	Straight Ahead: Not Out Of Control				Rear
																							Colliding		N	S	Straight Ahead: Not Out Of Control					
	2.29	S	2.35				21/08/2014	Thursday	1545	PDO Major	2014819915	Midblock	Daylight	Wet		No Sign Or Control	3-way Intx (T-junction)	Curve			Rear End	On Cway	32:Same Dirn: Same Lane Left Rear	Target		S	W	Straight Ahead: Not Out Of Control				Rear
																							Colliding	Bus	S	N	Straight Ahead: Not Out Of Control					
	2.34	S	2.40		0.00		25/07/2016	Monday	1540	PDO Major	2016238000	Midblock	Daylight	Dry		No Sign Or Control	Driveway	Straight			Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding	Car	N	S	Straight Ahead: Not Out Of Control				
																							Target		N	S	Stopped: To Avoid Veh				Rear	
	2.35	S	2.41		0.00		03/05/2012	Thursday	1750	Medical	2012808525	Midblock	Dark - Street Lights Off	Dry	60	No Sign Or Control		Straight			Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	N	S	Stopped: To Avoid Veh				Rear
																							Colliding	Truck	N	S	Straight Ahead: Not Out Of Control					
	2.36	S	2.42				29/08/2013	Thursday	0700	PDO Minor	2013166523	Midblock	Daylight	Wet	60	No Sign Or Control		Straight			Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding	Truck	S	N	Straight Ahead: Not Out Of Control				
																							Target	Car	S	N	Stopped: To Avoid Veh				Rear	
	2.38	S	2.44		0.00		06/05/2013	Monday	1205	PDO Major	2013706584	Midblock	Daylight	Dry		No Sign Or Control		Straight			Sideswipe Same Dirn	On Cway	42:Manoeuv: Leaving Parking	Target	Prime Mover	S	N	Straight Ahead: Not Out Of Control				Side
																							Colliding	Car	S	N	Unparking: Forward					
	2.40	S	2.46				21/06/2013	Friday	2130	PDO Minor	2013135443	Midblock	Dark - Street Lights On	Dry	60	No Sign Or Control	Driveway	Straight				On Cway	96:Misc: Parked Car Ran Away	Colliding	Utility	W	E	Driverless Veh				
																							Target	Car	S	N	Straight Ahead: Not Out Of Control				Side	
	2.40	S	2.46		0.00		18/11/2014	Tuesday	0745	PDO Minor	2014099243	Midblock	Daylight	Dry		No Sign Or Control		Straight			Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	S	N	Stopped: To Avoid Veh				Rear
																							Colliding	Car	S	N	Overtaking: Passing On Right					
	2.41	S	2.47		0.00		30/03/2012	Friday	1945	PDO Major	2012806590	Midblock	Dark - Street Lights On	Dry	60	No Sign Or Control		Straight			Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	N	S	Stopped: To Avoid Veh				Rear
																							Colliding	Car	N	S	Straight Ahead: Not Out Of Control					
	2.45	S	2.51				14/08/2013	Wednesday	1705	PDO Minor	2013774495	Midblock	Dawn Or Dusk	Wet		No Sign Or Control		Straight			Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding	Car	N	S	Straight Ahead: Not Out Of Control				
																							Target		N	S	Straight Ahead: Not Out Of Control				Rear	

Detailed Crash History



Road	SLK	CMY	True Dist	Loc End Date	Dist Error	Intersection	Date	Day	Time	Severity	Crash No.	Type	Light Cond	Road Cond	Speed Limit	Traffic Control	Road Feature	Road Alignment	Speed Factor	MR Nature	Location	RUM	Unit	Unit Type	From Dir	To Dir	Veh/Ped Move	First Object Hit	Second Object Hit	Third Object Hit	Target Impact Point
							30/10/2015	Friday	2025	PDO Minor	2015337432	Midblock	Dark - Street Lights On	Wet		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Station Wagon	N	S	Stopped: To Avoid Veh				Rear
																							Colliding	Car	N	S	Straight Ahead: Not Out Of Control				
							31/05/2016	Tuesday	1630	PDO Major	2016176481	Midblock	Daylight	Dry		Intersection Traffic Lights	4-way Intx	Curve		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car			Stopped: To Avoid Veh				Rear
																							Colliding	Car			Straight Ahead: Not Out Of Control				
	2.46	S	2.52		0.00		26/05/2016	Thursday	0830	PDO Major	2016169724	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	S	N	Straight Ahead: Not Out Of Control				Rear
																							Colliding	Car	S	N	Straight Ahead: Not Out Of Control				
	2.48	S	2.54		0.00		04/07/2014	Friday	1610	PDO Major	2014849960	Midblock	Daylight	Wet		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding	Utility	S	N	Out Of Control: Other				
																							Target	Station Wagon	S	N	Stopped: To Avoid Veh				Rear
	2.54	S	2.60				04/05/2012	Friday	1110	Medical	2012808682	Midblock	Daylight	Wet		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding	Car	S	N	Straight Ahead: Not Out Of Control				
																							Target	Car	S	N	Stopped: To Avoid Veh				Rear
							09/01/2014	Thursday	1650	Medical	2014601924	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	S	N	Straight Ahead: Not Out Of Control				Rear
																							Colliding	Car	S	N	Straight Ahead: Not Out Of Control				
	2.54	S	2.60		0.00		01/08/2014	Friday	1555	PDO Major	2014825250	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	N	S	Stopped: To Avoid Veh				Rear
																							Colliding	Station Wagon	N	S	Straight Ahead: Not Out Of Control				
	2.55	S	2.61		0.00		14/09/2016	Wednesday	1430	Medical	2016271121	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	S	N	Stopped: To Avoid Veh				Rear
																							Colliding	Utility	S	N	Straight Ahead: Not Out Of Control				
	2.56	S	2.62		0.00		23/03/2015	Monday	0840	PDO Minor	2015109685	Midblock	Daylight	Dry		No Sign Or Control		Straight		Sideswipe Same Dirn	On Cway	37:Same Dirn: Change Lanes - Left	Target	Car	S	N	Straight Ahead: Not Out Of Control				Side
																							Colliding	Car	S	N	Overtaking: Cut In From Right				
	2.57	S	2.63		0.00		10/11/2015	Tuesday	1710	PDO Major	2015343592	Midblock	Daylight	Dry		No Sign Or Control		Straight		Sideswipe Same Dirn	On Cway	37:Same Dirn: Change Lanes - Left	Colliding	Car	N	S	Overtaking: Cut In From Right				
																							Target		N	S	Straight Ahead: Not Out Of Control				Side
	2.57	S	2.63				08/10/2016	Saturday	1425	PDO Major	2016276076	Midblock	Daylight	Wet		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	S	N	Stopped: To Avoid Veh				Rear

Detailed Crash History



Road	SLK	CWY	True Dist	Loc End Date	Dist Error	Intersection	Date	Day	Time	Severity	Crash No.	Type	Light Cond	Road Cond	Speed Limit	Traffic Control	Road Feature	Road Alignment	Speed Factor	MR Nature	Location	RUM	Unit	Unit Type	From Dir	To Dir	Veh/Ped Move	First Object Hit	Second Object Hit	Third Object Hit	Target Impact Point
																							Colliding	Car	S	N	Straight Ahead: Not Out Of Control				
	2.58	S	2.64		0.00		01/08/2013	Thursday	0755	PDO Major	2013775630	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	S	N	Stopped: To Avoid Veh				Rear
																							Colliding	Panel Van	S	N	Straight Ahead: Not Out Of Control				
							31/08/2016	Wednesday	1730	PDO Major	2016294803	Midblock	Daylight	Dry		No Sign Or Control		Straight		Sideswipe Same Dirn	On Cway	36:Same Dirn: Change Lanes - Right	Target	Utility	N	S	Straight Ahead: Not Out Of Control				Side
																							Colliding	Car	N	S	Overtaking: Cut In From Left				
	2.60	S	2.66		0.00		29/06/2013	Saturday	1145	PDO Major	2013738530	Midblock	Daylight	Dry		No Sign Or Control	Driveway	Straight		Rear End	On Cway	33:Same Dirn: Same Lane Right Rear	Target	Station Wagon	S	E	Stopped: Prepared To Turn Right				Rear
																							Colliding	Car	S	N	Straight Ahead: Not Out Of Control				
	2.62	S	2.68				09/07/2013	Tuesday	1735	PDO Minor	2013134662	Midblock	Dawn Or Dusk	Wet		No Sign Or Control		Straight		Sideswipe Same Dirn	On Cway	37:Same Dirn: Change Lanes - Left	Target	Car	N	S	Straight Ahead: Not Out Of Control				Side
																							Colliding	Panel Van	N	S	Overtaking: Cut In From Right				
							09/07/2013	Tuesday	1750	PDO Major	2013743673	Midblock	Dark - Street Lights On	Wet		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	N	S	Stopped: To Avoid Veh				Rear
																							Colliding		N	S	Straight Ahead: Not Out Of Control				
							03/09/2013	Tuesday	0850	PDO Minor	2013177303	Midblock	Daylight	Dry	60	No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding	Car	S	N	Straight Ahead: Not Out Of Control				
																							Target	Car	S	N	Straight Ahead: Not Out Of Control				Rear
							19/12/2013	Thursday	1417	PDO Major	2013864165	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	N	S	Stopped: To Avoid Veh				Rear
																							Colliding	Panel Van	N	S	Straight Ahead: Not Out Of Control				
	2.62	S	2.68		0.00		07/11/2013	Thursday	1710	PDO Minor	2013836235	Midblock	Daylight	Dry		No Sign Or Control		Straight		Sideswipe Same Dirn	On Cway	37:Same Dirn: Change Lanes - Left	Target	Station Wagon	N	S	Straight Ahead: Not Out Of Control				Side
																							Colliding	Utility	N	S	Overtaking: Cut In From Right				
	2.64	S	2.70		0.00		10/01/2013	Thursday	1600	PDO Major	2013605670	Midblock	Daylight	Dry	60	No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	N	S	Stopped: To Avoid Veh				Rear
																							Colliding	Car	N	S	Straight Ahead: Not Out Of Control				
	2.65	S	2.71		0.00		21/01/2016	Thursday	1710	PDO Major	2016030822	Midblock	Daylight	Dry		No Sign Or Control		Straight		Sideswipe Same Dirn	On Cway	36:Same Dirn: Change Lanes - Right	Colliding	Motor Cycle	N	S	Straight Ahead: Not Out Of Control				

Detailed Crash History



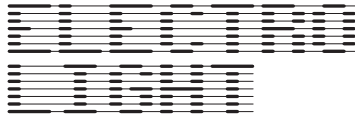
Road	SLK	CWY	True Dist	Loc End Date	Dist Error	Intersection	Date	Day	Time	Severity	Crash No.	Type	Light Cond	Road Cond	Speed Limit	Traffic Control	Road Feature	Road Alignment	Speed Factor	MR Nature	Location	RUM	Unit	Unit Type	From Dir	To Dir	Veh/Ped Move	First Object Hit	Second Object Hit	Third Object Hit	Target Impact Point
																							Target	Car	N	S	Overtaking: Cut In From Left				Side
	2.68	S	2.74		0.00		28/02/2015	Saturday	1555	PDO Major	2015119920	Midblock	Daylight	Dry		No Sign Or Control		Straight		Sideswipe Same Dirn	On Cway	36:Same Dirn: Change Lanes - Right	Target	Car	S	N	Straight Ahead: Not Out Of Control				Side
																						Colliding	Utility	S	N	Overtaking: Cut In From Left					
	1.23	R	1.23				14/11/2014	Friday	0850	PDO Major	2014089502	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	S	N	Stopped: By Congestion				Rear
																						Colliding	Car	S	N	Straight Ahead: Not Out Of Control					
	1.25	R	1.25				10/07/2012	Tuesday	1800	PDO Major	2012620855	Midblock	Dark - Street Lights On	Wet	60	No Sign Or Control		Curve		Sideswipe Same Dirn	On Cway	37:Same Dirn: Change Lanes - Left	Target	Station Wagon	S	N	Straight Ahead: Not Out Of Control				Side
																						Colliding	Car	S	N	Overtaking: Cut In From Right					
							07/01/2013	Monday	1455	PDO Minor	2013614895	Midblock	Daylight	Dry	60	No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding	Car	S	N	Straight Ahead: Not Out Of Control				
																						Target	Car	S	N	Stopped: Other				Rear	
	1.26	R	1.26				11/12/2012	Tuesday	1120	PDO Major	2012248422	Midblock	Daylight	Dry		No Sign Or Control		Straight		Sideswipe Same Dirn	On Cway	36:Same Dirn: Change Lanes - Right	Colliding	Utility	S	N	Straight Ahead: Not Out Of Control				
																						Target	Car	S	N	Overtaking: Cut In From Left				Rear	
	1.28	R	1.28				21/12/2013	Saturday	1000	PDO Major	2013872311	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Bus	S	N	Stopped: To Avoid Veh				Rear
																						Colliding	Car	S	N	Straight Ahead: Not Out Of Control					
	1.39	R	1.39				06/02/2015	Friday	1145	Medical	2015037681	Midblock	Daylight			No Sign Or Control				Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding	Car			Straight Ahead: Not Out Of Control				
																						Target	Car			Straight Ahead: Not Out Of Control				Rear	
	1.54	R	1.60		0.00		15/11/2016	Tuesday	1515	PDO Minor	2016346301	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	N	S	Straight Ahead: Not Out Of Control				Rear
																						Colliding	Utility	N	S	Straight Ahead: Not Out Of Control					
	1.55	R	1.61				17/01/2012	Tuesday	0815	PDO Major	2011828785	Midblock	Daylight	Dry	60	No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding	Utility	S	N	Straight Ahead: Not Out Of Control				
																						Target	Car	S	N	Stopped: To Avoid Veh				Rear	
	1.61	R	1.67				26/07/2012	Thursday	1545	PDO Major	2012642614	Midblock	Daylight	Dry	60	No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Station Wagon	N	S	Stopped: To Avoid Veh				Rear
																						Colliding	Car	N	S	Straight Ahead: Not Out Of Control					

Detailed Crash History



Road	SLK	CWY	True Dist	Loc End Date	Dist Error	Intersection	Date	Day	Time	Severity	Crash No.	Type	Light Cond	Road Cond	Speed Limit	Traffic Control	Road Feature	Road Alignment	Speed Factor	MR Nature	Location	RUM	Unit	Unit Type	From Dir	To Dir	Veh/Ped Move	First Object Hit	Second Object Hit	Third Object Hit	Target Impact Point
							12/12/2013	Thursday	0700	PDO Major	2014009400	Midblock	Daylight	Dry	60	No Sign Or Control		Straight		Sideswipe Same Dirn	On Cway	36:Same Dirn: Change Lanes - Right	Target	Car	S	N	Straight Ahead: Not Out Of Control				Side
																							Colliding	Car	S	N	Overtaking: Cut In From Left				
	1.67	R	1.73		0.00		24/11/2016	Thursday	1745	Medical	2016331870	Midblock	Daylight	Dry		No Sign Or Control		Straight		Sideswipe Same Dirn	On Cway	36:Same Dirn: Change Lanes - Right	Target	Station Wagon	S	N	Straight Ahead: Not Out Of Control				Side
																							Colliding	Car	S	N	Overtaking: Cut In From Left				
	1.89	R	1.95				25/05/2016	Wednesday	0840	PDO Major	2016167366	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Car	S	N	Stopped: To Avoid Veh				Rear
																							Colliding	Station Wagon	S	N	Straight Ahead: Not Out Of Control				
	1.94	R	2.00				12/11/2015	Thursday	0740	PDO Major	2015330071	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding	Car	S	N	Straight Ahead: Not Out Of Control				
																							Target	Station Wagon	S	N	Straight Ahead: Not Out Of Control				Rear
	2.02	R	2.08				09/02/2012	Thursday	1530	PDO Minor	2012031890	Midblock	Daylight	Dry	60	No Sign Or Control		Straight		Sideswipe Same Dirn	On Cway	35:Same Dirn: Parallel Lanes - S/swipe	Colliding	Car	S	N	Swerving: To Avoid Veh				
																							Target	Truck	S	N	Straight Ahead: Not Out Of Control				Side
	2.05	R	2.11				03/03/2015	Tuesday	0900	Medical	2015057373	Midblock	Daylight	Dry		No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Target	Station Wagon	S	N	Stopped: To Avoid Veh				Rear
																							Colliding	Car	S	N	Straight Ahead: Not Out Of Control				
	2.14	R	2.20				21/08/2012	Tuesday	0830	PDO Minor	2012650885	Midblock	Daylight	Wet	60	No Sign Or Control		Straight		Rear End	On Cway	31:Same Dirn: Same Lane Rear End	Colliding	Car	S	N	Straight Ahead: Not Out Of Control				
																							Target	Car	S	N	Stopped: To Avoid Veh				Rear

APPENDIX D – LIGHTING ASSESSMENT



Vicinity Centres

LIGHTING IMPACT ASSESSMENT

OUTDOOR SIGNAGE AT LOT 2000 (NO. 366) ALBANY HWY,

VICTORIA PARK, WA

22nd February 2018
Ref 2136

Lighting Impact Assessment Outdoor Signage at Lot 2000 (No. 366) Albany Highway, Victoria Park, Western Australia

DATE	REV	COMMENT	PREPARED BY	CHECKED BY
22/02/18	REV B	For Information	DSM	RS

Electrolight Australia Pty Ltd
ABN: 44 600 067 392

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www.electrolight.com

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1. INTRODUCTION

Electrolight has been appointed by Vicinity Centres to undertake a Lighting Impact Assessment on the proposed digital signage to be installed at Lot 2000 (No. 366) Albany Hwy, Victoria Park, Western Australia.

This report will assess the proposed digital signage and will report on compliance with AS4282-1997 Control of the Obtrusive Effects of Outdoor Lighting and the Western Australia Main Roads “Policy and Application Guidelines for Advertising Signs”.

2. DEFINITIONS

2.1 Illuminance (E)

The physical measure of illumination is illuminance. It is defined as the luminous flux arriving at a surface divided by the area of the illuminated surface. Unit: lux (lx); $1 \text{ lx} = 1 \text{ lm/m}^2$.

(a) Horizontal illuminance (E_h): The value of illuminance on a designated horizontal plane

(b) Vertical illuminance (E_v): The value of illuminance on a designated vertical plane

Where the vertical illuminance is considered in the situation of potentially obtrusive light at a property boundary it is referred to as environmental vertical illuminance (E_{ve}).

2.2 Luminance (L)

The physical quantity corresponding to the brightness of a surface (e.g. a lamp, luminaire or reflecting material such as the road surface) when viewed from a specified direction. SI Unit: candela per square metre (cd/m^2) – also referred to as “nits”.

2.3 Luminous Intensity (I)

The concentration of luminous flux emitted in a specified direction. Unit: candela (cd).

2.4 Obtrusive Light

Spill Light which, because of quantitative, directional or spectral attributes in a given context, gives rise to annoyance, discomfort, distraction or a reduction in the ability to see essential information.

2.5 Threshold Increment

The measure of disability glare expressed as the percentage increase in contrast required between a standard object and its background (the carriageway) for it to be seen equally as well with the source of glare present as with it absent, derived in the specified manner. This metric is directly related to Veiling Luminance.

NOTE: The required value is a maximum for compliance of the lighting scheme.

2.6 AGI32 Light Simulation Software

AGI32 (by U.S. company Lighting Analysts) is an industry standard lighting simulation software package that can accurately model and predict the amount of light reaching a designated surface or workplane. AGI32 has been independently tested against the International Commission On Illumination (CIE) benchmark, CIE 171:2006, Test Cases to Assess the Accuracy of Lighting Computer Programs.

3. SITE DESCRIPTION AND SCOPE

The location of the proposed digital signage is on the roof of the building at Lot 2000 (No. 366) Albany Hwy, Victoria Park, facing north west. The total active display (illuminated) area of the digital sign is 44.24m².

The proposed digital signage is illuminated using LEDs installed within the front face. The brightness of the LEDs shall be controlled to provide upper and lower thresholds as required as well as automatically via a local light sensor to adjust to ambient lighting conditions.

For the purpose of this report the proposed manufacturer of the digital sign is noted as Absen, with performance parameters as outlined in Appendix B. An alternative digital signage manufacturer may be used for this installation as long as they have equivalent lighting and performance characteristics and are commissioned as described in this report.

4. DESIGN GUIDELINES AND STANDARDS

The lighting impact assessment will review the proposed signage against the following criteria, design guidelines and standards.

- Western Australia Main Roads “Policy and Application Guidelines for Advertising Signs” Document (January 2018). (Refer Appendix C)
- AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting. *

* Although AS 4282-1997 specifically excludes internally illuminated advertising signs/displays in Section 1.1 Scope (b) the Transport Corridor Outdoor Advertising and Signage Guideline (2017) in NSW references AS4282 and requires compliance to this standard. In the absence of any other applicable Australian Standard AS4282 has been adopted for the purposes of this report.

5. LUMINANCE ASSESSMENT

Appendix B of the Western Australia Main Roads “Policy and Application Guidelines for Advertising Signs” Document outlines the maximum allowable daytime, dawn/dusk and night time luminances of electronic signs to exhibit consistent apparent brightness in all lighting conditions (refer to Appendix C).

The proposed digital signage has a maximum brightness capacity of 8000 cd/m², meaning the maximum allowable day time, dawn/dusk and night time dimming levels to comply with the guideline’s luminance requirements are the following:

MAXIMUM LUMINANCE LEVELS FOR DIGITAL ADVERTISEMENTS			
Lighting Condition	Max Dimming Level to achieve compliance #	Max Permissible Luminance (cd/m ²)	Compliant
Daytime Luminance	75 %	6000	✓
Dawn/Dusk	7.5 %	600	✓
Night Time	3.75 %	300	✓

The dimming % is based on a maximum calibrated screen brightness of 8000 cd/m². For the basis of this Report, it is assumed that the dimming level is directly related to the luminance level via a linear relationship.

Appendix B of the Western Australia Main Roads “Policy and Application Guidelines for Advertising Signs” Document also requires that the signage be initially commissioned to half the recommended maximum luminances (as shown in the table below). The sign luminances shall be gradually increased over time to: an appropriate level as agreed with Main Roads.

INITIAL LUMINANCE LEVELS FOR DIGITAL ADVERTISEMENTS			
Lighting Condition	Max Dimming Level to achieve compliance #	Max Permissible Luminance (cd/m ²)	Compliant
Daytime Luminance	37.5%	3000	✓
Dawn/Dusk	3.75%	300	✓
Night Time	1.87%	150	✓

The operator of the screen must not exceed the maximum dimming levels above to comply with the Western Australia Main Roads “Policy and Application Guidelines for Advertising Signs” document. To maintain constant visibility of the signage, the dimming value may increase to the maximum level at certain times of the day (when the sun is directly illuminated the face of the signs). This is to compensate for high levels of light striking the front the face of the sign, which would otherwise dull the image and make it difficult to view.

6. AS4282 ASSESSMENT

The proposed digital signage has been assessed against AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting as outlined in Section 4.

As it is intended that the signage will be illuminated after 11pm, the requirements for curfewed operation under the standard will be applied. The signage is located in a mixed residential and commercial area, therefore the maximum illuminance in the vertical plane parallel to the relevant boundary of adjacent residential properties is limited to 4 lx (as outlined in Table 2.1 of AS4282 for curfewed operation). Under the standard, a value of less than 4 lx is deemed to not affect the visual amenity of local residents.

The nearest building with habitable windows is the apartment complex at 9 Harper St (Refer to Appendix C for plan).

This will form the focus of the obtrusive lighting assessment.

Additionally there is mature vegetation surrounding the apartment complex, which effectively obstructs the spill light from the signage. However the proposed signage (and surrounding environment) were modeled in lighting calculation program AGI32 to determine the effect (if any) of the light spill from the proposed signage assuming that there was no vegetation present.

Photometric data for the screen was based on a diffused light panel (approximating a lambertian emitter) with a luminance corresponding to the 300 cd/m² night time limit outlined in Section 5. Appendix C shows the lighting model and the results of the calculations.

It can be seen from the lighting model that the maximum vertical illuminance on habitable windows is 0 lux across the residences, which is below the allowable maximum of 4 lux.

The Threshold Increment was also calculated for traffic on Shepperton Rd (southbound). The calculation grid was located at 1.5m above ground level, with an approach viewing distance of between 20 m to 190 m from the sign. The calculation results show that the Threshold Increment does not exceed 0.44% on the traffic approach (the allowable maximum under the standard is 20%).

The luminous intensity limits nominated in the standard are only applicable to high intensity point sources such as floodlights and are therefore not relevant for illuminated signage.

It can therefore be seen that the proposed digital signage complies with all relevant requirements of AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting.

In complying with these requirements, the proposed digital signage will not result in unacceptable glare nor will it adversely impact the safety of pedestrians, residents or vehicular traffic. The proposed digital signage will also not cause any reduction in visual amenity to nearby residences or accommodation.

7. SUMMARY

- When commissioned to the maximum dimming levels below, the proposed digital signage at Lot 2000 (No. 366) Albany Hwy, Victoria Park, will comply with the Western Australia Main Roads “Policy and Application Guidelines for Advertising Signs” Document.

MAXIMUM LUMINANCE LEVELS FOR DIGITAL ADVERTISEMENTS			
Lighting Condition	Max Dimming Level to achieve compliance #	Max Permissible Luminance (cd/m2)	Compliant
Daytime Luminance	75 %	6000	✓
Dawn/Dusk	7.5 %	600	✓
Night Time	3.75 %	300	✓

The dimming % is based on a maximum calibrated screen brightness of 8000 cd/m2. For the basis of this Report, it is assumed that the dimming level is directly related to the luminance level via a linear relationship.

- The signage shall be initially commissioned to half the recommended maximum luminances (as shown in the table below). The sign luminances shall be gradually increased over time to an appropriate level as agreed with Main Roads.

INITIAL LUMINANCE LEVELS FOR DIGITAL ADVERTISEMENTS			
Lighting Condition	Max Dimming Level to achieve compliance #	Max Permissible Luminance (cd/m2)	Compliant
Daytime Luminance (All Signage)	37.5%	3000	✓
Dawn/Dusk (All Signage)	3.75%	300	✓
Night Time (All Signage)	1.87%	150	✓

- The proposed illuminated signage complies with all relevant requirements of AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting. In complying with these requirements, the proposed signage will not result in unacceptable glare nor will it adversely impact the safety of pedestrians, residents or vehicular traffic. The proposed signage will also not cause any reduction in visual amenity to nearby residences or accommodation.

8. DESIGN CERTIFICATION

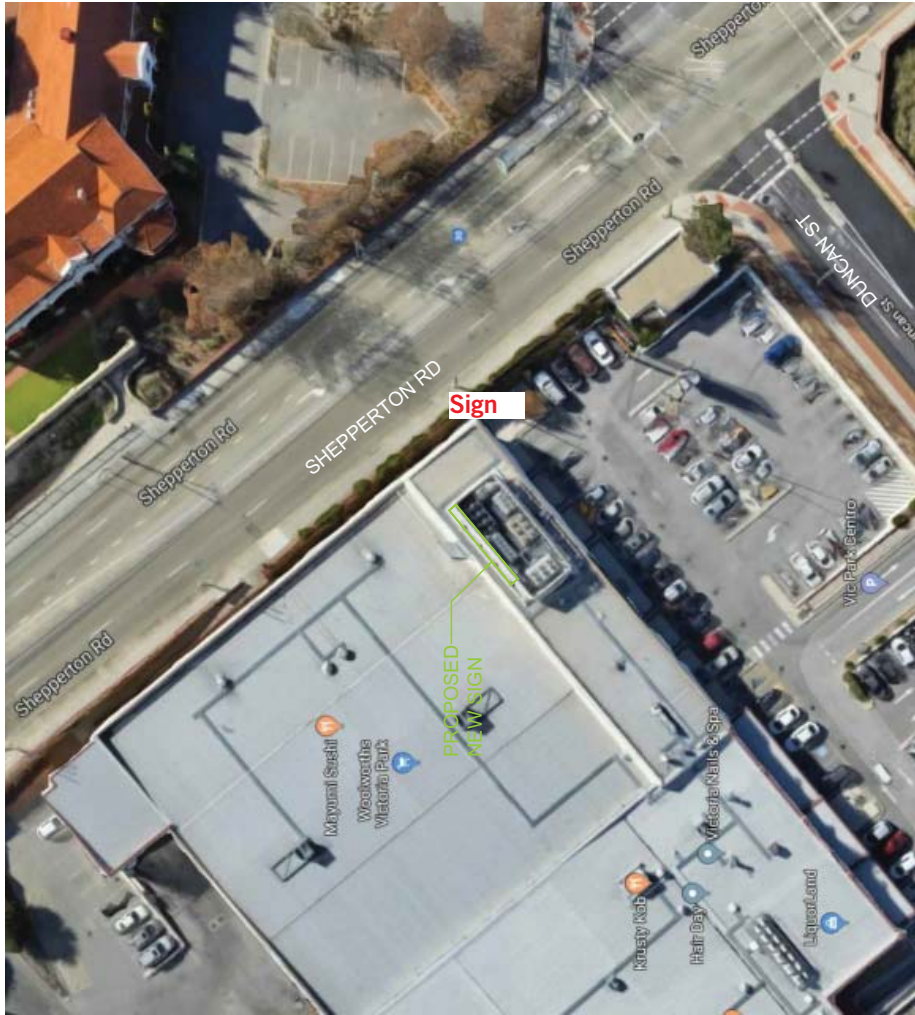
The proposed digital signage to be installed at Lot 2000 (No. 366) Albany Hwy, Victoria Park, Western Australia, if commissioned according to this report, will comply with the following criteria, guidelines and standards:

- Western Australia Main Roads “Policy and Application Guidelines for Advertising Signs” Document (January 2018).
- AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting.

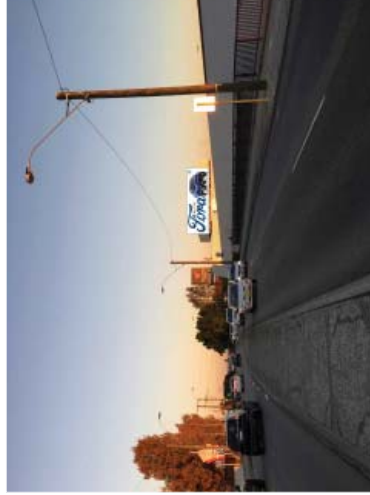
A handwritten signature in black ink, appearing to read 'Ryan Shamier', with a horizontal line underneath.

Ryan Shamier MIES
Senior Lighting Designer
Electrolight Australia
22 February 2018

APPENDIX A
SIGNAGE LOCATION PLAN



⊙ AERIAL PHOTO
SCALE 1:500 APP.



⊙ PROPOSED PHOTO



Outdoor Elements
 59 Derrin Drive, Werribee, VIC 3030.
 Tel: (03) 9394 1111, Fax: (03) 9394 1555
www.oeel.com.au

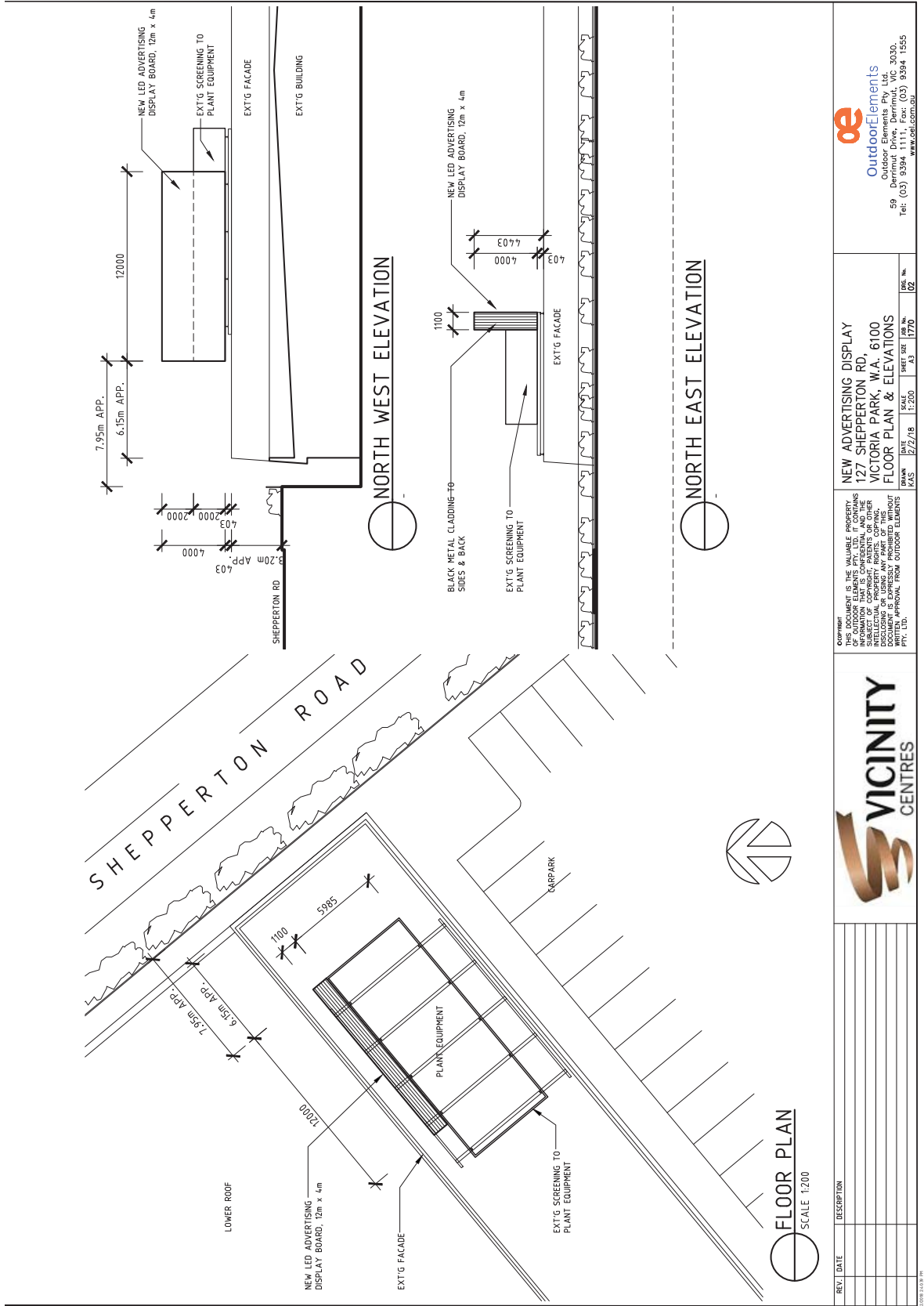
NEW ADVERTISING DISPLAY
 127 SHEPPERTON RD,
 VICTORIA PARK, W.A. 6100
 PHOTOS
 DRAWN 2/2/18 DATE 1:500 SCALE A3 SHEET SIZE JOB NO. 1770 DRG. NO. 01

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REV.	DATE	DESCRIPTION

APPENDIX A
NORTH WEST CORNER



FLOOR PLAN
SCALE 1:200

NEW ADVERTISING DISPLAY
127 SHEPPERTON RD,
VICTORIA PARK, W.A. 6100
FLOOR PLAN & ELEVATIONS

DATE 2/2/18
SCALE 1:200
DRAWN A3
CHECKED A3
JOB NO. 1770
Dwg. No. 02



REV.	DATE	DESCRIPTION

OutdoorElements
59 Derrin Street, Perth, W.A. 6000
Tel: (03) 9394 1111, Fax: (03) 9394 1555
www.oeel.com.au

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APPENDIX B
DIGITAL SIGNAGE SPECIFICATION

SCREEN CONFIGURATION

Module			
Dimensions (w x h) (mm)	320 x 320	Resolution (w x h)	30 x 30
Pixel pitch (mm)	10.66	Pixel Density (pixels/m2)	8800
LED Lamp	Absen Lamp	Pixel Configuration	1R1G1B
Standard Panel			
Dimensions(w x h x d)(mm)	640 x 960 x 112	Module Quantity	6
Physical Resolution (w x h)	60 x 90	Physical Pixels (total)	5400
Weight/Panel (kg)	22	Material	ALUMINUM
Certificate	CE	Structure	Fixed installation
Average Power/sqm(watts)	125	Max Power/sqm(watts)	375
Display Data			
ITEM	Width	Height	total
Panel Quantity(pcs)	18	4	76
Screen Area Dimension(m)	11.52	3.84	44.24
Display Resolution(dots)	1140	360	410400
Total Net Weight (kgs)	1584		
Total Average Power(watts)	5530	Total Max Power(watts)	16590

TECHNICAL SPECIFICATION

Parameter	Value
Brightness	8000 cd/m ²
Viewing Angle	Horizontal 120 deg. Vertical 60 deg.
Minimum Viewing Distance	10 meters
Brightness Control	256 level
Gray scale	65536 level
Refresh frequency	>1920 Hertz
Driving mode	1/5
Input power frequency	50 or 60 Hertz
Input Voltage	110~240 Volt
Blind spot rate	< 1/10000
Lifetime at 50% brightness	100000 hours
Ingress Protection	Front IP65, Rear IP54
Operating temperature	-20 ~ +50 °C
Operating humidity	10% ~ 90%
Control distance	CAT5 cable: <100 m; Single mode fiber: <10 km
Signal input format	AV, S-Video, VGA, DVI, YPbPr, HDMI, SDI

APPENDIX C

Luminance and Illumination of Electronic Advertising Signs

Safety and amenity

It is important that electronic billboards exhibit consistent apparent brightness in all lighting conditions, by maintaining a consistent ratio between the ambient light (illuminance) and light emitted by the billboard (luminance).

This allows the billboard to be easily read and reduces the time taken for a motorist to view the billboard content. Signs brighter than the ambient conditions may cause greater distraction and risk to drivers due to:

- Averting a motorists attention from important traffic devices / instructions.
- Temporary visual impairment where the difference in sign luminance and ambient light is disparate.

Due to the fast rate of change in ambient light during dusk and dawn periods, particular attention needs to be given to the luminance levels that are output during these periods to ensure that a consistent apparent brightness is maintained.

Any change to brightness levels should be applied during a message transition, not while an image is being displayed. This removes the risk that a motorist will be distracted by changing sign brightness.

Maximum Luminance

The following values are suggested *maximum* values for the varying ambient lighting conditions. The final luminance levels are to be determined based on the site specific requirements, including the orientation of the sign and shading around the sign.

- Daytime - 6000 cd/m²
- Dawn/Dusk - 600 cd/m²
- Night - 300 cd/m²

Commissioning Levels

It is required that when a new device is being commissioned, the initial luminance values be set to *half* the recommended maximum values outlined above, and gradually increased to an appropriate level as agreed to by Main Roads WA.

If required, the owner/operator of the billboard is responsible for shielding the electronic billboard to ensure that it does not cause a nuisance to surrounding properties.

APPENDIX D

OBTRUSIVE LIGHTING AND THRESHOLD INCREMENT CALCULATIONS

Calculation Summary			
Label	CalcType	Units	Max
Shepperton Rd	Obtrusive Light - TI	%	0.44



APPENDIX D

OBTRUSIVE LIGHTING AND THRESHOLD INCREMENT CALCULATIONS

Calculation Summary			
Label	CalcType	Units	Max
9 Harper St_Cd_Seg1	Obtrusive Light - Cd	N.A.	0
9 Harper St_Cd_Seg2	Obtrusive Light - Cd	N.A.	0
9 Harper St_Ill_Seg1	Obtrusive Light - Ill	Lux	0.00
9 Harper St_Ill_Seg2	Obtrusive Light - Ill	Lux	0.00



Image: Light Model - Plan showing light spill calculation to the closest residential windows.

APPENDIX D
COMPLIANCE REPORT

Obtrusive Light - Compliance Report

AS 4282-1997, Post-Curfew, Commercial
Filename: 180214 - Vic Park
14/02/2018 10:42:43 AM

Illuminance

Maximum Allowable Value: 4 Lux

Calculations Tested (2):

<u>Calculation Label</u>	<u>Test Results</u>	<u>Max. Illum.</u>
9 Harper St_III_Seg1	PASS	0.00
9 Harper St_III_Seg2	PASS	0.00

Luminous Intensity (Cd) At Vertical Planes

Maximum Allowable Value: 2500 Cd

Calculations Tested (2):

<u>Calculation Label</u>	<u>Test Results</u>
9 Harper St_Cd_Seg1	PASS
9 Harper St_Cd_Seg2	PASS

Threshold Increment (TI)

Maximum Allowable Value: 20 %

Calculations Tested (1):

<u>Calculation Label</u>	<u>Adaptation Luminance</u>	<u>Test Results</u>
Shepperton Rd	10	PASS