urbanconcepts

YOUR DEVELOPMENT VOICE

Revised Statement of Environmental Effects

MARCH 2023

M2 Motorway Lane Cove Bridge Overpass Digital Signage and Associated Works

Prepared for
Manboom Signage Partnership Pty Ltd

Prepared by
Urban Concepts

suite 1a gunshot alley suakin drive mosman 2088 po box 495 milsons point NSW 1565
t 61 2 **9964 9655** e **info@urbanconcepts.net.au** w **urbanconcepts.net.au**
Ambaska Holdings Pty Ltd T/A Urban Concepts ACN 074 171 065 ABN 96 074 171 065

Contents

1. INTRODUCTION

This Statement of Environmental Effects (SEE) has been prepared to accompany a Development Application (DA) for a new digital advertising sign and associated cladding works on the western elevation of the Lane Cove Road overpass on the Hills M2 Motorway (M2) at Macquarie Park. There is an existing digital advertising sign, that became operational in 2017 erected on the eastern elevation of the overpass. This SEE has been prepared by Urban Concepts on behalf of the Applicant, Manboom Signage Partnership Pty Ltd (Manboom).

The M2 is owned by the NSW State Government Agency Transport for NSW (TfNSW). The Hills Motorway Limited and the Transurban Group manage and operate the M2 on behalf of the NSW Government. In 1999, Hills Motorway Limited entered into an agreement with the former NSW Roads and Traffic Authority (NSW RTA) to display advertising along the M2. In the same year, the former RTA authorised Transurban to licence the advertising rights to the M2 Corridor to Manboom. Under this agreement up to forty five (45) advertising faces can be displayed along the 21 kilometre corridor. A letter from Transurban confirming their agreement and authorising Manboom to progress this DA is submitted under seperate cover.

The M2 Corridor Land is classified as Transport Corridor Land under Chapter 3 of the Industry and Employment State Environmental Planning Policy 2021 (IESEPP 2021). The NSW Minister for Planning is the Consent Authority for this DA pursuant to Clause 3.10 of Chapter 3. The NSW Department of Planning and Environment (NSW DPE) will assess the DA on behalf of the Minister.

The site of the proposed digital sign, is zoned SP2 Special Infrastructure (Classified Road) under the Ryde Local Environmental Plan 2014 (RLEP 2014). Signage is a prohibited land use in the SP2 Zone. This application is submitted under the provisions of Clause 3.14(1)(c) of Chapter 3 which enables an advertisement to be displayed on M2 Corridor land notwithstanding it is prohibited in the land use zone that applies to the site under another environmental planning instrument. Legal advice confirming that the provisions of Clause 3.14(I)(c) can be relied upon for this application is provided in Appendix A of this SEE. Clause 3.14 in its entirety is reproduced below:

3.14 Transport Corridor Land

(1) Despite section 3.8(1) and the provisions of any other environmental planning instrument, the display of an advertisement on transport corridor land is permissible with development consent in the following cases—

(a) the display of an advertisement by or on behalf of RailCorp, NSW Trains, Sydney Trains, Sydney Metro or TfNSW on a railway corridor,

(b) the display of an advertisement by or on behalf of TfNSW on—

(i) a road that is a freeway or tollway (under the Roads Act 1993) or associated road use land that is adjacent to such a road, or

(ii) a bridge constructed by or on behalf of TfNSW on any road corridor, or

(iii) land that is owned, occupied or managed by TfNSW and that is within 250 metres of a classified road,

(c) the display of an advertisement on transport corridor land comprising a road known as the Sydney Harbour Tunnel, the Eastern Distributor, the M2 Motorway, the M4 Motorway, the M5 Motorway, the M7 Motorway, the Cross City Tunnel or the Lane Cove Tunnel, or associated road use land that is adjacent to such a road.

(2) Before determining an application for consent to the display of an advertisement in such a case, the Minister for Planning may appoint a design review panel to provide advice to the Minister concerning the design quality of the proposed advertisement.

(3) The Minister must not grant consent to the display of an advertisement in such a case unless—

(a) the advice of any design review panel appointed by the Minister has been considered by the Minister, and

(b) the Minister is satisfied that the advertisement is consistent with the Guidelines.

(4) This section does not apply to the display of an advertisement if the Minister determines that display of the advertisement is not compatible with surrounding land use, taking into consideration any relevant provisions of the Guidelines.

The proposed digital screen will be fully contained within the profile of the overpass bridge elevation. The total active advertising display area of the digital screen will be 12.48 metres x 3.2 metres. The total advertising display area inclusive of the frame is 41.51 of 39.936 square metres (41.76 square metres inclusive of a logo). A description of the proposed digital advertisement together with details of its intended operation are detailed in Section 3 of this SEE.

This SEE addresses the statutory requirements and the broader planning and environmental considerations of relevance to this proposal as required under state and local planning instruments, including an assessment of the matters for consideration prescribed in Section 4.15(1) of the Environmental Planning and Assessment Act 1979.

The SEE Report format comprises the following sections:

- Section 1 This introduction, and background information on the signage strategy for the M2 Motorway and the application of digital technology by the Out Of Home (OOH) sector.
- Section 2 Site description and environmental context.
- Section 3 A description of the proposed works including the proposed LED screen, its operation, illumination levels, content management and the Public Benefit Proposal.
- Section 4 An assessment of the statutory compliance of the proposal against the relevant provisions of Chapter 3 IESEPP 2021, the associated Transport Corridor Outdoor Advertising and Signage Guidelines 2017 and the RLEP 2014.
- Section 5 An assessment of the proposal pursuant to Section 4.15(1) of the Environmental Planning and Assessment Act 1979.
- Section 6 Conclusion and Recommendation for approval of the proposal works.

1.1. Supporting Documentation

This SEE should be read in conjunction with the following documentation:

- Legal Advice confirming application of Chapter 3 Clause 3.14 provisions.
- Development Application Plans and Photomontages Prepared by Dennis Bunt Consulting Engineers detailed in Appendix B.
- Traffic Safety Assessment prepared by Bitzios Consulting detailed in Appendix C.
- Lighting Impact Assessment prepared by Electrolight detailed in Appendix D.
- Correspondence sent to City of Ryde Council in Appendix E.
- A letter providing land owners consent from TfNSW for the lodgement of the application which is submitted under separate cover.

1.2. M2 Motorway Signage Strategy

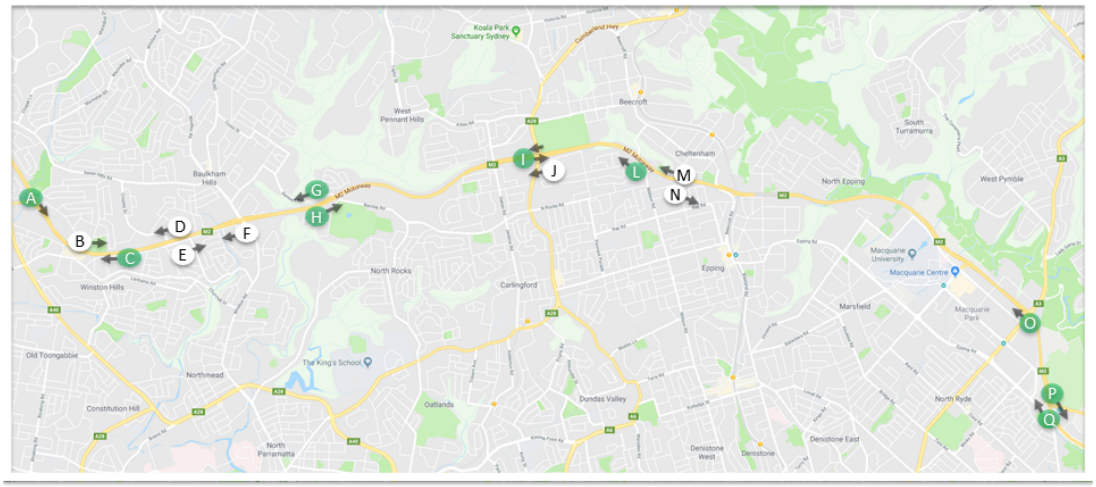
1.2.1. EXISTING ADVERTISING SIGNAGE

Currently there are sixteen (16) advertising signs along the length of the M2. Of these nine (9) are digital screens, and seven (7) are static light box signs. All of the signs regardless of whether they are digital or static lightboxes are illuminated 24 hours. All are located on the road bridges/overpasses that traverse the Motorway. Figure 1.1 details the location of the existing M2 advertising sites.

FIGURE 1.1

EXISTING M2 SIGNAGE LOCATIONS

M2 Map: Static and Digital: Current



Existing Digital Portfolio

Item	QMS ID	Site Address	LGA	Direction	Dimension
A	D113	Langdon Rd Bridge	Hills	EB	12x4
C	D105	Mon St Bridge	Hills	WB	12x4
G	D177	Barclay Road	Hills	WB	12x4
H	D169	Barclay Road	Hills	EB	12x4
I	D41	Pennant Hills Rd Bridge	Hills	EB	12x4
L	D249	Murray Farm	Hornsby	WB	12x4
O	D33	Lane Cove Bridge	Ryde	WB	12x4
P	D145	Delhi Rd Bridge	Ryde	EB	12x4
Q	D153	Delhi Rd Bridge	Ryde	WB	12x4

Existing Static Portfolio

Item	QMS ID	Site Address	LGA	Direction	Dimension
B	26	Gooden Reserve Bridge	Hills	EB	12.66x3.35
D	24	Watkins Rd Bridge	Hills	WB	12.66x3.35
E	23	Watkins Rd Bridge	Hills	EB	12.66x3.35
F	19	Windsor Rd Bridge	Hills	WB	10.06x2.5
J	22	Pennant Hills Rd Bridge	Hills	WB	12.66x3.35
M	29	Kent Street	Hornsby	WB	12.66x3.35
N	28	Kent Street	Hornsby	EB	12.66x3.35

1

Source: Manboom 2022

1.2.2. PROPOSED DIGITAL SIGNAGE

THE M2 DIGITAL SIGNAGE STRATEGY

Over the last year, Manboom and their consultants have undertaken detailed planning and site investigations across the M2 Corridor. These investigations have informed the preparation of the stage 3 digital signage strategy for the Motorway as a continuation of the signage development strategy following the completion of extensive roadworks.

The digital strategy seeks to:

1. **Achieve a balance between inbound and outbound signage locations.**

   At the present time, existing advertising sites along the corridor are concentrated in that part of the Motorway that falls within the Hills Shire. To enable advertisers to capture both long and short stay viewing audiences the strategy aims to correct this imbalance. It has identified additional advertising locations along those parts of the Motorway that are located in the City of Ryde, Hornsby Shire and Hills Shire Local Government Areas.

2. The ability to realise advertising rights in line with the 1999 agreement.

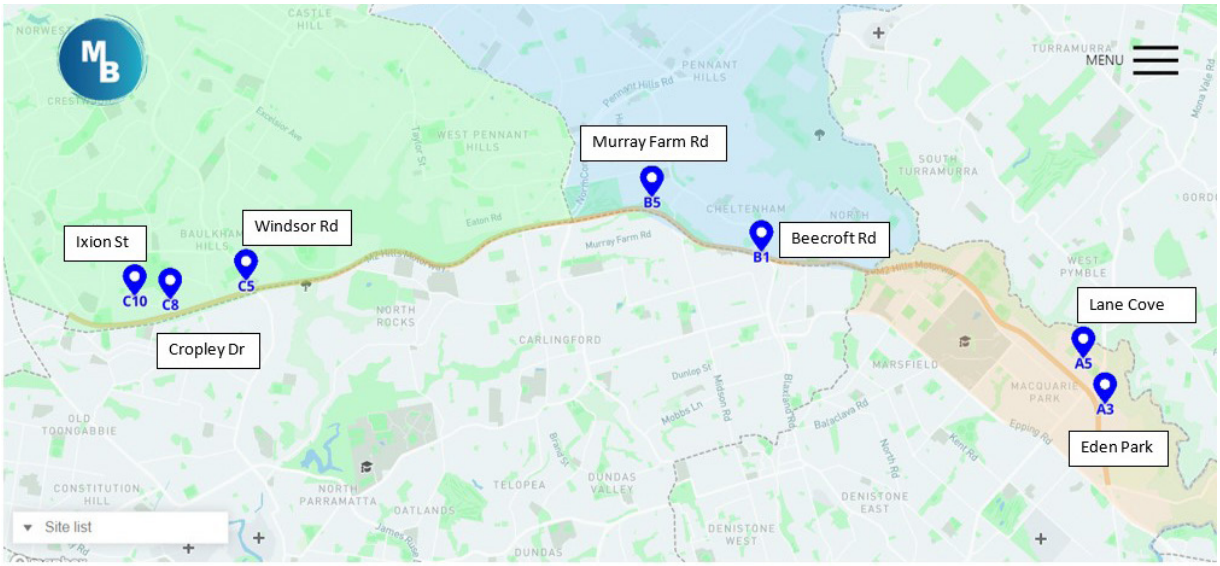
At the current time Manboom has developed sixteen(16) signage faces along the M2 corridor. This represents just thirty five (35) percent of the potential advertising sites available under the 1999 agreement. Manboom has identified an additional seven (7) sites to progress to development application. Should these signs be approved the total number of advertising faces along the Motorway would increase to twenty three (23) or fifty one (51) percent of the available take up, being twelve (12) inbound and eleven (11) outbound. Under the M2 Signage Strategy seven (7) sites will be retained as static light box faces to cater for advertisers who prefer static advertisments over digital colocation.

NEW ADVERTISING SITES BEING PROPOSED ALONG THE M2

The new digital advertising faces being proposed along the M2 Corridor are illustrated in Figure 1.2 and described in Table 1.1. Each of the proposed sites has been through an independent road safety assessment by Bitzios Consulting. As the Motorway is owned by TfNSW it has also undertaken a preliminary Traffic Safety Assessment of each site against the relevant traffic safety criteria prior to issuing land owners consent for the lodgement of this application.

FIGURE 1.2

PROPOSED DIGITAL SIGNAGE LOCATIONS



Source: Manboom 2022

TABLE 1.1

PROPOSED NEW DIGITAL SIGNAGE LOCATIONS

NEW LOCATION	DIRECTION OF TRAVEL	LGA
Eden Gardens, Macquarie Park (freestanding sign)	Outbound	Ryde
Lane Cove Road Bridge	Inbound	Ryde
Beecroft Road ,Cheltenham Bridge	Outbound	Hornsby
Murray Farm Road Bridge	Inbound	Hornsby
Windsor Road Bridge	Inbound	Hills Shire
Cropley Drive Bridge, Baulkham Hills	Inbound	Hills Shire
Ixion Street, Baulkham Hills	Inbound	Hills Shire

 # This site is the subject of this development application

Source: Complied by Urban Concepts 2022

1.3. Pre Lodgement Consultation

1.3.1. Pre Application Consultation with the DPE

To facilitate the preparation of the application and to ensure that it thoroughly addressed matters of concern, a Pre Application Meeting was held with the NSW DPE on 25 May 2022. The key comments arising from that meeting are summarised in Table 1.2.

TABLE 1.2

MINUTES OF PRE APPLICATION MEETING WITH NSW DPE

MATTERS DISCUSSED	APPLICANT COMMENT
1. Planning Approval Pathway The DPE requested the Applicant confirm the ability to rely on Clause 3.14 for the approval pathway for the application.	The Applicant indicated that the land use of signage is a prohibited land use in the SP2 Zone that applies to the Motorway. Clause 3.14 of Chapter 3 enables an advertisement to be displayed on M2 corridor land notwithstanding it is prohibited in the land use zone that applies to the site under another environmental planning instrument. The Applicant has obtained legal advice that indicates the provisions of Clause 13.4 can be relied upon as the approval pathway for this application. The legal advice is reproduced in Appendix A.
2. Bundling of Sites for Lodgement & Assessment The Department indicated that it would manage the assessment of the applications across two teams. One team would assess the applications that fall within the Ryde LGA and the other will assess the applications that fall within the Hills Shire and Hornsby LGA's.	Noted.
3. Pre-Application Liaison with Ryde, Hills Shire and Hornsby Council. The Department supported the Applicant's intention to discuss the applications with the respective Council's notwithstanding that the Minister for Planning is the consent authority for these applications.	A Pre-Application meeting has been requested with each of the Council's. This application falls within the City of Ryde Local Government Area. Refer to the letter sent to the City of Ryde Council in Appendix E.
4. The Public Benefit Offer The provisions of Chapter 3 require that the DA is accompanied by a public benefit offer. The DPE recognises that there is an existing agreement between TfNSW and the respective local councils. Under this agreement Manboom pay an annual monetary contribution to TfNSW to satisfy the public benefit provisions associated with the existing signage along the M2. This contribution is then equally shared between each of the three Councils through which the M2 passes being City of Ryde Council, Hornsby Shire Council and Hills Shire Council. This monetary contribution will be increased to reflect the additional seven (7) signage faces being proposed along the Motorway pending their individual approval.	The Applicants Public Benefit Offer is explained in Section 3.4 of the SEE.

1.3.2. Pre Application Consultation with Ryde City Council

The Applicant has written to the City of Ryde Council and provided details of the Proposal and has offered a meeting. At the time of writing the SEE the meeting had not yet occurred. A copy of the correspondence that was sent to the Council is detailed in Appendix E.

1.3.3. Pre-Application Consultation with Transport for NSW

During the preparation of this application, the Applicant has consulted with the TfNSW Land Use Assessment and Network Safety Services teams. TfNSW has indicated that the application has passed a preliminary traffic safety review.

As TfNSW is the owner of the M2 Motorway, a letter granting land owners consent accompanies this DA under separate cover.

1.4. LED Technology and its Application for Outdoor Advertising

Outdoor advertising is a medium that relies on changeable signs or images. Traditional outdoor advertising billboards have involved the manual changing of copy using printed vinyl skins that are tensioned across support frames. Paint, paper and vinyl are the traditional materials used to display advertising copy. The introduction of digital technology has enabled new non-manual methods for changing static content to be developed, thereby eliminating the waste and landfill that these traditional advertising methods generate.

Since the advent of red, green and blue light emitting diodes in the mid 1990's, the outdoor advertising industry has begun using Light Emitting Diode (LED) technology for its outdoor displays. LED displays are commonly referred to as digital or electronic advertising panels. The application of the technology for out-of-home advertising displays is well advanced overseas and is fast gaining popularity in Australia.

Digital screens are not dissimilar to a regular static sign as they only display static images. The only real difference is the use of technology to change the advertising content which is changed more regularly. The time the static image appears on the screen is called the 'dwell time'. The technology results in a static image that is changed in accordance with a pre-determined play cycle. The proposed digital screen will adopt a dwell time of 25 seconds with a transition time between images of 0.1 seconds. The nominated dwell and transition times comply with the Transport Corridor Adverting and Signage Guidelines 2017 that have been prepared and adopted by the DPE and TfNSW in conjunction with the Outdoor Media Association (OMA).

The digital LED display will not scroll, flash, flicker or feature movie or TV-style pictures. In the event that a malfunction occurs the digital screen is programmed to default to a blank black screen.

The application of digital technology for the purpose of advertising affords long-term benefits that cannot be derived from traditional light box displays. These benefits are:

- LED displays can be dimmed unlike traditional illuminated signs that are either turned on or off.
- The dimming ability of LED screens provides a greater level of control over ambient light levels in the night sky and removes the potential for unwanted light spillage.
- The horizontal and vertical viewing arcs of a digital screen are restricted, thereby providing greater control over a sign's visual and lighting impact.
- The ability to display a wide variety of content enables out of home companies to provide consent authorities with the opportunity to display community and civic related content which effectively improves the reach of public information campaigns.
- Improved occupantional, health and safety outcomes as copy changes occur remotely and do not require contractors to work above the Motorway changing content every four (4) weeks.

1.5. Relevant Digital Advertising Planning Controls

State Environmental Planning Policy No. 64 (SEPP 64) was gazetted on 16 March 2001 and introduced a comprehensive range of provisions to ensure that advertising and signage is well located, compatible with the desired amenity of an area and is of a high quality and finish. SEPP 64 applied to all signage and advertisements that advertise or promote any goods, services or events and any structure that is used for the display of signage. On the 1 March 2022, the NSW Government incorporated the provisions of SEPP 64 into Chapter 3 and Schedule 5 of State Environmental Planning Policy (Industry and Employment 2021) (IESEPP 2021).

This application is being submitted under the provisions of Clause 3.14 of Chapter 3 which enables an advertisement to be displayed on M2 Corridor land notwithstanding it is a prohibited use in the SP2 Zone that applies to the site under the Ryde LEP 2014.

In 2015, the NSW Government acting through the NSW DPE introduced the Draft Transport Corridor Advertising Signage Guidelines 2015 to provide direction on the application of digital technology for advertising signage. The draft Guidelines were publicly exhibited between December 2015 and February 2016 and formally adopted by the NSW DPE in November 2017. The Guidelines introduce traffic safety and illumination controls to ensure that the introduction of digital signs does not give rise to any adverse lighting or traffic safety impacts. A detailed assessment of the proposal against the relevant digital and design criteria is presented in Section 3 and 4 of this SEE.

Accordingly, Chapter 3 of the IESEPP 2021 and the Transport Corridor Advertising Signage Guidelines 2017 are the primary planning controls that apply to this project.

1.6. Section 138 Roads Act 1993

Section 138 of the Roads Act 1993 prohibits the erection of a structure or the carrying out of work in, on or over a 'Public Road' without the concurrence of TfNSW. The M2 Motorway is not considered a 'Public Road' by virtue of its declaration as a Tollway under the Roads Act 1993.

The Stage 3 digital signage strategy proposes fixing digital advertising signs onto some vehicle bridges that traverse the M2. These bridges are Lane Cove Road, Beecroft Road, Murray Farm Road, Windsor Road and Cropley Drive. These roads are considered 'Public Roads' under the Roads Act and require TfNSW concurrence. Consequently, under Division 4.8 of the EP&A Act 1979, the development applications that impact these roads constitutes 'Integrated Development'.

The other two (2) Stage 3 DA's that propose works to the Ixion Road pedestrian bridge and the freestanding advertising sign located on M2 road reserve land at Macquarie Park (referred to as the Eden Park Advertising sign), do not fall under the Roads Act and will not require concurrence from TfNSW. As such, these DA's do not constitute 'Integrated Development'.

2. SITE AND ENVIRONMENTAL DESCRIPTION & CONTEXT

2.1. The Site

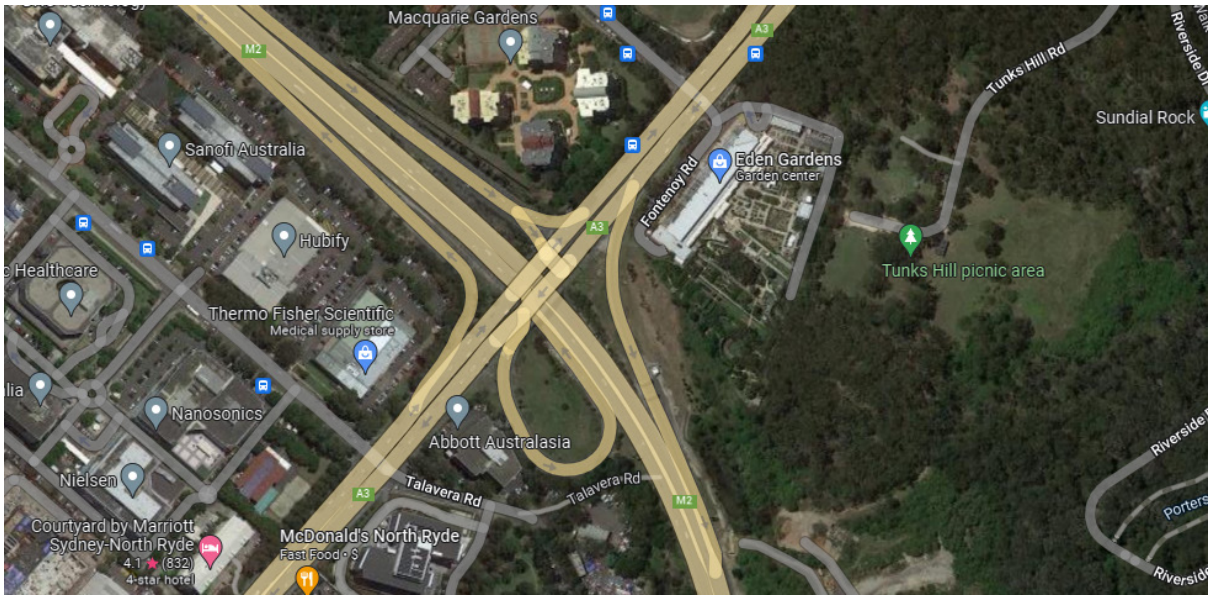
The site for the installation of the digital screen is the Lane Cove Road overpass that traverses the M2 Motorway at Macquarie Park. Refer Location Plan at Figure 2.1. The overpass marks a major intersection along the Corridor and provides the Macquarie Park entry and exit ramps to the Motorway at this location.

The Lane Cove overpass has an existing digital screen on its outbound or eastern elevation. This proposal involves the installation of a digital screen on the inbound or western elevation of the overpass. Refer site photographs in Figures 2.2 and 2.3. The existing and proposed digital screens are centrally mounted above the traffic lanes.

The existing eastern sign incorporates decorative cladding to the raw concrete bridge deck and headstock. This cladding has been applied to each of the M2 Motorway bridges that display signage as provided for under the M2 Urban Design Strategy. The cladding design and materials provide a cohesive beautification treatment and ensure all of the existing and proposed signs read consistently in the streetscape and journey of the M2. This cladding treatment will be applied to the western elevation.

FIGURE 2.1

SITE LOCATION



Source: Google Maps April 2022

FIGURE 2.2

SITE LOCATION EASTERN BRIDGE ELEVATION WITH EXISTING DIGITAL SIGN

Source: Google Maps April 2022

FIGURE 2.3

WESTERN BRIDGE ELEVATION SITE OF PROPOSED DIGITAL SIGN

Source: Google Maps April 2022

2.2. Surrounding Land Uses

Lane Cove Road is a Classified Road that traverses through the suburb of Macquarie Park in the Local Government Area of Ryde where it overpasses the M2 Corridor.

Surrounding land uses on the southern side of the M2 are commercial and light industrial uses associated with the Macquarie Business Park. These buildings are multi-storey, contemporary in design and set within landscaped grounds with open air car parking. They are well setback and buffered from the Motorway by vegetation corridors which were part of the landscape regeneration works that took place when the Motorway was constructed in 1997.

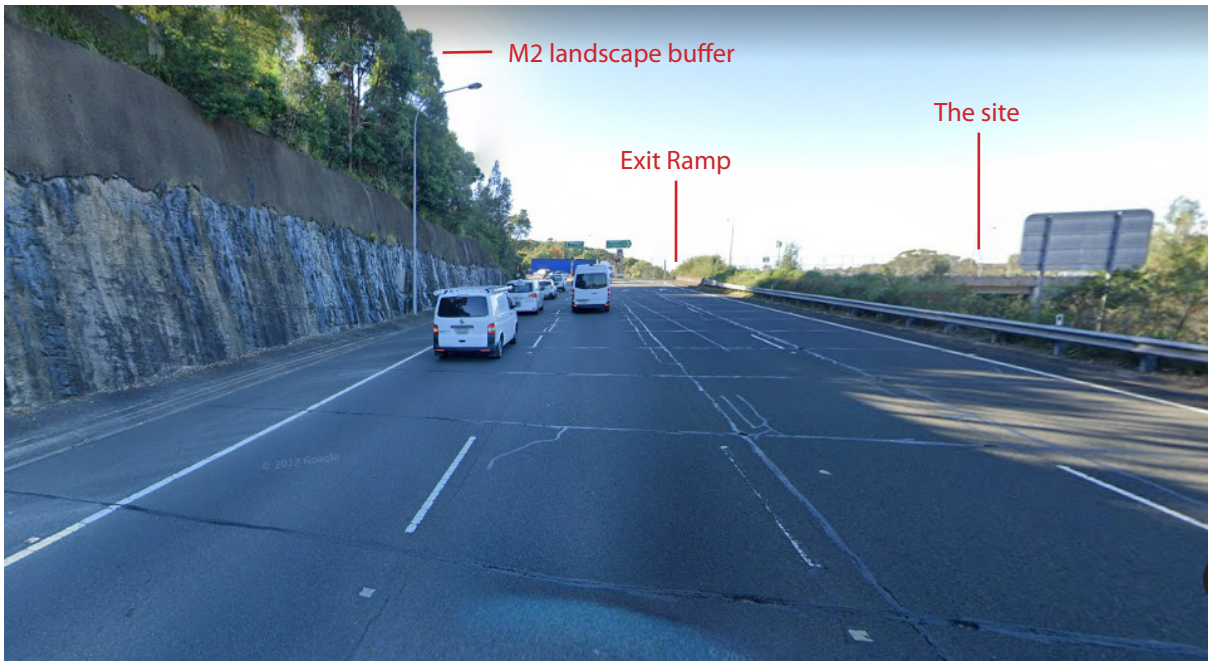
The land uses on the northern side of the M2 and the closest to the site are to the immediate north west of the site. They comprise high density residential apartments associated with the Macquarie Gardens development and a narrow strip of public recreation land. The apartments are set well back and separated from the Lane Cove Road overpass by the Lane Cove Road M2 off-ramp which runs parallel to the Motorway. A landscape buffer with significant trees aligns the northern edge of the exit ramp and acts as a visual barrier. Refer to Figure 2.4.

There is a substantial height variation between the carriageways of Lane Cove Road and the Motorway. The Motorway is cut into the topography and sits well below the carriageway as evidenced by the sandstone outcrops that align the Motorway and exit ramp. This height differential combined with the roadside landscaping filter the view lines to the western bridge elevation and hence the proposed digital sign. The view lines to the sign are contained to the M2.

Development to the north east of the Lane Cove Bridge comprises of the Eden Gardens Garden Centre. As this development sits behind and well above the western bridge elevation there are no view lines to the sign from this development.

FIGURE 2.4

M2 EXIT RAMP ONTO LANE COVE ROAD WITH SANDSTONE OUTCROP AND VEGETATION BUFFER



Source: Google Maps April 2022

FIGURE 2.5

MACQUARIE GARDENS HIGH RISE RESIDENTIAL TO THE NORTH WEST NOTE SIGNIFICANT ELEVATION ABOVE THE MOTORWAY

Source: Google Maps April 2022

2.3. M2 Route Context

The M2 Motorway is a 21 Kilometre tollway that forms a dedicated transport corridor. Along its length it includes tunnel cuttings, bridges, access ramps, noise walls, toll gantries, cycleways, signage structures and landscaping.

The Motorway is owned by TfNSW and is operated by Transurban and Hills Motorway Ltd. The M2 connects directly with the Lane Cove Tunnel in North Ryde, and travels north west through the suburbs of Macquarie Park, Epping, Beecroft, Carlingford, Baulkham Hills and Winston Hills where it connects with the M7 Motorway at Seven Hills. In October 2020, the North Connex ramp onto the M2 opened at Pennant Hills Road.

Along this journey the M2 traverses both undeveloped and developed lands. The developed areas include the densely and urbanised Macquarie Park Precinct in the Ryde LGA where the subject sign will be located through to the lower density residential areas in the Hills and Hornsby LGA's.

The M2 is also a key public transport corridor with dedicated bus lanes from Beecroft Road to Windsor Road.

2.4. M2 Urban Design Strategy

An urban design study and signage master plan was originally prepared by the Applicant for the Motorway in 2010. These documents established a conceptual framework for locating and designing signage along the corridor and informed all subsequent signage works. The Urban Design Study was prepared by Design Inc. The strategy identified that signage would provide sensory stimulation along the route and a sense of awareness for the driver about the locations through which they are passing.

It established urban design objectives which remain relevant to the current stage 3 digital works now being advanced. They are:

- Introduce advertising signage to the road corridor according to a coordinated plan which improves the urban design of the corridor and relates positively to the roads context.

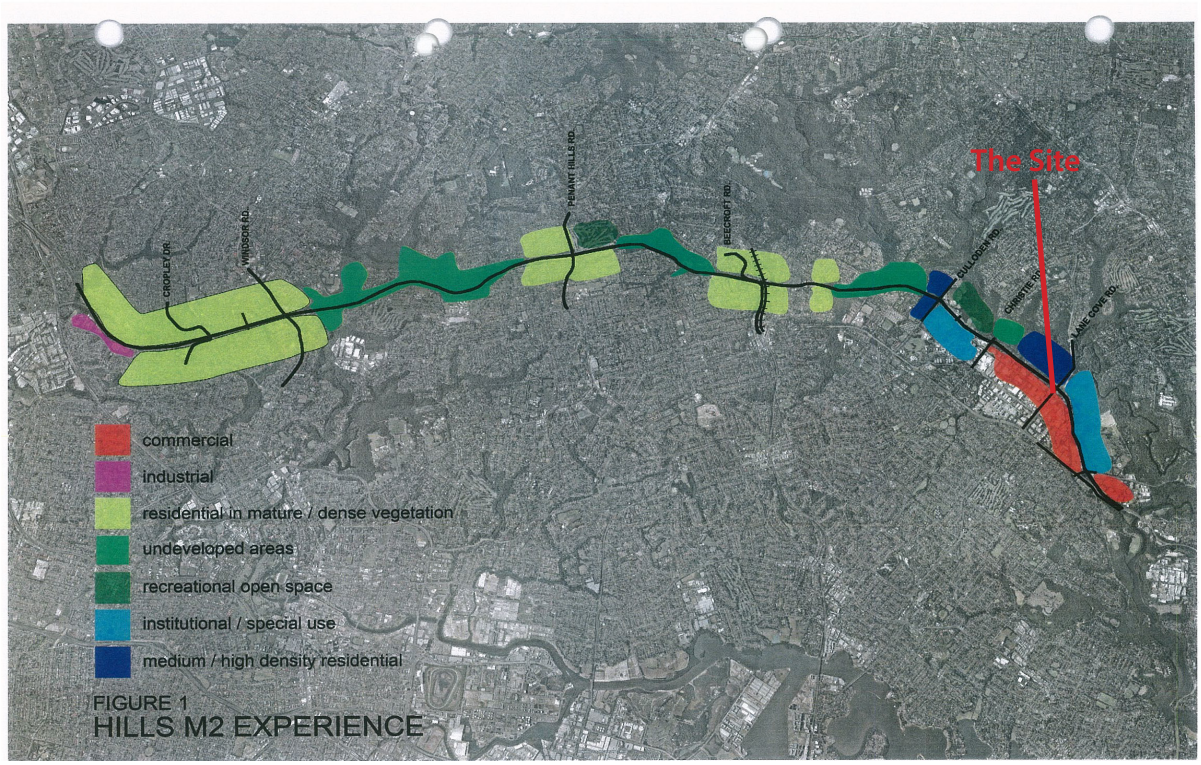
- Enhance the visual amenity of the road corridor and the experience of users.
- Enhance the visual amenity of overbridges for local road users.
- Avoid adverse visual impacts on residential neighbours alongside the corridor.
- Not diminish the visual quality of bushland.
- Respect heritage and conservation values of adjacent lands.
- Have regard to the desired future character of the localities and Precincts alongside the corridor.

Figure 2.6 illustrates the location, size and character of the various areas and precincts along the M2 that were identified in the study. The study divided the Transport Corridor, into two key segments. The eastern "*high tech working district* that encompassed Macquarie Park and the western *'Hills living district*. Refer Figure 2.7. The proposed digital screen is located in the '*high tech working district'.*

Central to the urban design approach was creating a route identity and context response. This was achieved by using a consistent materials and finishes palette. The materials palette for the '*High Tech*' segment of the Motorway adopted a metal look with cool lighting. This materials palette has been applied to all of the digital sites that presently exist within the Ryde LGA including the eastern elevation of the Lane Cove Road Bridge. Refer Figure 2.2. As detailed on the development application plans in Appendix B the metal look fabrication is also proposed for the western elevation under this application and will give the bridge deck a contemporary new look that is consistent with the eastern elevation.

FIGURE 2.6

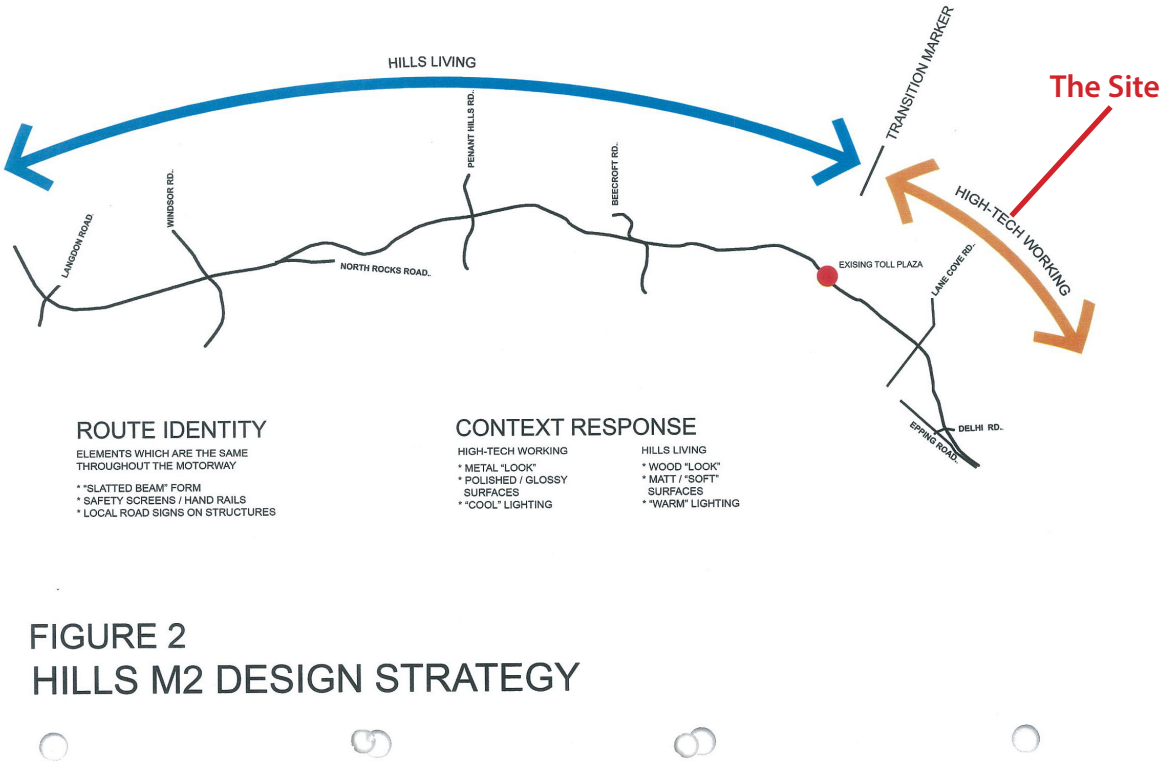
LAND USE CONTEXT 2010 URBAN DESIGN



Source: Design Inc M2 Urban Design Study 2010

FIGURE 2.7

M2 2010 URBAN DESIGN SEGMENTATION



Source: Design Inc M2 Urban Design Study 2010

2.5. The Draft Macquarie Park Place Strategy 2021

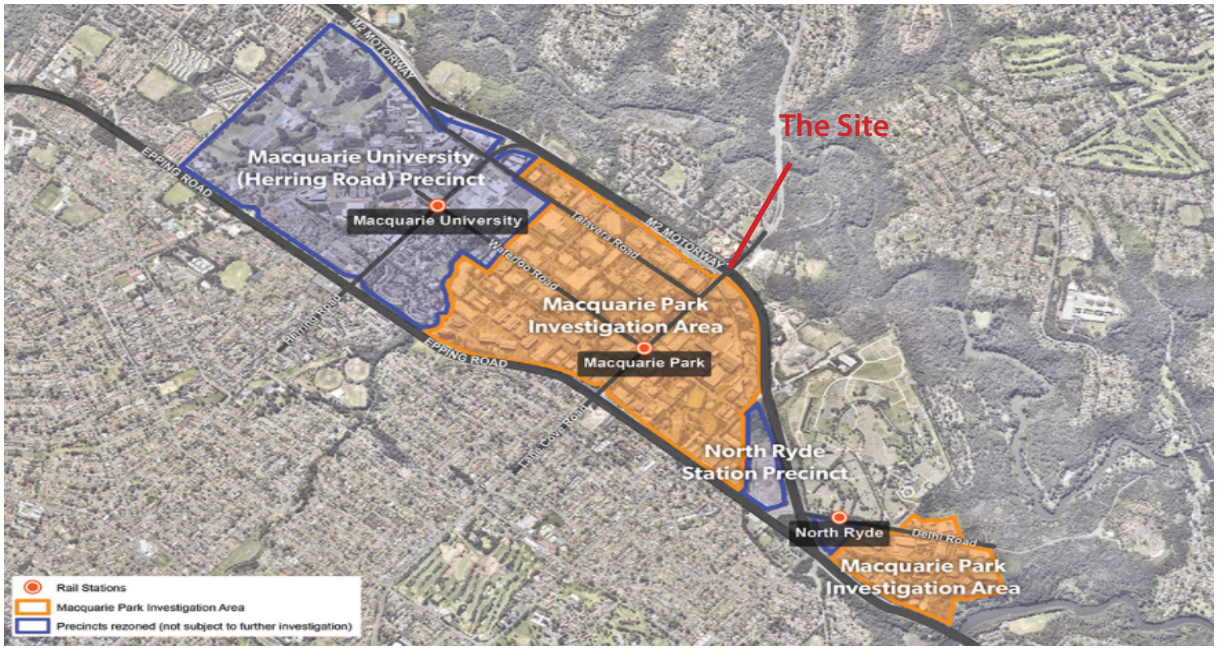
Between July and August 2021 the NSW DPE exhibited the draft Macquarie Park Master Plan and Place Strategy. Macquarie Park has been defined as a Strategic Centre and a health and education precinct that will become an important economic and employment powerhouse in Sydney's North District.

The Greater Sydney Commission (GSC) is leading the land use and infrastructure planning for Macquarie Park. It is advancing a whole of State and Local Government approach to the strategic investigations. Figure 2.8 details the Strategy study area. The NSW DPE is supporting the investigations and working in collaboration with City of Ryde Council, the GSC, TfNSW and State Agencies to deliver the Place Strategy.

The draft Place Strategy establishes the desired future character for that section of the M2 that falls within the Ryde LGA. Macquarie Park is home to Macquarie University, Macquarie University Hospital, Macquarie University Incubator and leading global companies. It is ideally placed to become a centre for innovation, creating new jobs and investment opportunities. The draft Place Strategy will enable Macquarie Park to reach its full potential as a place for innovation that encourages creativity and collaboration.

FIGURE 2.8

DRAFT MACQUARIE PARK PLACE STRATEGY



Source NSW DPIE Draft Macquarie Park Place Strategy 2021

The driving vision is to create *'a great place for people to share ideas, live and play.'* The vision is underpinned by the following aims:

1. Drive the transformation of Macquarie Park as an innovation district to create new jobs and investment opportunities.
2. Ensure infrastructure accompanies new development through a Strategic Infrastructure and Services Assessment prepared by the GSC.
3. Make it easier to move around Macquarie Park with more walking and cycling paths and better connections to public transport.
4. Create sustainable neighbourhoods, each with their own identity and role.
5. Connect to Country by creating more quality public open space and connections to the natural landscape.

The draft Strategy will guide Macquarie Park's transition from a successful suburban business park to a vibrant commercial centre that supports job growth and creates a great place for people to share ideas, live and play. Specifically, it will deliver:

- Opportunities for up to 20,000 jobs.
- Up to 7,650 new homes.
- Improved access to public transport.
- An 18-hour economy attracting business, workers and visitors.
- A renewed Connection to Country – better connections between people and places.
- More walking and cycling paths.
- A network of parks and open space for everyone to enjoy.

The Strategy identifies seven (7) new Neighbourhoods within the corridor. Each will be subject to detailed master planning. The Neighbourhoods are illustrated in Figure 2.9.

FIGURE 2.9

MACQUARIE CORRIDOR PLACE STRATEGY NEIGHBOURHOODS

Figure 7
Proposed neighbourhoods

Source NSW DPIE Draft Macquarie Park Place Strategy 2021

Two Neighbourhoods have frontage to the M2 Transport Corridor these are Neighbourhoods one (1) and five (5). The plans for these Neighbourhoods are detailed in Figures 2.10 and 2.11 respectively. An overview of the vision for each is provided below.

- **NEIGHBOURHOOD 1 NORTH PARK- NGALAWALA**

Ngalawala is the northern quadrant of Macquarie Park between Shrimptons Creek and Porters Creek, adjacent to M2 Motorway. Ngalawala, meaning reciprocity, is the foundation of law/lore and an important principle for a future business-focused neighbourhood.

It is planned to be a commercial neighbourhood with a new activity hub supported by the Metro station and a diversified local centre. A restored Industrial Creek will provide a focus to connect quality open spaces. A new cluster of public uses will encourage places for gathering and meeting. It is proposed to construct 450,000–500,000sqm of new built space within the neighbourhood for commercial and retail use. No new homes are planned for this area.

Ngalawala is characterised by its proximity to the Lane Cove National Park. It is planned to construct 45,000 square metres of new parks, squares, plazas. The Neighbourhood will also see the restoration of Industrial Creek and the integration of the Riparian Corridor into Creek Restoration Park.

As a design principle taller buildings will be located along Talavera Road and within the new Activity Hub at the intersection of Talavera Road and Khartoum Road.

FIGURE 2.10

NEIGHBOURHOOD 1 NGALAWALA STRUCTURE PLAN NORTH PARK

Figure 8
Proposed Structure Plan: North Park - Ngalawala (Reciprocity)

Source NSW DPIE Draft Macquarie Park Place Strategy 2021

- **NEIGHBOURHOOD 5 PORTERS CREEK-BURBIGAL**

This Neighbourhood is located on the eastern edge and interfaces with the Lane Cove National Park and commercial core bounded by the M2 Motorway. Burbigal is bound by Lane Cove Road to the north, the Lane Cove National Park and M2 Motorway to the east and Wicks Road to the south. It offers key open space and connections to the natural environment through Fountain Garden, Halifax Street Park and Porters Creek.

It is predominantly commercial and retail space within an existing electronics cluster, this Neighbourhood offers proximity to the station and attractive landscaped areas. It is proposed to provide 80,000–100,000 square metres of new built space and 400–600 new homes.

As a design principle it is proposed to locate taller buildings to take advantage of views and access to open space. The Neighbourhood will be supported by 35,000 square metres of parks, plazas and square and 2000 square metres of enhanced open space. A landscaped eastern edge to the Neighbourhood will provide a buffer to the M2 Motorway.

FIGURE 2.11

NEIGHBOURHOOD 5 BURBIGAL STRUCTURE PLAN PORTERS CREEK

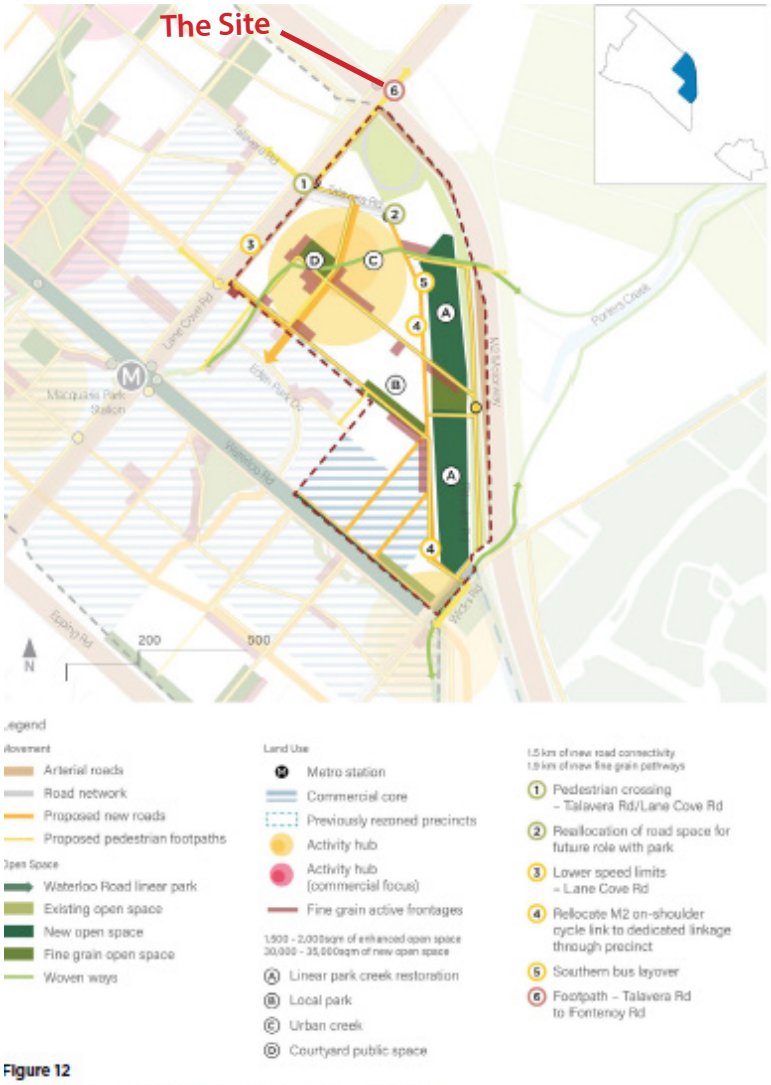


Figure 12
Proposed Structure Plan: Porters Creek - Burbigal (Morning)
Source NSW DPIE Draft Macquarie Park Place Strategy 2021

The introduction of the digital screen on the western elevation will not adversely impact the desired future character being proposed under the draft strategy for Neighbourhoods one (1) and five (5). Neighbourhood one (1) will not see the introduction of any housing. It is an Activity Hub and sits to the south west of the Motorway and will be commercial and retail in its land use. Neighbourhood five (5) will sit behind the proposed digital sign as it is located to the south east of the site and as such there are no direct sightlines back to the sign. The introduction of digital technology onto the western elevation will complement the existing digital sign on the eastern elevation of the bridge and is consistent with the vision for Macquarie Park in the draft Strategy to become an innovation district with an 18 hour economy.

2.6. Heritage Significance

The site is not identified as an item of local or state heritage significance and is not located within a heritage conservation area or in proximitity to any items.

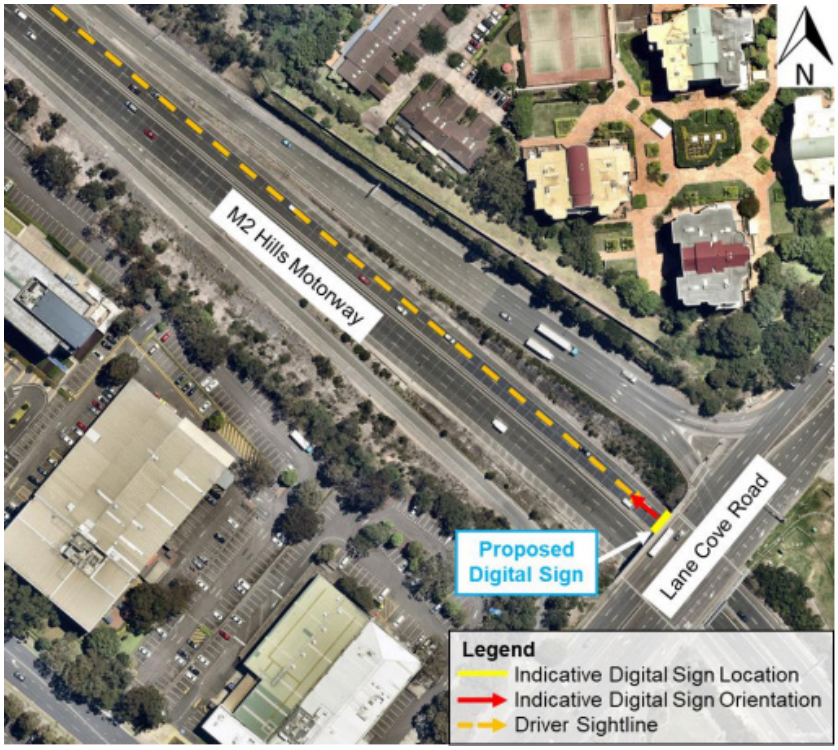
2.7. Road and Traffic Context

Bitzios Consulting has undertaken a Traffic Safety Assessment to determine if the proposed digital sign would have an adverse traffic safety impact. The Assessment Report is reproduced in Appendix C. The relevant extracts from the report that establish the site is suitable for the introduction of a digital sign are reproduced in Sections 2.7.1 and 2.7.2. The compliance of the proposal against the relevant traffic safety provisions contained in Chapter 3 and Schedule 5 of IESEPP 2021 and the Transport Corridor Guidelines 2017 are discussed in Section 4 of this SEE.

The sign is proposed to be located above the eastbound carriageway of the Motorway on the Lane Cove Road overpass. The digital sign is proposed to face north-west towards eastbound drivers along the M2. The driver viewing range to the sign from this approach is illustrated in Figure 2.12 and demonstrates a relatively long distance on approach to the proposed sign from which it can be identified.

FIGURE 2.12

DIGITAL SIGN VIEWING LOCATIONS



Source: Bitzios Consulting 2022 Refer Appendix C of SEE

2.7.1.Review of Crash Data Crash

'Crash data for the relevant section of the M2 was obtained from TfNSW in order to assess the crash history in proximity to the subject site. The most recent five years of crash data at the time of the data request was for 2016-2020. Crashes involving vehicles travelling in the direction of and in view of the sign were used for the assessment.

The viewing area of the proposed digital sign is from approximately 685 metres north-west along the M2, though it would only be clearly visible to drivers within 200 metres as described in Section 2.1. As such, crash data was only considered for crashes within 200 metres on approach to the proposed sign location.

As per Rule 287 (3) of the Australian Road Rules, crashes are only recorded if they are reported to the police and when one of the following occurs:

- *Any person is killed or injured*
- *Drivers involved in the crash do not exchange particulars*
- *When a vehicle involved in the crash is towed away.*

The crash data was provided in the following degree categories:

- ***Fatal** – a crash in which at least one person was killed*
- ***Serious injury** – a crash involving at least one person identified in a police report and matched to a health record indicating a hospital stay due to injuries sustained in a crash, or is identified as an iCare (Lifetime Care) participant AND no one was killed in the crash*
- ***Moderate injury** – a crash involving at least one person identified in a police report who is matched to a health record that indicates that they were treated at an emergency department but were not admitted for a hospital stay, or is matched to a CTP claim indicating a moderate or higher injury AND no one was killed or seriously injured*
- ***Minor/Other injury** – a crash involving at least one person identified as an injury in a police report who is not matched to a health record that indicates the level of injury severity, or is matched to a minor injury CTP claim AND no one was killed, seriously injured or moderately injured*
- ***Non-casualty (towaway)** – a crash in which no one was killed or injured but at least one motor vehicle was towed away. The crash data was mapped using GIS software and is presented in Appendix C of the Bitzios Report along with a detailed record list. The crash maps are presented in terms of degree and type (road user movement describing the first impact of the crash), with a degree summary provided in Table 2.1.*

TABLE 2.1

CRASH DEGREE SUMMARY ON APPROACH TO THE SITE 2016-2020

Year	Crash Degree					Total
	Fatal	Serious Injury	Moderate Injury	Minor/other Injury	Non Casualty (towaway)	
2016	-	-	-	-	1	1
2017	-	-	-	-	-	-
2018	-	-	-	-	-	-
2019	-	-	-	-	-	-
2020	-	-	-	-	-	-
Total	-	-	-	-	1	1

Source: Bitzios Consulting 2022 Refer Appendix C of SEE

As shown in the above table, only one crash was reported between January 2016 and December 2020. It occurred in February 2016 during daylight and in dry road surface conditions, right below the Lane Cove Road overpass. The crash was classified as 'other same direction' and resulted in a towaway.

The site reveals a very low crash rate under visible sighting conditions to the proposed digital sign based on an average of less than 1 crash per year for a high-speed road section carrying over 28,000 eastbound vehicles per day. The crash severity was low and the data highlights that this is not an inherently unsafe location. Furthermore, the analysis of the crash records suggests that a digital sign where proposed is not likely to influence the future crash history in anyway.

2.7.2.Approach Sightline Assessments

DESCRIPTION OF APPROACHES

The eastbound approach in proximity to the proposed sign is described in Table 2.2.

TABLE 2.2

APPROACH ATTRIBUTES-M2 EASTBOUND

ATTRIBUTE	*DETAILS*
Posted Speed Limit	*100Km/h*
Decision Points within view of the site	*There are no decision points within view of the proposed advertising*
Approach Arrangement	*2 uninterrupted lanes (lane 1 and 2)*
Sight Length	*From approximately 685 metres north-west of the proposed sign, although the sign could only realistically be recognised from about 200 metres away. At this distance, the sign would appear at the windscreen at a size of 6cm wide x 1.6cm high.*
Minimum duration of visibility	*25 seconds at free-flow speed*

Source: Bitzios Consulting 2022 Refer Appendix C of SEE

DRIVER SIGHTLINE ASSESSMENT

The eastbound approach along the M2 is straight and flat before a long right-hand curve starting at the Lane Cove Road overpass and proposed digital sign. The sign could be seen from approximately 685 metres away but would be very small and its content would be unrecognisable at this range. From about 200 metres away, the sign is still relatively small in the forward field of view, but drivers would be likely to be able to identify its advertising contents.

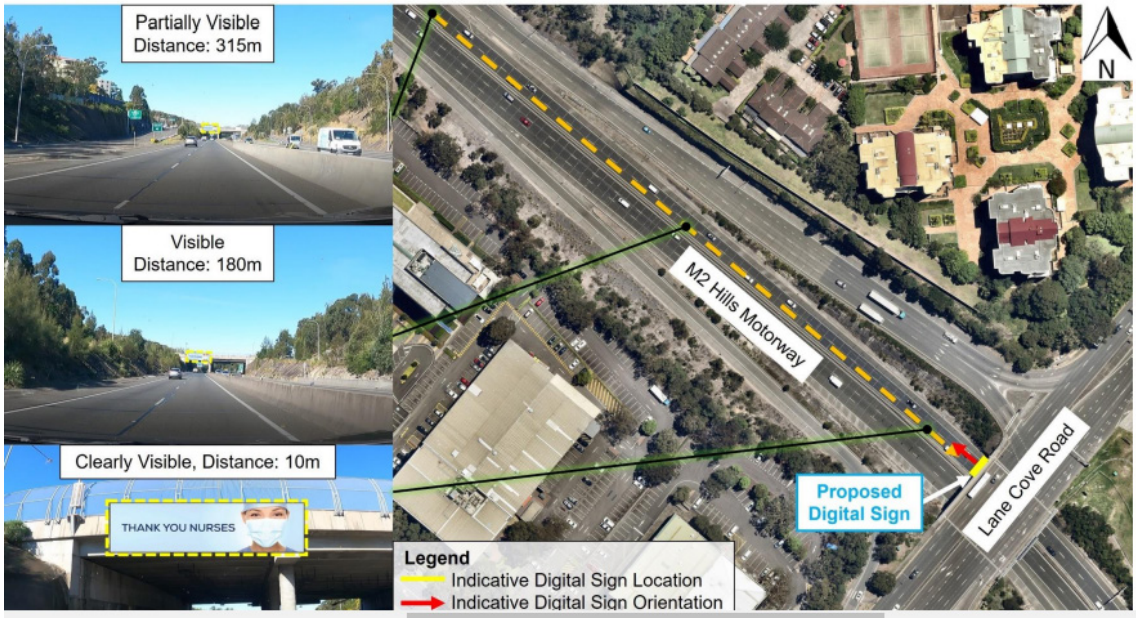
A digital sign in this location will not obstruct sightlines to, or influence the messaging of, traffic control devices or signs. Despite the 100km/h speed limit, the approach to it does not require rapid, complex decision making by drivers and is a location of low cognitive load. There are no on-ramps or off-ramps in proximity to the approach to the sign. The decision point for the diverge movement to the Lane Cove Road eastbound off-ramp is approximately 400 metres back from the sign at which point the sign would be unrecognisable and smaller than a postage stamp in size at the windscreen.

All relevant signage (including the 'LANE COVE TUNNEL AHEAD' / 'TOLL APPLIES' and 'TUNNEL CLEARANCE / NO DANGEROUS GOODS IN TUNNEL') are located beyond the overpass and come into clear view when a driver is close to the passing under the underpass, where a driver wouldn't be able to see the digital sign because it would be obscured by the vehicle's roof.

The in-vehicle sightlines from the M2 eastbound are shown in Figure 2.13, clearly demonstrating that all vehicle movements are in the same sightline as the digital sign, which means no risk of distraction away from the forward roadway when glancing to it.

FIGURE 2.13

IN-VEHICLE VIEWING RANGE AND VIEWS ALONG THE M2 EASTBOUND



Source: Bitzios Consulting 2022 Refer Appendix C of SEE

3. DESCRIPTION OF PROPOSED WORKS

3.1. Overview

This proposal is for the erection of a digital LED screen that will display general advertising content on the western elevation of the Land Cove Road overpass bridge above the inbound (eastern) traffic lanes. The proposed advertising sign will be located wholly within the area of the overpass that is the subject of the concession between Manboom and the Hills Motorway Limited. The digital screen will present as an integrated streamlined cabinet. All electrical cabling will be concealed from view within the signage support structure. It will not protrude above or below the bridge structure, as such it will be fully contained within the profile of the bridge. The proposal is fully detailed on the plans prepared by Dennis Bunt Consulting Engineers Drawing Number DA01, Revision A, dated August 2022 reproduced in Appendix B. A montage of the proposal is illustrated in Figure 3.1. The development statistics of the proposal are summarised in Table 3.1.

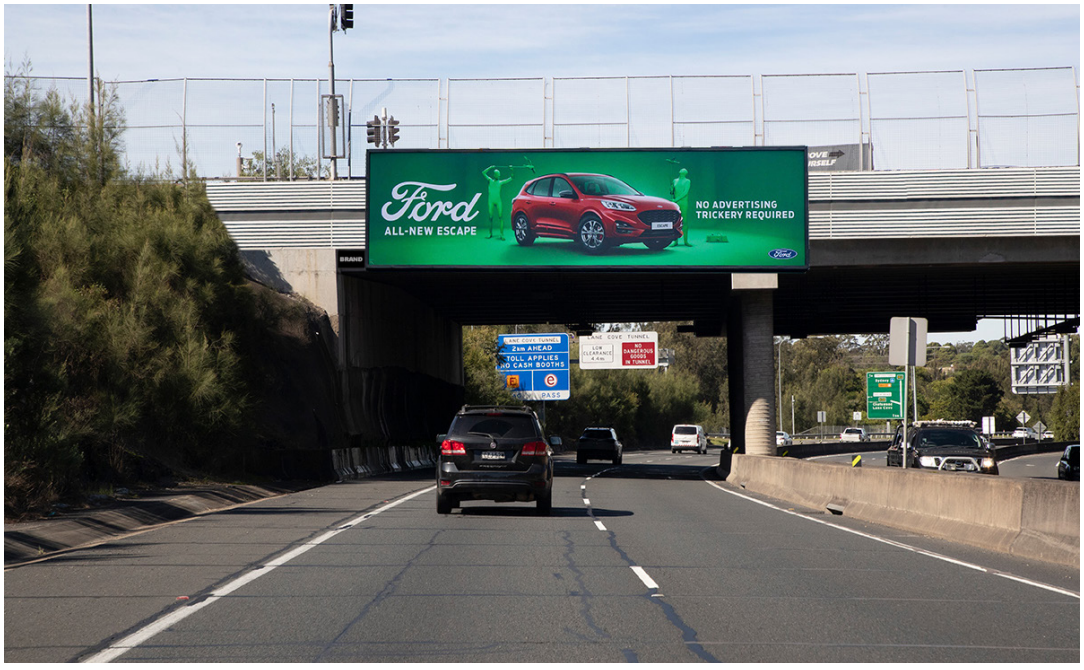
The digital screen measures 12.48 metres by 3.2 metres. The total advertising display area inclusive of the frame is 41.51 square metres. The digital screen is housed in a cabinet that has a depth of 920 millimetres when measured from the face of the overpass structure. This includes a 600 millimetre safety gantry access platform. A small webcam is located in front of the digital screen. The webcam allows monitoring of the screen for operational purposes to ensure the correct content is always on display. In the event of a malfunction the screen is programmed to default to a blank black screen.

Decorative metal cladding will extend across the full horizontal length of the bridge deck inclusive of both the inbound and outbound lanes. The cladding will be identical to that mounted on the eastern elevation. The bottom of the cabinet will maintain a 5.75 metre clearance height to the underside of the bridge as currently exists. The top of the cabinet sits well below the height of the existing safety screen.

The digital screen will be illuminated twenty four (24) hours a day, seven (7) days a week. In accordance with the requirements of the Transport Corridor Guidelines 2017 it will display static images for a 25 second dwell time before changing to the next static image at a 0.1 second transition time. The digital display will not display flashing, flickering or animated displays.

FIGURE 3.1

PHOTOMONTAGE OF THE PROPOSED DIGITAL SCREEN



Source: Digital Place Solutions 2023

TABLE 3.1

DEVELOPMENT STATISTICS

SIGNAGE PARAMETER	STATISTICS
Dimensions of Signage Face	Length 12.58 metres Height 3.3 metre
Logo Box	0.25 square metres (sqm)
Advertising Display Area	41.51 sqm (advertising screen) + 0.25 sqm (logo box)= 41.76 sqm
Depth	600 mm (gantry access platform) + 920 mm (signage cabinet) = 1.52 metres
Orientation	Landscape
Pixel Pitch	10 mm
Clearance height from underside signage cabinet to road carriageway	5.75 metres
Dwell Time	25 seconds
Transition Time	0.1 seconds
webcam	In front of digital screen
Operation	24 hour
Content	95% third party 5% road safety
Fall Arrest System	To be installed as notated on the DA Plans

Source: Compiled by Urban Concepts

3.2. Content Management, LED Technology and Operation

3.2.1. Materials and Maintenance

Routine maintenance of the advertising structure will be undertaken by the Applicant. All maintenance work is undertaken either remotely or on location if a fault is detected. The digital screen box is accessed by a secured door at its top. The creative content of the proposed advertising signs will be changed using the appropriate computer software located at the offices of Manboom or its contractors. Accordingly, there will not be any occupational health and safety risk associated with the changing of creative content nor obstructions to the traffic flows on the M2 or Lane Cove Road inclusive of the adjacent pedestrian footpath.

3.2.2. Proposed Operation of the LED Screen

A content management system will be operated by Manboom or its contractors. The management system will ensure that unapproved content is not downloaded. In the event of a malfunction the screen will be programmed to default to a blank black screen. The operation of the sign will be monitored on a 24 hour basis by a small webcam. The LED sign will display advertising content in play cycles that are looped. Creative content will be displayed as a static image for a 25 second dwell time. Each static image will change at a 0.1 second transition time between images. Content will only ever appear static between each transition and the digital screen will not display live, flashing or animated content.

3.2.3.Content Management

The Applicant will ensure that the following products and services are not displayed on the digital screens:

- No tobacco products.
- No overtly religious advertising.
- No advertising that contains overt and sexually graphic images.
- No pornography and illegal drugs.

In addition all advertising copy will comply with the:

- Australian Advertising Industry Codes of Conduct; and
- The Outdoor Media Association's Code of Conduct.

3.3. Illumination

Electrolight has assessed the luminance of the proposed signage. The Lighting Impact Assessment (LIA) report is detailed in Appendix D. The digital screen will be illuminated on a 24 hour basis. The relevant extracts from the LIA are reproduced below.

Based on an assessment of the surrounding environment, the proposed signage is located within Environmental Zone A4 under AS 4282 The Control of the Obtrusive effects of Outdoor Lighting -2019 (AS 4282), therefore the maximum night time luminance is 350 cd/sqm. Refer Table 3.2.

TABLE 3.2

MAXIMUM NIGHT TIME AVERAGE LUMINANCE FOR SIGNAGE

ENVIRONMENTAL ZONE	DESCRIPTION	MAXIMUM AVERAGE LUMINANCE (CD/M2)
A4	*High district brightness e.g. Town and city centres, commercial areas, and residential areas abutting commercial areas*	*350*
A3	*Medium district brightness e.g. suburban areas in towns and cities*	*250*
A2	*Low district brightness e.g. sparsely inhabited rural and semiru-ral areas*	*150*
A1	*Dark e.g. relatively uninhabited rural areas. No Road Lighting*	*0.1*
A0	*Intrinsically Dark e.g. Major Optical Observatories. No Road Lighting*	*0.1*

Source: Electrolight 2022 Refer Appendix D
 # The site is located in a Zone A3 area

AS4282 does not include limits for daytime operation of illuminated signage. However, the Transport Corridor Guidelines 2017 outlines maximum permissible luminance limits for various lighting conditions, including daytime. Under the Guidelines, the proposed signage is classified as being within Zone 3, which is described as an area with generally medium off-street ambient lighting. The maximum night time luminance of a digital signage within Zone 3 is 350 cd/sqm.

Table 3.3 outlines the maximum luminance levels to comply with AS 4282 and the Transport Corridor Guidelines 2017 for the various lighting conditions listed below:

TABLE 3.3

LUMINANCE LEVELS FOR DIGITAL ADVERTISEMENTS

LIGHTING CONDITION	*MAXIMUM PERMISSIBLE LUMINANCE (CD/M2)#*	*COMPLIANT*
Full sun on face of signage	*No limit*	*Yes*
Day time luminance (typical sunny day)	*6000*	*Yes*
Morning and Evening *Twilight and overcast weather*	*700*	*Yes*
Night Time	*350*	*Yes*

 # The signage is to be dimmed on site to ensure the maximum luminance nominated above is not exceeded.

The proposed digital signage has a maximum brightness (luminance) of 8000 cd/sqm. The screen shall be commissioned on site to yield a maximum screen luminance of 8000 cds/qm when full sun strikes the face of the sign (maximum brightness), 6000 cd/sqm during normal daytime operation, 700 cd/sqm during twilight and inclement weather and 350 cd/sqm during night time.

AS4282 ASSESSMENT

AS4282 provides limits for different obtrusive factors associated with dark hours (night time) operation of outdoor lighting systems. Two sets of limiting values for spill light are given based on whether the lighting is operating before a curfew (known as "pre-curfew" operation) or operating after a curfew (known as post-curfew or curfewed operation). Pre-curfew spill lighting limits are higher than post-curfew values, on the understanding that spill light is more obtrusive late at night when residents are trying to sleep. Under AS 4282, the post-curfew period is taken to be between 11 pm and 6 am daily. As the signage operates all night, the signage will be assessed against the more stringent post-curfew limits.

The AS 4282 assessment includes a review of nearby residential dwellings and calculation of the amount of illuminance (measured in Lux) that the properties are likely to receive from the signage during night time operation. The acceptable level of illuminance will in part be determined by the night time lighting environment around the dwellings. AS 4282 categorises the night time environment into different zones with maximum lighting limits as shown in Table 3.4 below:

TABLE 3.4

MAXIMUM VALUES OF LIGHT TECHNICAL PARAMETERS

	Maximum Vertical Illuminance		
Environmental Zone	***Pre-Curfew***	***Post-Curfew***	***Description***
A0	***0***	***0***	Intrinsically Dark e.g. Major Optical Observatories. No Road Lighting
A1	***2***	***0.1***	Dark e.g. relatively uninhabited rural areas. No Road Lighting
A2	***5***	***1***	Low district brightness e.g. sparsely inhabited rural and semirural areas
A3	***10***	***2***	Medium district brightness e.g. suburban areas in towns and cities
A4	***25***	***5***	High district brightness e.g. Town and city centres, commercial areas, and residential areas abutting commercial areas

 # The site is located in Zone A3

Based on an assessment of the surrounding areas, the nearest dwellings with potential views to the signage are at the Macquarie Gardens located at 1-15 Fontenoy Road.

As such, the Macquarie Gardens apartments formed the focus of the illuminance assessment. The proposed signage (and surrounding environment) was modelled in lighting calculation program AGI32 to determine the effect (if any) of the light spill from the signage. Photometric data for the screen was provided by the screen manufacturer, with the maximum luminance corresponding to the night time limit outlined in Table 3.2. Appendix D of the Electrolight Report shows the lighting model and the results of the calculations.

It can be seen from the lighting model that the maximum illuminance to the dwellings in the Macquarie Gardens in Zone A3 is 1.20 lux. The illuminance complies with the maximum AS 4282 limit of 2 lux that is set out in Table 3.4.

3.4. Public Benefit Offer

3.4.1. Public Benefit Proposal

The Applicant provides the following advice in respect to the public Benefit Offer that accompanies this development application.

This DA has been lodged pursuant to section 3.14 of the State Environmental Planning Policy (Industry and Employment) 2021 (IESEPP). Manboom, as Applicant in lodging the DA, is required to also have regard to the obligations and mechanisms under a Deed and Agreement between NSW Road and Traffic Authority (now TfNSW) and The Hills Motorway Limited (now Transurban) (Hills Agreement) dated 8 December 1999;

Section 3.14(3) of the IESEPP provides that the Planning Minister must not grant consent to the display of advertising under section 3.14(1) unless the Planning Minister is satisfied that the advertisement is consistent with the Transport Corridor Outdoor Advertising and Signage Guidelines (November 2017) (Guidelines).

The Guidelines provide at section 4 that proposals for certain outdoor advertisements must meet a public benefit test to ensure that the advertisement will result in a positive gain or benefit to the community. The public benefit test must be applied to an advertising proposal if the advertisement is to be displayed along a motorway or bridge.

The Guidelines provide that the level of public benefit for a given advertisement is to be negotiated and agreed between the consent authority and the Applicant (Manboom Signage and Transurban), and can be provided as a monetary contribution or as an "in-kind" contribution, but in either case must be linked to improvements in local community services and facilities including benefits such as:

1. *Improved road safety (road, rail, bicycle and pedestrian);*
2. *Improved public transport services;*
3. *mproved public amenity within, or adjacent to, the transport corridor;*
4. *support school safety infrastructure and programs; and*
5. *(Other appropriate community benefits such as free advertising time to promote a service, tourism in the locality, community information, or emergency messages.*

The guidelines additionally state that:
"RMS is responsible for the collection, distribution, and expenditure of public benefit monies from tollway operators. Public benefit monies received by RMS must be recorded in their financial statements and Annual Reports as set out in Section 4.2.1. RMS must consult with the relevant council to identify and prioritise activities to be included in the public benefit works program."

In relation to this DA, Manboom Signage (Applicant) and THML have issued a public benefit offer to TFNSW. The public benefit offer includes the required elements under the Hills Agreement (1999)(existing public benefit) together with additional public benefit over and above that agreed in the Hill Agreement to enable the Planning Minister to be comfortable the public benefit as proposed is reasonable.

Public benefit discussions with TfNSW are ongoing at the date of lodgement of this DA.

3.4.2. Public Service and Amber Alert Messaging

The Applicant and Transurban will allocate five (5) percent of screen time to TfNSW for road safety messages and the sign will be made available for amber alert messaging in the event that a "threat to life" emergency arises.

3.5. Traffic Safety

Bitzios Consulting prepared a traffic safety assessment of the proposal against the relevant provisions in Chapter 3 and Schedule 5 IESEPP 2021 and the Transport Corridor Advertising and Signage Guidelines 2017. The traffic safety assessment is reproduced in Appendix C of the SEE. The key conclusions from the assessment are reproduced below:

- *There is currently no advertising sign at the site where the digital sign is proposed*
- *The proposed sign will not obstruct or interfere with the view of or restrict sight distances to any intersections, traffic control devices, vehicles or cyclists given its location above the road*
- *The driving approach to the proposed sign is relatively straight with no on ramps or off ramps in this zone*
- *The proposed sign is not expected to reduce the safety of any traffic or cyclist movements given its location. It will be located within a driver's ordinary field of view when approaching from the north-west and a glance to the sign will still permit co-incident recognition of vehicle and cyclist movements in the forward view in a free-flowing environment where rapid multi-factor decision making is not required*
- *The proposed sign is in the ordinary field of view of a driver, and therefore would not distract a driver's view from the forward roadway where driving-critical events could simultaneously be recognised in the extremely unlikely event that they occur*
- *A review of available five years of crash data within 200m of the site (the distance at which advertisements could be clearly recognised) showed a very low crash rate, considering that the M2 is a high-speed, high-volume motorway. Furthermore, the data does not identify an unusually high or inherently high crash risk on approach to the site that would not deem the proposed location unsuitable*
- *The proposed sign complies with the requirements of the IESEPP 2021 and Transport for NSW Advertising Sign Safety Assessment Matrix in terms of obscurity, positioning and sign clutter. Refer Appendix C.*
- *The proposed digital sign should be conditioned to comply with the requirements of the Signage Guidelines in terms of display and operational requirements, including:*
  - *Message displays remaining static*
  - *Sequencing of displays or messaging*
  - *Images not being mistaken for a traffic control device*
  - *Minimum dwell time Transition of displays*
  - *Luminance levels*
  - *The use of flickering, flashing or moving content*
  - *Quantity/size of text used on message displays*
  - *A re-assessment of the digital sign should any detrimental effects on road safety be identified post installation*
  - *Maintaining a log of the sign's activity*
  - *A road safety check after 12 months but within 18 months of the sign's installation.*

Given the above conclusions, the digital sign should be approved as proposed.

4. STATUTORY COMPLIANCE

4.1. Introduction

This section assesses the compliance of the proposal against the relevant statutory planning and policy controls, specifically the following Environmental Planning Instruments (EPIs) and policy documents:

STATE PLANNING CONTROLS

- Chapter 3 and Schdule 5of Industry and Employment SEPP 2021 (Chapter 3 and Schedule 5);
- Transport Corridor Outdoor Advertising and Signage Guidelines 2017 (Transport Corridor Guidelines 2017); and
- State Environmental Planning Policy (Transport and Infrastructure) 2021.

RYDE LOCAL PLANNING CONTROLS

- Ryde Local Environmental Plan 2014 (RLEP 2014).

4.2. Chapter 3 Industry & Employment State Environmental Planning Policy 2021

State Environmental Planning Policy No. 64 Advertising and Signage (SEPP 64) was gazetted on 16 March 2001. The policy introduced a comprehensive range of provisions to ensure that advertising and signage is well located, compatible with the desired amenity of an area and is of a high quality and finish. The SEPP does not regulate the content of signs. SEPP 64 applied to all signage, advertisements that advertise or promote any goods, services or events and any structure that is used for the display of signage that is permitted under another EPI.

On the 1st March 2022, the NSW Government incorporated the provisions of SEPP 64 into Chapter 3 and Schedule 5 of the Industry and Employment SEPP 2021) (IESEPP 2021).

To accommodate the introduction of digital technology for signage purposes, Draft Digital Guidelines were formulated by Transport for NSW, the NSW DPE and the Outdoor Media Association. The Draft Digital Guidelines have been incorporated into the Transport Corridor Outdoor Advertising Signage Guidelines and were placed on public exhibition between December 2015 and January 2016. The Draft Guidelines were formally adopted by the NSW DPE in November 2017.

This proposal is categorised as a 'bridge sign' under the provisions of Chapter 3. Clause 3.22 sets out the provisions that relate to the display of bridge advertisements.

An assessment of the proposal against the relevant provisions of Chapter 3 is detailed on the following pages as follows:

- Section 4.2.1 Statutory Compliance Chapter 3.
- Section 4.2.2 Statutory Compliance Chapter 3 Schedule 5 Assessment Criteria.
- Section 4.2.3 Compliance with Transport Corridor Guidelines 2017, inclusive of bridge design criteria, road safety controls and illumination requirements.

4.2.1.Chapter 3 Statutory Compliance

TABLE 4.1 CHAPTER 3 STATUTORY COMPLIANCE

LEGISLATION	COMMENTS	COMPLIANCE YES/ NO
Part 3.1 Preliminary		
3.1 Aims and Objectives		
1) This Chapter aims— (a) to ensure that signage (including advertising)— (i) is compatible with the desired amenity and visual character of an area, and (ii) provides effective communication in suitable locations, and (iii) is of high quality design and finish, and (b) to regulate signage (but not content) under Part 4 of the Act, and (c) to provide time-limited consents for the display of certain advertisements, and (d) to regulate the display of advertisements in transport corridors, and (e) to ensure that public benefits may be derived from advertising in and adjacent to transport corridors. 2) This Chapter does not regulate the content of signage and does not require consent for a change in the content of signage.	The proposal satisfies the aims and objectives that underpin the policy. In 1999 the Applicant entered into a commercial agreement that allows for the display of up to forty five (45) signage installations along the M2 Corridor. To date sixteen (16) signs have been developed along the 21 kilometre length of the Motorway. The Applicant has prepared a Digital Signage Strategy and the subject site is one of seven (7) new locations being progressed as stage 3 signage works. This proposal is consistent with the urban design look that has been developed for signage installations along the M2. The proposal includes decorative metal cladding that will give the raw concrete bridge deck of the western elevation a contemporary look to complement the eastern elevation of the bridge that currently displays a digital sign. Independent and rigorous road safety investigations support the introduction of a digital sign above the inbound traffic lanes on the M2. The proposal is fully compliant with TfNSW road safety regulations. (Refer Traffic Safety Assessment in Appendix C). An independent Lighting Impact Assessment has confirmed that the sign is fully compliant with the relevant Transport Corridor Guidelines 2017 and AS 4282 illumination controls. (Refer LIA Assessment in Appendix D). It will not give rise to any glare or residential amenity impacts.	Yes

LEGISLATION	COMMENTS	COMPLIANCE YES/NO
	The M2 is located in a cutting where it underpasses Lane Cove Road. This ensures that view lines to the proposed digital sign are contained to the road corridor. The sign is of an appropriate scale and proportion relative to the architecture of the host structure and sits within the profile of the bridge overpass. The sign does not protrude above the dominant skyline and will not adversely impact the scenic quality of the visual catchment. The visual impact from the public and private domain is considered to be low and as such no adverse visual impact is created to the amenity of these areas. The digital conversion will provide a media to display dynamic and creative curated content that incorporates third party advertisements and road safety messaging. This content will add visual interest to the journey along the Motorway. The Applicant and Transurban has provided a Public Benefit Proposal to TfNSW which is under discussion and negotiation. The Public Benefit Proposal is explained in Section 3.4.1 of this SEE.	
3.2 Definitions		
(1) In this Chapter- **advertisement** means signage to which Part 3 applies and includes any advertising structure for the advertisement.	The proposal is defined as an advertisement to which Part 3.3 applies.	Yes
advertising display area means, subject to subsection (2), the area of an advertisement or advertising structure used for signage, and includes any borders of, or surrounds to, the advertisement or advertising structure, but does not include safety devices, platforms or lighting devices associated with advertisements or advertising structures.	The proposed digital sign measures 12.58 metres by 3.3 metres, which equates to a display area of 41.51 sqm. Manboom or their contractor will display a logo next to the screen and this measures 0.25 sqm. The combined total advertising display area of the proposed digital sign is 41.76 sqm.	Yes

LEGISLATION	COMMENTS	COMPLIANCE YES/NO
classified road means a road classified under Part 5 of the Roads Act 1993.	The M2 is a Classified Road.	Yes
road corridor means the following land— a) land comprising a classified road or a road known as the Sydney Harbour Tunnel, the Eastern Distributor, the M2 Motorway, the M4 Motorway, the M5 Motorway, the M7 Motorway, the Cross City Tunnel or the Lane Cove Tunnel, and associated road use land that is adjacent to such a road, b) land zoned for road purposes under an environmental planning instrument, c) land identified as a road corridor in an approval of a transitional Part 3A project (within the meaning of Schedule 6A to the Act), an approval to carry out State significant infrastructure or a development consent given by the Minister.	The site is road corridor land as it forms part of the M2 Motorway.	Yes
signage means all signs, notices, devices, representations and advertisements that advertise or promote any goods services or events and any structure or vessel that is principally designed for, or that is used for, the display of signage and includes— a) building identification signs, and b) business identification signs, and c) advertisements to which Part 3.3 applies, but does not include traffic signs or traffic control facilities.	The proposal is signage to which Part 3.3 of the SEPP 64 applies.	Yes
TfNSW means Transport for NSW constituted under the Transport Administration Act 1988.	TfNSW own the M2 Motorway. TfNSW has reviewed the proposal and has granted land owners consent to the lodgement of the DA.	Yes

LEGISLATION	COMMENTS	COMPLIANCE YES/ NO
transport corridor land means the following land— a) land comprising a railway corridor, b) land comprising a road corridor, c) land zoned industrial under an environmental planning instrument and owned, occupied or managed by TfNSW, Sydney Metro or RailCorp.	The site comprises a road corridor and constitutes Transport Corridor Land.	Yes
3.3 Area of application of this Chapter		
(1) This Chapter applies to the whole of the State. (2) Without limiting subsection (1), this Chapter applies to all land and structures within the State and all vessels on navigable waters. (3) Despite subsection (1), this Chapter does not apply to the following land— Land to which State Environmental Planning Policy (Kosciuszko National Park—Alpine Resorts) 2007 applies Land to which State Environmental Planning Policy (Western Sydney Parklands) 2009 applies	The Policy applies to this application.	Yes
3.4 Signage to which this Chapter applies		
1) This Chapter applies to all signage that— a. can be displayed with or without development consent under another environmental planning instrument that applies to the signage, and b. is visible from any public place or public reserve, except as provided by this Chapter. Note. Public place and public reserve are defined in section 4(1) of the Act to have the same meanings as in the Local Government Act 1993. (2) This Chapter does not apply to signage that, or the display of which, is exempt development under an environmental planning instrument that applies to it, or that is exempt development under this Chapter.	This policy applies to the proposed development application for general advertising signage on road corridor and transport corridor land. The proposed signage is visible from a public place as defined under the Local Government Act 1993. While the RLEP 2014 prohibits the use of signage on the land, this application is submitted under the provisions of Clause 3.14(1)(c) of this Chapter. Legal advice confirming that the application can be progressed under Clause 3.14 is detailed in Appendix A. This proposal is not exempt development	Yes

LEGISLATION	COMMENTS	COMPLIANCE YES /NO
3.5 Relationship with other environmental planning instruments		
In the event of an inconsistency between this Chapter and another environmental planning instrument, whether made before or after this Chapter, this Chapter prevails to the extent of the inconsistency. Note. This Chapter will have the effect of modifying, and having paramountcy over, the provisions of some other environmental planning instruments that permit the display of signage with or without development consent. This is particularly so in the case of large advertisements, being advertisements of the kind referred to in Part 3.3. This Chapter (other than section 3.14) will not override a prohibition on the display of signage that is contained in another environmental planning instrument. Because of some provisions, such as sections 3.8 and 3.19, it may add prohibitions on advertising if the advertising is proposed to be displayed in certain circumstances, such as on environmentally sensitive or environmentally significant land or in the form of a roof or sky advertisement.	The subject land constitutes transport corridor land and forms part of the M2 Motorway. Pursuant to Clause 3.14 of this Chapter, this application can be advanced notwithstanding that the land use of signage is prohibited in the SP2 Zone that applies to the Motorway under the Ryde LEP 2014. Refer to the Legal Advice in Appendix A.	Yes
Part 3.2 Signage Generally		
3.6 Granting of consent to signage		
A consent authority must not grant development consent to an application to display signage unless the consent authority is satisfied— a) that the signage is consistent with the objectives of this Chapter as set out in section 3.1(1)(a), and b) that the signage the subject of the application satisfies the assessment criteria specified in Schedule 5. c)	It is our professional opinion based on our assessment of the application that the proposal satisfies the objectives of the policy as set out in Clause 3 and the assessment criteria specified in Schedule 5. An assessment of the proposal against Schedule 5 is detailed within Table 4.2.	Yes
Part 3.3 Advertisements		
Division 1 General		
3.7 Advertisements to which this part applies		
(1) This Part applies to all signage to which this Chapter applies, other than the following—	The proposal would fall under Part 3.3 of Chapter 3.	Yes

LEGISLATION	COMMENTS	COMPLIANCE YES/ NO
a) business identification signs, b) building identification signs, c) signage that, or the display of which, is exempt development under an environmental planning instrument that applies to it, d) signage on vehicles. (2) Despite subsection (1)(d), section 3.26 applies to signage on a trailer (within the meaning of the Road Transport Act 2013).		
3.8 Prohibited advertisements		
(1) Despite the provisions of any other environmental planning instrument, the display of an advertisement is prohibited on land that, under an environmental planning instrument, is within any of the following zones or descriptions— • environmentally sensitive area • heritage area (excluding railway stations) • natural or other conservation area • open space • waterway • residential (but not including a mixed residential and business zone, or similar zones) scenic protection area • national park • nature reserve (2) This section does not apply to the following— a) the Mount Panorama Precinct, b) the display of an advertisement at a public sporting facility situated on land zoned public recreation under an environmental planning instrument, being an advertisement that provides information about the sponsors of the teams or organisations using the sporting facility or about the products of those sponsors.	The sign is not located in prohibition area.	Yes

LEGISLATION	COMMENTS	COMPLIANCE YES/ NO
Division 2 Control of advertisements		
3.9 Requirement for consent		
A person must not display an advertisement, except with the consent of the consent authority or except as otherwise provided by this Chapter.	Consent is being sought from the Minister for Planning.	Yes
3.10 Consent Authority		
For the purposes of this Chapter, the consent authority is— (a) the council of a local government area in the case of an advertisement displayed in the local government area (unless paragraph (c), (d) or (e) applies), or (b) TfNSW in the case of an advertisement displayed on a vessel, or (c) the Minister for Planning in the case of an advertisement displayed by or on behalf of RailCorp, NSW Trains, Sydney Trains, Sydney Metro or TfNSW on a railway corridor, or (d) the Minister for Planning in the case of an advertisement displayed by or on behalf of RMS on— (i) a road that is a freeway or tollway (under the Roads Act 1993) or associated road use land that is adjacent to such a road, or (ii) a bridge constructed by or on behalf of TfNSW on any road corridor, or (iii) land that is owned, occupied or managed by TfNSW, or (e) the Minister for Planning in the case of an advertisement displayed on transport corridor land comprising a road known as the Sydney Harbour Tunnel, the Eastern Distributor, the M2 Motorway, the M4 Motorway, the M5 Motorway, the M7 Motorway, the Cross City Tunnel or the Lane Cove Tunnel, or associated road use land that is adjacent to such a road.	The Minister for Planning is the consent authority as the proposed advertisement will be displayed on transport corridor land comprising the M2 Motorway.	Yes

LEGISLATION	COMMENTS	COMPLIANCE YES/ NO
3.11 Matters for consideration		
1) A consent authority (other than in a case to which subsection (2) applies) must not grant consent to an application to display an advertisement to which this Chapter applies unless the advertisement or the advertising structure, as the case requires— a) is consistent with the objectives of this Chapter as set out in section 3.1(1)(a), and b) has been assessed by the consent authority in accordance with the assessment criteria in Schedule 5 and the consent authority is satisfied that the proposal is acceptable in terms of its impacts, and c) satisfies any other relevant requirements of this Chapter. 2) If the Minister for Planning is the consent authority or section 3.16 or 3.22 applies to the case, the consent authority must not grant consent to an application to display an advertisement to which this Chapter applies unless the advertisement or the advertising structure, as the case requires— a) is consistent with the objectives of this Chapter as set out in section 3.1(1)(a), and b) has been assessed by the consent authority in accordance with the assessment criteria in Schedule 5 and in the Guidelines and the consent authority is satisfied that the proposal is acceptable in terms of— • design, and • road safety, and • the public benefits to be provided in connection with the display of the advertisement, and	It is our professional opinion that the proposal is consistent with the objectives of the policy contained within Clause 3.1. The proposal has been assessed in accordance with the criteria in Schedule 5. This assessment is detailed in Table 4.2. The Proposal complies in full with the design criteria for bridge signs that is set out in the Transport Corridor Guidelines 2017. Refer Tables 4.3 and 4.4. The proposal has been assessed in accordance with the relevant criteria detailed in the Transport Corridor Guidelines 2017. Refer Table 4.5. A traffic safety assessment has been undertaken in accordance with the Advertisement and Road Safety Provisions detailed in Section 3 of the Guidelines 2017. This assessment is detailed in the Bitzios Consulting Report reproduced at Appendix C. The assessment demonstrates that the proposal will not give rise to any traffic safety concerns. The Applicant has provided a Statement to satisfy the public benefit test provision in Section 3.4 of this report.	Yes

LEGISLATION	COMMENTS	COMPLIANCE YES/ NO
c) satisfies any other relevant requirements of this Chapter. 2) In addition, if section 3.16 or 3.22 applies to the case, the consent authority must not grant consent unless arrangements that are consistent with the Guidelines have been entered into for the provision of the public benefits to be provided in connection with the display of the advertisement.		
3.12 Duration of consents		
(1) A consent granted under this Part ceases to be in force— (a) on the expiration of 15 years after the date on which the consent becomes effective and operates in accordance with section 83 of the Act, or (b) if a lesser period is specified by the consent authority, on the expiration of the lesser period. (2) The consent authority may specify a period of less than 15 years only if— (a) before the commencement of this Part, the consent authority had adopted a policy of granting consents in relation to applications to display advertisements for a lesser period and the duration of the consent specified by the consent authority is consistent with that policy, or (b) the area in which the advertisement is to be displayed is undergoing change in accordance with an environmental planning instrument that aims to change the nature and character of development and, in the opinion of the consent authority, the proposed advertisement would be inconsistent with that change, or (c) (the specification of a lesser period is required by another provision of this Chapter.	This application seeks a 15 year consent term. A 15 year consent term is considered to be appropriate given the circumstances surrounding this application.	Yes

LEGISLATION	COMMENTS	COMPLIANCE YES/ NO
Division 3 Particular advertisements		
3.14 Transport corridor land		
(1) Despite section 3.8(1) and the provisions of any other environmental planning instrument, the display of an advertisement on transport corridor land is permissible with development consent in the following cases— (a) the display of an advertisement by or on behalf of RailCorp, NSW Trains, Sydney Trains, Sydney Metro or TfNSW on a railway corridor, (b) the display of an advertisement by or on behalf of TfNSW on— • a road that is a freeway or tollway (under the Roads Act 1993) or associated road use land that is adjacent to such a road, or • a bridge constructed by or on behalf of TfNSW on any road corridor, or • land that is owned, occupied or managed by TfNSW and that is within 250 metres of a classified road, (c) the display of an advertisement on transport corridor land comprising a road known as the Sydney Harbour Tunnel, the Eastern Distributor, the M2 Motorway, the M4 Motorway, the M5 Motorway, the M7 Motorway, the Cross City Tunnel or the Lane Cove Tunnel, or associated road use land that is adjacent to such a road. (2) Before determining an application for consent to the display of an advertisement in such a case, the Minister for Planning may appoint a design review panel to provide advice to the Minister concerning the design quality of the proposed advertisement.	The M2 Motorway land is zoned SP2 under the RLEP 2014. The land use of 'signage' is prohibited in the SP2 Zone. Clause 3.14(1)(c) makes advertising development permissible with development consent, despite any prohibition in an LEP, if the proposed advertising development is: (a) Within transport corridor land. (b) Located within the M2 Motorway transport corridor land. As the location of the proposed development falls within the transport corridor of the M2 Motorway, this application is being submitted under the provisions of Clause 3.14. Legal advice confirming that the application can be submitted under the provisions of Clause 3.14 is provided in Appendix A.	Yes

LEGISLATION	COMMENTS	COMPLIANCE YES/NO
(3) The Minister must not grant consent to the display of an advertisement in such a case unless— (a) the advice of any design review panel appointed by the Minister has been considered by the Minister, and (b) the Minister is satisfied that the advertisement is consistent with the Guidelines. (4) This section does not apply to the display of an advertisement if the Minister determines that display of the advertisement is not compatible with surrounding land use, taking into consideration any relevant provisions of the Guidelines.		
3.15 Advertisements with display area greater than 20 square metres or higher than 8 metres above ground		
(1) This section applies to an advertisement— (a) that has a display area greater than 20 square metres, or (b) (b) that is higher than 8 metres above the ground. (2) The consent authority must not grant consent to an application to display an advertisement to which this section applies unless— (a) the applicant has provided the consent authority with an impact statement that addresses the assessment criteria in Schedule 5 and the consent authority is satisfied that the proposal is acceptable in terms of its impacts, and (b) the consent authority gave a copy of the application to TfNSW before the application is exhibited if the application is an application for the display of an advertisement to which section 3.16 applies.	The proposed sign has a signage area of 40.186 sqm inclusive of a logo. Accordingly, Clause 3.15 would apply to this proposal. Table 4.2 addresses the assessment criteria contained in Schedule 5 of this Chapter. It is our professional opinion that the proposal is acceptable in terms of its impact. The applicant requests the Minister for Planning to have regard to the mandatory requirements for advertised development as prescribed in the Environmental Planning and Assessment Act 1979. The Minister of Planning is the consent authority and therefore the terms of Clause 3.16 do not apply.	Yes

LEGISLATION	COMMENTS	COMPLIANCE YES/ NO
3.16 Advertisements greater than 20 square metres and within 250 metres of, and visible from, a classified road		
(1) This section applies to the display of an advertisement to which section 3.15 applies, that is within 250 metres of a classified road any part of which is visible from the classified road. (2) The consent authority must not grant development consent to the display of an advertisement to which this section applies without the concurrence of TfNSW. (3) In deciding whether or not concurrence should be granted, TfNSW must take into consideration— (a) the impact of the display of the advertisement on traffic safety, and (b) the Guidelines. (4) If TfNSW has not informed the consent authority within 21 days after the copy of the application is given to it under section 3.15(2)(b) that it has granted, or has declined to grant, its concurrence, TfNSW is taken to have granted its concurrence. (5) Nothing in this section affects section 3.14. (6) This section does not apply when the Minister for Planning is the consent authority.	In accordance with Clause 3.16(6), the Minister of Planning is the consent authority and the terms of Clause 3.16 do not apply to this application. As this DA involves works to a public road the concurrence of TfNSW is required under Section 138 of the Roads Act 1993.	Yes
3.18 Location of certain names and logos		
(1) The name or logo of the person who owns or leases an advertisement or advertising structure may appear only within the advertising display area. (2) If the advertising display area has no border or surrounds, any such name or logo is to be located—	This application anticipates the display of a logo next to the digital sign. The area of the name plate will comply with the 0.25 sqm requirement. The area of the name plate has been included in the display area calculations of the sign which is 41.76 sqm.	Yes

LEGISLATION	COMMENTS	COMPLIANCE YES/ NO
(a) within the advertisement, or (b) within a strip below the advertisement that extends for the full width of the advertisement. (3) The area of any such name or logo must not be greater than 0.25 square metres (4) The area of any such strip is to be included in calculating the size of the advertising display area.		
3.22 Advertisements on bridges		
(1) A person may, with the consent of the consent authority, display an advertisement on a bridge. (2) The consent authority may grant consent only if the consent authority is satisfied that the advertisement is consistent with the Guidelines.	The consent authority for this application is the Minister for Planning. The application is consistent with the Transport Corridor Advertising Guidelines 2017 as set out in Tables 4.3, 4.4 and 4.5.	Yes

Source: Compiled by Urban Concepts 2022

4.2.2.Chapter 3 Schedule 5 Compliance

TABLE 4.2 SCHEDULE 5 COMPLIANCE

SCHEDULE 5 CRITERIA	COMMENT	COMPLIANCE YES/ NO
1. CHARACTER OF THE AREA Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located? Is the proposal consistent with a particular theme for outdoor advertising in the area or locality	There is an existing digital sign located on the eastern elevation of the Lane Cove bridge overpass. The proposed sign will complement the existing digital sign and will be of similiar dimensions. The proposal provides for the installation of decorative metal cladding that will enhance the raw concrete bridge deck. The cladding is consistent with the urban design look that has been developed for the corridor and which ensures all signage installations both static and digital have a cohesive streetscape appearance in the journey along the M2. The eastern elevation of the overpass has been treated with the cladding. We have considered the Draft Macquarie Park Place Strategy 2021 and the desired future character to transform Macquarie Park into a centre for innovation. We have examined the plans for Neighbourhoods 1 and 5 in the Strategy that are closest to the Motorway and in our professional opinion the introduction of the proposed digital sign is not contradictory to nor will it give rise to any adverse amenity or environmental impacts that would compromise the desired future character for these Neighbourhoods and the broader precinct. Refer to the discussion in Section 2.5 of this SEE for further explanation.	Yes
2. SPECIAL AREAS Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?	The land uses adjacent to the Lane Cove Road overpass comprise commercial and light industrial land uses to the south west associated with the Macquarie Business Park. These commercial and light industrial buildings do not have direct sight lines to the sign.	Yes

SCHEDULE 5 CRITERIA	COMMENTS	COMPLIANCE YES/ NO
	To the north west is Macquarie Gardens a high rise residential development comprising of four multi storey apartment buildings set in mature gardens. The proposed digital sign sits below the ground level of Lane Cove Road and the apartments as it is in the M2 cutting. It is separated from the residential site by the Lane Cove Road off ramp. The vertical change in height between the apartments and the proposed sign, together with the horizontal separation and local landscaping limits direct views from the apartments to the proposed sign. If the proposed sign is seen it would be as part of an elevated, long distance view and the sign would comprise only a minor part of the panorama. Extensive vegetation associated with the Motorway also acts as a visual buffer and further mitigates the visual impact of the Motorway inclusive of the proposed sign. Lighting investigations undertaken by Electrolight confirm that the illumination of the proposed sign will not raise any amenity impacts for this residential property. (Refer LIA in Appendix D).	
3. VIEWS AND VISTAS Does the proposal obscure or compromise important views? Does the proposal dominate the skyline and reduce the quality of vistas? Does the proposal respect the viewing rights of other advertisers	The digital screen sits entirely within the profile of the bridge structure and does not dominate the skyline. It does not compromise any important views. As the sign will be mounted on the bridge overpass the top of the digital sign sits just above the level of the Lane Cove Road deck. The design of the Motorway means that the digital sign sits within a cutting. This ensures that sightlines to the sign are predominantly contained to the Motorway and eastbound motorists.	Yes

SCHEDULE 5 CRITERIA	COMMENTS	COMPLIANCE YES/ NO
4. STREETSCAPE, SETTING OR LANDSCAPE Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape? Does the proposal contribute to the visual interest of the streetscape, setting or landscape? Does the proposal reduce clutter by rationalising and simplifying existing advertising Does the proposal screen unsightliness? Does the proposal protrude above buildings, structures or tree canopies in the area or locality? Does the proposal require ongoing vegetation management?	The proposed digital screen will have a landscape orientation and it sits within the profile of the western elevation of the bridge and well below the dominant skyline that is created by both buildings and local tree canopies. The sign extends less than a metre above the bridge deck which allows pedestrians crossing the bridge to still enjoy district views across the Motorway. The views enjoyed by pedestrians will remain unchanged for more than half of the length of the bridge above the western outbound traffic lanes. The proposed digital screen is one of seven (7) sites to have been selected for signage installations along the Motorway. These sites form stage 3 signage works under the 1999 signage agreement that is between the Applicant, Transurban and TfNSW. Under the Agreement up to forty five (45) signage faces can be installed. The display of signage on the M2 recognises the importance of the driver audience to the out of home (OOH) sector. The introduction and take up of digital technology by the OOH sector is in high demand by companies who want their brands to be displayed as part of digital campaigns. Since 2010 sixteen (16) signs both static and digital have been installed. This accounts for 35% of the potential take up. The introduction of additional sign faces along the Motorway has always been contemplated. For this reason the addition of seven (7) digital signs does not constitute visual clutter of the Motorway. The proposal does not necessitate any change to local landscaping or the vegetation buffers that align the Motorway. This landscaping will be managed by Transurban as part of routine maintenance works.	Yes

SCHEDULE 5 CRITERIA	COMMENTS	COMPLIANCE YES/NO
5.SITE AND BUILDING Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located? Does the proposal respect important features of the site or building, or both? Does the proposal show innovation and imagination in its relationship to the site or building, or both?	The digital sign is fully contained within the structural boundaries of the bridge overpass. The proposal incorporates metal cladding to the bridge deck which will enhance the appearance of the bridge and provide consistency with the urban design treatment of the eastern elevation.	Yes
6. ASSOCIATED DEVICES AND LOGOS WITH ADVERTISEMENTS AND ADVERTISING STRUCTURES Have any safety devices, platforms, lighting devices or logos been designed as an integral part of the signage or structure on which it is to be displayed?	The equipment required for the functioning of the LED screen, will be located at the rear of the sign and integrated into the digital signage box as shown on the detailed plans prepared by Dennis Bunt in Appendix B. An access platform 600 mm wide allows safe access to the signage cabinet and will provide secure access to the cabinet that contains the digital sign. A webcam will be installed at the front of the advertising structure. It will verify that creative copy is being displayed correctly. All content will be delivered to the site remotely via computer. A fall arrest cable will be incorporated into the design as required under the Transport Corridor Guidelines 2017.	Yes

LEGISLATION	COMMENTS	COMPLIANCE YES/ NO
7. ILLUMINATION Would illumination result in unacceptable glare? Would illumination affect safety for pedestrians, vehicles or aircraft? Would illumination detract from the amenity of any residence or other form of accommodation? Can the intensity of the illumination be adjusted, if necessary? Is the illumination subject to a curfew?	Electrolight has undertaken an illumination and lighting assessment for the proposed digital screen. This assessment is reproduced in Appendix D. The assessment has established that the proposed digital screen can operate without any unacceptable glare and in accordance with AS4282 Control of Obtrusive Effects of Outdoor Lighting. This will ensure that the proposed level of illumination will not adversely impact the amenity of any residential property. The brightness of the LED display is capable of being controlled and will be set to a fixed upper and lower operating limit. The brightness of the LED's will be automatically adjusted within these fixed limits via a local light senor. The screens will not be subject to a curfew and will operate 24 hours.	Yes
8. SAFETY Would the proposal reduce the safety for any public road? Would the proposal reduce the safety for pedestrians or bicyclists? Would the proposal reduce safety for pedestrians, particularly children, by obscuring sightlines from public areas?	A Traffic Safety Assessment has been prepared for the proposal by Bitzios Consulting, which is reproduced in Appendix C. The relevant extracts that address these criteria are reproduced below. *'The proposed digital screen will not reduce the safety of the public road because there are no crash related risks apparent in the crash data.* *While cyclists are allowed on the M2, it is a high difficulty environment, meaning few cyclists would use it and the shoulder is 3 metres wide. In any event, the change in cyclist safety risk associated with the digital signage installation is considered negligible.* *No sightlines for pedestrians and children are obscured by the proposal.'*	Yes

4.2.3. Transport Corridor Advertising and Signage Guidelines 2017

This Section addresses the compliance of the proposal against the relevant sections of the Transport Corridor Advertising and Signage Guidelines 2017 (Transport Corridor Guidelines 2017). As the Minister for Planning is the consent authority for this application the following sections of the Guidelines apply:

- Section 1.5 Table 1 Land Use Compatibility Criteria. These are addressed in Table 4.3.
- Section 1.6 Justification of the proposal. This addressed in Table 4.3.
- Section 2.3.2 Sign Placement in Transport Corridors. This is addressed in Table 4.3.
- Section 2.4 Sign Clutter. This is addressed in Table 4.3.
- Section 2.5.5 Bridge Signage controls. These are addressed in Table 4.4.
- Section 2.5.8 Digital Sign Criteria. These are addressed in Table 4.5.
- Section 3 Road Safety. Refer Traffic Safety Assessment by Bitzios Consulting in Appendix C.
- Section 3.3.3 Illumination and Reflectance. This is discussed in Section 3.3 of this SEE and the Electrolight LIA in Appendix D.
- Section 4 Public Benefit Test Provisions. This is discussed in Section 3.4 of this SEE.

TABLE 4.3

TRANSPORT CORRIDOR GUIDELINES LAND USE COMPATIBILITY & DESIGN REQUIREMENTS

GUIDELINES REQUIREMENT	COMMENT	COMPLIANCE YES/ NO
SECTION 1.5 TABLE 1 LAND USE COMPATIBILITY CRITERIA		
i. The use of outdoor advertising in a given locality should not be inconsistent with the land use objectives for the area outlined in the relevant LEP	The proposal to display a digital sign on the western elevation of the Lane Cove Road overpass is not inconsistent with the aims of the Ryde LEP 2014. While the land use of signage is prohibited development in the SP2 Zone that applies to the site, the signage installation is part of a coordinated and staged signage strategy that has been developed for the M2 Motorway. To date sixteen (16) of the possible forty five (45) advertising installations have been developed. The road safety, lighting and visual impacts of this proposal have been assessed and are found to acceptable. Consideration has been given to the desired future character of Macquarie Park under the NSW Government draft Place Strategy 2021 and the proposal is consistent with the vision to create an innovation precinct and 18 hour economy. Refer to Section 4.4 for detailed discussion against the RLEP 2014 provisions.	Yes

GUIDELINES REQUIREMENT	COMMENTS	COMPLIANCE YES/ NO
ii. Advertisements must not be placed on land where the signage is visible from the following areas, if it is likely to significantly impact on the amenity of those areas: • environmentally sensitive area • heritage area (excluding railway stations) natural or other conservation area open space (excluding sponsorship advertising at sporting facilities in public recreation zones) waterway • residential area (but not including a mixed residential and business zone, or similar zones) • scenic protection area • national park or nature reserve.	The proposed sign is located in proximity to a residential development, Macquarie Gardens which is situated to the north west of the site. The residential development has a high degree of vertical and horizontal separation from the proposed sign. The sign predominantly sits below the level of Lane Cove Road. This height differential mitigates potential view lines to the sign. If the proposed sign is seen from any of the apartments, they would be upper level apartments and it would be as part of a long distance view where the sign would comprise only a minor part of the panorama. Extensive vegetation associated with the Motorway also acts as a visual buffer and further mitigates the visual impact of the Motorway on the apartments inclusive of the proposed sign. Lane Cove National Park is located further north of the site. Due to the extensive physical separation and the intervening development, the proposed sign will not be visible from within the Park or be visible in district views of the Park.	Yes
iii. Advertising structures should not be located so as to dominate or protrude significantly above the skyline or to obscure or compromise significant scenic views or views that add to the character of the area	The proposed digital sign is wholly contained within the western elevation of the bridge overpass. It sits well below the dominant skyline created by both the buildings and tree canopy. It will not obscure or compromise scenic views of the area. It is of a height and length that enables pedestrians walking across the bridge to benefit from uninterrupted views across the Motorway.	
iv. Advertising structures should not be located so as to diminish the heritage values of items or areas of local, regional or state heritage significance.	The site is not identified as an item of local or state heritage significance and is not located within a heritage conservation area identified in the RLEP 2014.	

GUIDELINES REQUIREMENT	COMMENTS	COMPLIANCE YES/NO
v. Where possible, advertising structures should be placed within the context of other built structures in preference to non built areas. Where possible signage should be used to enhance the visual landscape. For example, signs may be positioned adjacent to, or screening, unsightly aspects of a landscape, industrial sites or infrastructure such as railway lines or power lines.	The proposed digital screen will be mounted on the western elevation of the Lane Cove Road overpass. As such it is viewed within the context of the existing bridge structure. The proposal incorporates the installation of metal cladding across the horizontal deck of the bridge. This will significantly improve the appearance of the raw concrete deck. It will give the bridge a contemporary look to complement the appearance of the eastern elevation. The materials palette and design is in keeping with the urban design look that was developed by the Applicant for all of its M2 signage installations.	Yes
SECTION 1.6 JUSTIFICATION		
Justification of the proposal – The SEE must provide a justification for the advertisement in the proposed location, taking into account the assessment criteria in Schedule 5 of the SEPP and any mitigation or management measures to minimise potential impacts of the proposed advertisement. When the Minister for Planning is the consent authority or for signs on bridges, the justification of the proposal should also consider public benefits.	The proposed digital screen is one of seven (7) new digital signs being proposed for the M2 Motorway as part of stage 3 signage works. Rigorous safety and land use investigations were undertaken to determine the suitability of each of the seven (7) sites including preliminary reviews by TfNSW. There are currently sixteen (16) signage faces along the Motorway. Under the existing commercial signage agreement for the M2 between the Applicant, Transurban and TfNSW it was anticipated that up to a maximum of forty five (45) signs could be installed pending development consent. There is an existing public benefit arrangement in place that is associated with the existing sixteen (16) signs. This arrangement provides an equally proportioned annual monetary contribution to each of the three Council's through which the Motorway passes- the City of Ryde Council, Hornsby Shire Council and the Hills Shire Council. The proposed Public Benefit Offer for the new signs is detailed in Section 3.4 of this SEE. As detailed in Table 4.2 the proposal complies in full with the Schedule 5 assessment criteria and will result in a well-designed signage installation. It will have a low visual impact and will not result in any adverse environmental, illumination or road safety impacts. In our professional opinion the proposal is justified.	Yes

GUIDELINE REQUIREMENTS	COMMENTS	COMPLIANCE YES/ NO
SECTION 2.3.2 SIGN PLACEMENT IN TRANSPORT CORRIDORS		
As a guideline, advertising in urban areas should be restricted to rail corridors, freeways, tollways or classified roads: a. within or adjacent to strategic transport corridors passing through enterprise zones, business development zones, commercial core zones, mixed use zones or industrial zones b. within or adjacent to strategic transport corridors passing through entertainment districts or other urban locations identified by the local council in a relevant strategy as being appropriate for such advertising Consideration must be given to the compatibility of advertising development with surrounding land uses and whether such advertising will impact on sensitive locations. For instance, placement of advertising along transport corridors should not result in increased visibility of signage in adjacent or surrounding residential areas.	The subject site forms part of the M2 transport corridor. As illustrated by the RLEP 2014 zoning plan extract in Figure 4.1 the site adjoins land that is zoned B7 Business Park to the south and east. B7 zoned land supports a variety of business and light industrial uses. The proposal is consistent with the NSW Governments strategic intent for Macquarie Park identified in the draft Place Strategy 2021. To the north west of the site the land is zoned R4 High Density Residential. In our appraisal of the proposal against the Schedule 5 assessment criteria (refer to Table 4.2) we examined the impact of the proposed signage on the residential zoned land. We concluded that the proposal would have a low impact and would not give rise to any adverse amenity, illumination or visual impacts. In our professional opinion the site is an appropriate location for a digital sign.	Yes
2.4 SIGN CLUTTER CONTROLS		
In assessing advertising proposals, the consent authority is to have regard to clutter: a) Multiple advertisements on a single block of land, structure or building should be discouraged as they contribute to visual clutter. b) Where there is advertising clutter, consideration should be given to reducing the overall number of individual advertisements on a site. Replacement of many small signs with a larger single sign is encouraged if the overall advertising display area is not increased.	The proposal involves the placement of a single digital sign on the western elevation of the bridge overpass. There is an existing single sign on the eastern elevation. The two signs are not viewed in the same sightline and have separate and distinct viewing audiences. The existing eastern sign is viewed by outbound motorists while the proposed western sign will be viewed by inbound motorists.The proposal will not give rise to signage clutter.	Yes

Source: Compiled by Urban Concepts 2022

TABLE 4.4

TRANSPORT CORRIDOR GUIDELINES BRIDGE SIGNAGE CRITERIA

BRIDGE SIGNAGE CRITERIA	COMMENT	COMPLIANCE YES/ NO
Advertisements on bridges must be consistent with the requirements of Clause 3.22: a. The architecture of the bridge must not be diminished.	The proposal will enhance the architecture of the bridge. Presently the western elevation presents as a raw concrete deck with exposed headstock on the western elevation. The installation of the digital screen and the associated metal cladding will give the structure a contemporary look consistent in appearance with the design treatment of the eastern elevation.	Yes
b. The advertisement must not extend laterally outside the structural boundaries of the bridge	The proposed digital screen is of landscape orientation and sits comfortably within the profile of the western elevation. It does not extend laterally outside of the structural boundaries.	Yes
c. The advertisement must not extend below the soffit of the superstructure of the bridge to which it is attached, unless the vertical clearance to the base of the advertisement from the roadway is at least 5.8 metres.	The proposal maintains the 5.75 metre clearance height above the M2 carriageway. It does not extend below the soffit.	Yes
d. On a road or pedestrian bridge, the advertisement must: i. not protrude above the top of the structural boundaries of the bridge ii. not block significant views for pedestrians or other bridge users (e.g. cyclists) iii. not create a tunnel effect, impede passive surveillance, or in any other way reduce safety for drivers, pedestrians or other bridge users.	i. The proposed digital screen sits well below the height of the safety mesh. ii. The proposed digital screen is 12.58 metres in length which is less than half of the horizontal span of the bridge. As the sign also sits well below the height of the safety mesh, the design resolution ensures that open and unimpeded views to the bridge are maintained.	Yes
g. Any advertising sign proposed for development on a bridge over a classified road requires that construction drawings be submitted for review and approval by RMS bridge engineers prior to construction to ensure all road safety requirements are met.	Noted. The Applicant has provided a copy of the development application plans and the road safety assessment to TfNSW as part of the pre-lodgement consultation for this application. The Applicant will submit all construction drawings to TfNSW prior to applying for a construction certificate.	Yes

BRIDGE SIGNAGE CRITERIA	COMMENT	COMPLIANCE YES/ NO
h. Any advertising sign proposed for development on a bridge over a road requires provision of a fall arrest system (sign and sign support structure to bridge) to ensure the sign will not detach in case of impact by an over high vehicle	The development application plans are notated that a fall arrest system will be provided.	Yes

Source: Compiled by Urban Concepts 2022

TABLE 4.5

TRANSPORT CORRIDOR GUIDELINES 2017 DIGITAL SIGN CRITERIA

DIGITAL SIGN CRITERIA	COMMENTS	COMPLIANCE YES/ NO
a. Each advertisement must be displayed in a completely static manner, without any motion, for the approved dwell time as per criterion (d) below.	Conditions can be imposed by the consent authority to ensure that the sign is completely static for the specified dwell time.	Yes
b. Message sequencing designed to make a driver anticipate the next message is prohibited across images presented on a single sign and across a series of signs	Conditions can be imposed by the consent authority to ensure there is no message sequencing that creates driver anticipation for the next message on the proposed sign or with any other signs.	Yes
c. The image must not be capable of being mistaken: i. for a prescribed traffic control device because it has, for example, red, amber or green circles, octagons, crosses or triangles or shapes or patterns that may result in the advertisement being mistaken for a prescribed traffic control device ii. as text providing driving instructions to drivers	Conditions can be imposed by the consent authority to ensure that sign content, design, imagery and messages neither replicate nor can be mistaken for a prescribed traffic control device or instruction to drivers. For example, advertisements must not instruct drivers to perform an action such as 'Stop'.	Yes
d. Dwell times for image display must not be less than: i. 10 seconds for areas where the speed limit is below 80 km/h ii. 25 seconds for areas where the speed limit is 80km/h and over	The minimum allowed dwell time is 25 seconds based on the posted speed limit of 100km/h. Conditions can be imposed by the consent authority to ensure this minimum dwell time	Yes
e. The transition time between messages must be no longer than 0.1 seconds, and in the event of image failure, the default image must be a black screen.	Conditions can be imposed by the consent authority to ensure that the sign has a transition time of no more than 0.1 seconds and a black screen in the event of image failure	Yes

DIGITAL SIGN CRITERIA	COMMENTS	COMPLIANCE YES/ NO
f. Luminance levels must comply with the requirements in Section 3 below	This area is Zone 3 as categorised in Section 3.3 of the Signage Guidelines. Acceptable luminance levels for this zone as specified in Table 6 of the Signage Guidelines are: no limit (full sun on face of signage), 6000cd/sqm (daytime), 700cd/sqm (twilight and inclement weather) and 350cd/sqm (night-time). Conditions can be imposed by the consent authority specifying maximum allowable luminance levels.	Yes
g. The images displayed on the sign must not otherwise unreasonably dazzle or distract drivers without limitation to their colouring or contain flickering or flashing content.	Conditions can be imposed by the consent authority to ensure that the sign's images comply with requirements to not contain flickering or flashing content.	Yes
h. The amount of text and information supplied on a sign should be kept to a minimum (e.g. no more than a driver can read at a short glance).	Conditions can be imposed by the consent authority to ensure that minimal text and information is supplied on a sign no more than a driver can read at a short glance.	Yes
i. Any sign that is within 250m of a classified road and is visible from a school zone must be switched to a fixed display during school zone hours.	N/A – The sign is not visible from a school zone.	Yes
j. Each sign proposal must be assessed on a case-by-case basis including replacement of an existing fixed, scrolling or tri-vision sign with a digital sign, and in the instance of a sign being visible from each direction, both directions for each location must be assessed on their own merits.	All relevant traffic directions have been assessed on their own merits.	Yes
k. At any time, including where the speed limit in the area of the sign is changed, if detrimental effect is identified on road safety post installation of a digital sign, RMS reserves the right to re-assess the site using an independent RMS-accredited road safety auditor. Any safety issues identified by the auditor and options for rectifying the issues are to be discussed between RMS and the sign owner and operator.	Noted.	Yes

DIGITAL SIGN CRITERIA	COMMENTS	COMPLIANCE YES/ NO
l. Sign spacing should limit drivers' view to a single sign at any given time with a distance of no less than 150m between signs in any one corridor. Exemptions for low speed, high pedestrian zones or CBD zones will be assessed by RMS as part of their concurrence role.	No other sign is visible less than 150 metres.	Yes
m. Signs greater than or equal to 20sqm must obtain RMS concurrence and must ensure the following minimum vertical clearances; i. 2.5m from lowest point of the sign above the road surface if located outside the clear zone ii. 5.5m from lowest point of the sign above the road surface if located within the clear zone (including shoulders and traffic lanes) or the deflection zone of a safety barrier if a safety barrier is installed. If attached to road infrastructure (such as an overpass), the sign must be located so that no portion of the advertising sign is lower than the minimum vertical clearance under the overpass or supporting structure at the corresponding location.	As this DA involves works to a public road the concurrence of TfNSW is required under Section 138 of the Roads Act 1993. The Applicant advises that the proposed digital sign is located above the minimum vertical clearance height recognised along the M2 Motorway.	Yes
n. An electronic log of a sign's operational activity must be maintained by the operator for the duration of the development consent and be available to the consent authority and/ or RMS to allow a review of the sign's activity in case of a complaint.	Conditions can be imposed by the consent authority to ensure that an electronic log is kept for the duration of the consent and be available to the consent authority and/or TfNSW for review in case of a complaint.	Yes
o. A road safety check which focuses on the effects of the placement and operation of all signs over 20sqm must be carried out in accordance with Part 3 of the RMS Guidelines for Road Safety Audit Practices after a 12 month period of operation but within 18 months of the signs installation. The road safety check must be carried out by an independent RMS-accredited road safety auditor who did not contribute to the original application documentation. A copy of the report is to be provided to RMS and any safety concerns identified by the auditor relating to the operation or installation of the sign must be rectified by the applicant. In cases where the applicant is the RMS, the report is to be provided to the Department of Planning and Environment as well.	Conditions can be imposed by the consent authority for a road safety check to be carried out after 12 months but within 18 months of the sign's installation.	Yes

Source: Bitzios Consulting 2022 Refer Appendix C of SEE

4.3. State Environmental Planning Policy (Transport and Infrastructure) 2021

The compliance of the proposal against the relevant provisions of the SEPP are detailed in Table 4.6.

TABLE 4.6

TRANSPORT AND INFRASTRUCTURE SEPP 2021

LEGISLATION	COMMENT
Subdivision 2 Development in or adjacent to road corridors and road reservations	
2.119 Development with frontage to classified road	
(1) The objectives of this section are— (a) to ensure that new development does not compromise the effective and ongoing operation and function of classified roads, and (b) to prevent or reduce the potential impact of traffic noise and vehicle emissions on development adjacent to classified roads.	(a) Bitzios Consulting has assessed the traffic safety impact of the proposal and has confirmed that it can comply with all relevant traffic safety requirements and will not adversely impact the safe and efficient operation of the M2 Motorway. TfNSW has reviewed the traffic safety implications of the proposal and advised the Applicant that the application can proceed to lodgement. Land owner's consent has been provided by TfNSW and is submitted under separate cover. (b) The proposal works constitute a digital advertising sign. The erection and operation of the sign will not contribute to traffic noise. The nature of the work is such that it does not generate traffic in its own right.
(2) The consent authority must not grant consent to development on land that has a frontage to a classified road unless it is satisfied that: (a) where practicable and safe, vehicular access to the land is provided by a road other than the classified road, and (b) the safety, efficiency and ongoing operation of the classified road will not be adversely affected by the development as a result of— (i) the design of the vehicular access to the land, or (ii) the emission of smoke or dust from the development, or (iii) the nature, volume or frequency of vehicles using the classified road to gain access to the land, and	(a) The proposed development is not a traffic-generating development. The servicing of the bridge signs, when required, can be undertaken from the bridge deck. The freestanding Eden Gardens sign can be serviced from the road reserve. (b) Bitzios Consulting has assessed the traffic safety impact of the proposal and has confirmed that it can comply with all relevant traffic safety requirements and will not adversely impact the safe and efficient operation of the M2 Motorway.

LEGISLATION	COMMENTS
(c) the development is of a type that is not sensitive to traffic noise or vehicle emissions, or is appropriately located and designed, or includes measures, to ameliorate potential traffic noise or vehicle emissions within the site of the development arising from the adjacent classified road.	(c) The proposed development is a digital advertising signage and is not sensitive to traffic noise or vehicle emissions.
2.121 Excavation in or immediately adjacent to corridors	
(1) This section applies to development that involves the penetration of ground to a depth of at least 3m below ground level (existing) on land that is the road corridor of any of the following roads or road projects (as described in Schedule 2)— (a)the Eastern Distributor, (b)the Cross City Tunnel, (c)the Lane Cove Tunnel, (d) the Tugun Bypass, (e) the Liverpool—Parramatta Transitway, (f) the North-West Sydney Transitway Network, (g) the Gore Hill Freeway, (h) the Western Distributor, (i) Southern Cross Drive, (j) the Cahill Expressway, (k) General Holmes Drive, (l) the Hume Motorway, (m) the M1 Pacific Motorway, (n) the M2, (o) the M4, (p) the M5, (q) the M4–M5 link, (r) the M7, (s) NorthConnex, (t) the Sydney Harbour Tunnel, (u) the King Georges Road Interchange, (v) the Pacific Highway. (2) Before determining a development application (or an application for modification of a consent) for development to which this section applies, the consent authority must—	The stage 3 digital signage applications will not require any excavation works that extend at least 3 metres below ground level. Of the seven digital signs that are being proposed six (6) will be bridge-mounted signs (Lane Cove Road, Beecroft Road, Murray Farm Road, Cropley Drive, Windsor Road and Ixion Road Pedestrian Bridge). The Eden Gardens Sign at Macquarie Park is located on road corridor land and will require excavation for its footings. The extent of excavation will not extend to 3 metres below ground level and is estimated at 2 metres. Accordingly, this section does not apply to the stage 3 digital signage DA's.

LEGISLATION	COMMENTS
(a) give written notice of the application to TfNSW within 7 days after the application is made, and (b) take into consideration— (i) any response to the notice that is received within 21 days after the notice is given, and (ii) any guidelines that are issued by the Planning Secretary for the purposes of this section and published in the Gazette, and (iii) any implications of the ground penetration for the structural integrity of the road or project, and (iv) any cost implications for the road or project of the ground penetration. (3) The consent authority must provide TfNSW with a copy of the determination of the application within 7 days after the determination is made.	

Source: Complied by Urban Concepts 2023

4.4. Local Planning Provisions

The site is located within the City of Ryde Local Government Area. Land use planning for the site is controlled under the RLEP 2014. The RLEP 2014 was gazetted on the 12 September 2014. It is the existing environmental planning instrument that applies to the subject land. The compliance of the proposal against the relevant provisions of the RLEP 2014 is discussed below.

RYDE LEP 2014

Aims of the Plan

' (aa) to protect and promote the use and development of land for arts and cultural activity, including music and other performance arts,

(a) to encourage a range of development, including housing, employment and recreation, that will accommodate the needs of the existing and future residents of Ryde,

(b) to provide opportunities for a range of housing types that are consistent with adjoining development and the existing environmental character of the locality,

(c) to foster the environmental, economic, social and physical development of Ryde so that it develops as an integrated, balanced and sustainable city,

(d) to identify, conserve and promote Ryde's natural and cultural heritage as the framework for its identity, prosperity, liveability and social development,

(e) to improve access to the city, minimise vehicle kilometres travelled, facilitate the maximum use of public transport and encourage walking and cycling,

(f) to protect and enhance the natural environment, including areas of remnant bushland in Ryde, by incorporating principles of ecologically sustainable development into land use controls,

(g) to preserve and improve the existing character, amenity and environmental quality of the land to which this Plan applies,

(h) in relation to economic activities, to provide a hierarchy of retail, commercial and industrial activities that enable employment capacity targets to be met, provide employment diversity and are compatible with local amenity.'

COMMENT

The proposal does not raise any issues that are contradictory to the aims that underpin the RLEP 2014:

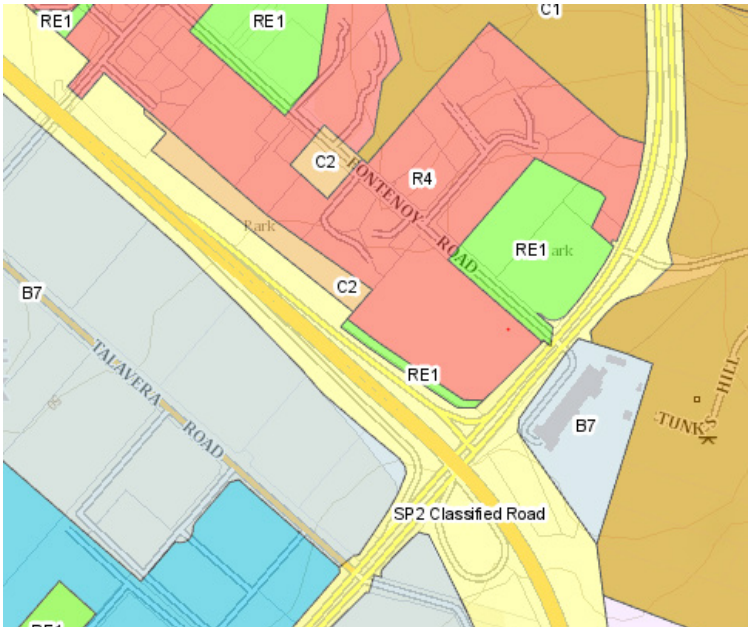
- Independent road safety investigations have confirmed that the introduction of a digital sign on the western elevation of the Lane Cove Road overpass above the M2 will not impact the efficient and effective operation of the Motorway and will not raise safety issues for pedestrians using the bridge footpaths**.**
- Lighting investigations confirm that the sign will not adversely impact the amenity of the adjacent residential development (Macquarie Gardens) to the north west of the site.
- Visual impact investigations have confirmed that the sign would have a low level of impact on district views.
- The desired future character for Macquarie Park under the Draft Place Strategy, indicates that the proposed land use vision is to evolve the Precinct into a centre for innovation. The Strategy plans for proposed Neighbourhoods 1 and 5 that are parallel to the Motorway to the south of the sign, indicate that no additional housing is planned in proximity to the Motorway. The proposed sign is compatible with the future amenity that is being contemplated for of these areas.

Land Use Zoning

The subject site is zoned SP2 Infrastructure (Classified Road) as indicted on the extract of the land use zoning map that is reproduced at Figure 4.1.

FIGURE 4.1

RYDE LOCAL ENVIRONMENTAL PLAN 2014 EXTRACT



Source: E-Spatial Planning Viewer NSW DPE 2022

1. *Objectives of zone*

   - *To provide for infrastructure and related uses.*
   - *To prevent development that is not compatible with or that may detract from the provision of infrastructure.*
   - *To ensure the orderly development of land so as to minimise any adverse effect of development on other land uses.*

2. *Permitted without consent*

   Nil

3. *Permitted with consent*

   Aquaculture; Roads; The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose

4. *Prohibited*

   Any development not specified in item 2 or 3

COMMENT

The land use of signage (inclusive of advertising) is not a permissible use in the SP2 Infrastructure Zone under the provisions of the RLEP 2014. Notwithstanding the provisions of the current LEP, the display of signage along the M2 was always proposed as demonstrated by the execution of the commercial agreement between the Applicant, the Hills Motorway and the NSW Government in 1999. A signage master plan and urban design strategy was developed for the Motorway and guided the design and planning of the existing sixteen (16) signage installations (both static lightbox and digital) developed between 2010 and 2017 as part of the stage 1 and stage 2 works. This application is one of seven (7) sites that will form stage 3 signage works for the M2.

As the subject site constitutes road corridor and transport corridor land associated with the M2 Motorway, Clause 3.14(1)(c) of Chapter 3 IESEPP 2021 enables a development application to be considered for the display of an advertisement not withstanding it is a prohibited land use under the RLEP 2014. Legal advice confirming that Clause 3.14(1)(c) can be relied upon for this application is provided in Appendix A. An extract from that advice is reproduced below:

'Section 3.14(1)(c) makes advertising development permissible with development consent, despite any prohibition in an LEP, if the proposed advertising development is:

(a) Within transport corridor land. This is defined as: transport corridor land means the following land—

(a) land comprising a railway corridor,

(b) land comprising a road corridor,

(c) land zoned industrial under an environmental planning instrument and owned, occupied or managed by TfNSW, Sydney Metro or RailCorp.

(b) Located within the M2 Motorway transport corridor land.

On the basis of our instructions as to the location of the proposed development within the transport corridor of the M2 Motorway, the development is permissible with consent.'

5. ENVIRONMENTAL ASSESSMENT

The proposal has been assessed having regard to the relevant Matters of Consideration under Section 4.15(1) of the Environmental Planning and Assessment Act 1979. The Heads of Consideration are reproduced below:

'4.15 Evaluation (cf previous s 79C)

(1) Matters for consideration--general In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:

(a) the provisions of:

(i) any environmental planning instrument, and

(ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and

(iii) any development control plan, and

(iiia) any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4, and

(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), that apply to the land to which the development application relates,

(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,

(c) the suitability of the site for the development,

(d) any submissions made in accordance with this Act or the regulations,

(e) the public interest.'

5.1. Section 4.15(1) (a) Environmental Planning Instruments, Proposed Instruments, DCPs, Planning Agreements and the Regulations

The proposal is defined as 'signage' under the RLEP 2014. Signage is a prohibited use in the SP2 Infrastructure Zone that applies to the site. As signage is a prohibited use, the application is submitted under Clause 3.14 of Chapter 3 in IESEPP 2021. Chapter 3 and the associated Transport Corridor Guidelines 2017 are the relevant statutory and policy considerations for this proposal. A robust assessment against these controls is contained in Section 4 of this SEE. Legal advice confirming that this application can rely on the provisions of Clause 3.14(1)(c) is provided in Appendix A.

We have considered the proposal against the aims that underpin the RLEP 2014. We find the proposal to be satisfactory as it does not contradict the aims that underpin the intent for future land use planning in the Ryde LGA.

We have also reviewed the strategic intent for the Macquarie Park Corridor that is detailed in the draft Macquarie Park Place Strategy 2021. This review is detailed in Section 2 and Section 4.4 of this SEE. The proposed sign is compatible with the future land use planning and amenity being contemplated for Macquarie Park and the overriding vision for it to be a centre of innovation.

The Regulations have been considered to the extent that they are applicable to this application and the NSW DPE will also consider them as part of their assessment and apply conditions as required. It is our professional opinion that the proposal can be supported on statutory grounds.

5.2. Section 4.15 (1) (b) Other Impacts of the Development

5.2.1. Adjoining Development

The subject site forms part of the M2 transport corridor. As illustrated by the RLEP 2014 zoning plan extract in Figure 4.1 the site adjoins land that is zoned B7 Business Park to the south and east. B7 zoned land supports a variety of business and light industrial uses.

The proposal is consistent with the NSW Governments strategic intent for the Macquarie Park Business lands identified in the draft Macquarie Place Strategy 2021 and raises no matters that would jeopardise the achievement of the overarching vision for the Precinct for it to evolve into a centre for innovation. The structure plans for Neighbourhoods one (1) and five (5) which are reproduced in Figures 2.9 and 2.10 of this SEE indicate that no additional medium or high density housing is foreshadowed to be developed in proximity to the Motorway. As such the future operation of the proposed digital sign would not give rise to any amenity impacts on new residential housing.

To the north west of the site the land is zoned R4 High Density Residential. This land is developed for high density apartments that form part of the Macquarie Gardens development. The apartments are set within a landscaped estate and a strip of RE1 Public Recreation land aligns the sites southern boundary and sits adjacent to the Lane Cove Road M2 off ramp.

The combined landscaping from the residential development, the RE1 land and the M2 buffers would effectively filter direct sightlines to the proposed sign from the lower level apartments in Macquarie Gardens.

As the proposed sign will be mounted on an overpass it will be positioned considerably lower than the ground level of Lane Cove Road, the M2 Off Ramp and Macquarie Gardens. When viewed from Macquarie Gardens the viewing angle of the sign is perpendicular to the sign which means it is viewed side on. When combined with the vertical separation between the site and the residential apartments and the associated landscaped buffers the amenity impact of the proposed digital sign viewed from the public domain and the lower level residential apartments in our professional opinion is low.

Higher level apartments in the development will look over the sign and if it does appear in a district view it will only occupy a minor part of the panorama.

The independent lighting assessment undertaken by Electrolight has considered the illumination impact of the sign on the apartments against the requirements of AS 4282-210. The LIA concluded that:

'Based on an assessment of the surrounding areas, the nearest dwellings with potential views to the signage are at the Macquarie Gardens located at 1-15 Fontenoy Road.

As such, the Macquarie Gardens apartments formed the focus of the illuminance assessment. The proposed signage (and surrounding environment) was modelled in lighting calculation program AGI32 to determine the effect (if any) of the light spill from the signage. Photometric data for the screen was provided by the screen manufacturer, with the maximum luminance corresponding to the night time limit outlined in Table 3.2. Appendix D of the Electrolight Report shows the lighting model and the results of the calculations.

It can be seen from the lighting model that the maximum illuminance to the dwellings in the Macquarie Gardens in Zone A3 is 1.20 lux. The illuminance complies with the maximum AS 4282 limit of 2 lux.'

In our professional opinion the site is an appropriate location for a digital sign having regard to adjoining land uses.

5.2.2. Socio and Economic Development

From a social perspective, all content that is displayed on the screen will be in accordance with the established standards for outdoor media advertising.

The appropriate management system will be in place to safeguard against security breaches. This will include the installation of a webcam at the site to monitor the media being displayed. Further, in the event of a malfunction, the sign is programmed to default to a black blank screen.

There is an existing Public Benefit Agreement in place that was negotiated for the Stage 1 and 2 M2 signage development applications that were approved by the NSW Minister for Planning. Under the terms of the Agreement the Applicant pays to TfNSW (formerly the NSW Roads and Traffic Authority) a monetary contribution that is indexed annually to the consumer price index (CPI). Regardless of how many signage installations are located in the respective LGA's, TfNSW shares the monetary contribution equally between each of the three Council's through which the M2 Motorway passes – City of Ryde Council, Hornsby Shire Council and Hills Shire Council.

The Applicant and Transurban have made a Public Benefit Offer to TfNSW which is currently being negotiated between the parties. Included within the Public Benefit Offer is to provide five (5) percent screen time for road safety messages in prime locations to address key road safety issues. These messages contribute to the significant reductions in the number of fatalities on NSW roads.

For the reasons outlined above it is our professional opinion that the proposed digital sign will deliver socio economic benefits for the broader community.

5.2.3.Illumination and Light Impact

A Lighting Impact Assessment undertaken by Electrolight has identified that the site is located in a Zone 3 area under the Transport Corridor Outdoor Advertising Guidelines 2017. Maximum dimming and luminance levels are prescribed under the Guidelines 2017 and the Australian Standard AS 4282-2019 for the Control of the Obtrusive Effects of Outdoor Lighting. These controls are discussed within the Lighting Impact Assessment detailed in Section 3 of this SEE and the LIA report is reproduced in Appendix D. The report concludes that the proposed operation of the digital screen complies in full with the relevant legislation and will not result in any amenity impacts for residents of the adjacent Macquarie Gardens development or glare for eastbound motorists travelling on the M2.

5.2.4.Landscape and Vegetation Management

The proposal does not require the removal of any existing landscaping or trees. There are landscaping buffers that align the shoulders of the M2 inclusive of the Lane Cove Road off Ramp. This landscaping is managed by Transurban and the Hills Motorway under existing landscape contracts and the M2 landscape management plan. The proposed works and signage will not require any change to current operations.

5.2.5.Utility Services

The proposal does not raise any concerns regarding the provision of utility services.

5.2.6. Visual Impact

Urban Concepts has undertaken an analysis of the visual character of the site and its surrounding context, its scenic quality and visual exposure to both the public and private domains. Based on this visual analysis we conclude that:

- The proposal will have a high visual exposure to a small visual catchment being eastbound motorists travelling on the M2 Corridor.
- The static and digital signage is an established visual element in the journey along the M2 and the proposal is consistent with the urban design look that has been developed for the Motorway.
- The proposal does not create any visual effect or impacts in relation to views to items of heritage or conservation significance as it is not located in proximity to any items.
- The digital screen will not dominate district views of Lane Cove National Park.
- The digital screen will not adversely impact local views currently enjoyed by pedestrians walking across the Lane Cove Road overpass.
- Many motorists would find the proposed sign more interesting and attractive that the raw concrete bridge deck.
- An analysis of the proposal against the provisions of Schedule 5 of IESEPP 2021 has found it to be acceptable.
- The proposal does not result in visual clutter, dominate the skyline or significantly affect important scenic vistas.
- The LIA identifies that subject to conforming to the requirements of AS 4282-2019, there would be no unacceptable glare nor adverse impact on the safety of pedestrians, residents or vehicular traffic.
- The night time operation of the proposed sign will not cause any reduction in visual amenity to dwellings in Macquarie Gardens with the maximum illuminance of 1.20 lux being well within the maximum AS 4282-2019 limit of 2 lux.
- The proposal is consistent with the existing and desired future character for Macquarie Park that is articulated in the draft Macquarie Park Place Strategy 2021.
- The proposed sign will be mounted on an overpass positioned considerably lower than the ground level of Lane Cove Road, the M2 Off Ramp and the adjacent Macquarie Gardens residential development to the north west of the site.
- When the digital screen is viewed from Macquarie Gardens the viewing angle of the sign is perpendicular to the sign which means it is viewed side on. When combined with the vertical separation between the site and the residential apartments the amenity imapct of the proposed digital sign on view lines from the public and private domain is low. Should the digital sign appear in a district view it will only occupy a minor part of the panorama.
- Landscaping associated with the adjacent RE1 land and on the shoulders of the Motorway and the Lane Cove Road off ramp filter sightlines to the proposed sign from the RE1 land and the Macquarie Gardens development.

Having regard to the above considerations it is our professional opinion that the proposed digital installation will have a low visual impact and can be supported given the visual context of the site.

5.2.7. Heritage Impact or Special Area Characteristics

The site is not a listed heritage item nor is it located within a heritage conservation area.

5.2.8. Access and Parking

In terms of the ongoing operation of the advertising panel, it will not be necessary to bring machinery onto the site to change creative copy as this will be undertaken off site by a computer.

5.2.9. Traffic and Pedestrian Safety

Bitzios Consulting has assessed the traffic and pedestrian safety impacts of the proposal. The assessment is reproduced in Appendix C of this report. The report concludes that the proposed digital advertising screen is acceptable in terms of impacts on road safety and complies with the relevant TfNSW regulations for the control of advertising structures and the relevant provisions of the Transport Corridor Guidelines 2017.

5.3. Section 4.15 (1) (c) Suitability of the Site for the Development

The western elevation of the Lane Cove Road overpass above the M2 Motorway is an effective location for an outdoor media display. The proposed digital sign is considered to be suitable and appropriate development for this site for the following reasons:

- The proposal does not extend or protrude above the current height of the existing advertising structure.
- Bitzios Consulting has confirmed that the proposal will not have an adverse impact upon the safety of any driver, pedestrian or cyclist on the Motorway or in the general locality of the site.
- The primary EPI under which this proposal is assessed is Chapter 3 of IESEPP. The SEPP reinforces the suitability and desirability of this site as an effective advertising location given its high daily exposure to motorists and commuters and its location adjacent to a business park and commercial corridor.
- The Applicant and Transurban have made a Public Benefit Proposal to TfNSW. The offer is explained in Section 3.4.1 of this SEE.
- The proposal will not raise any traffic safety concerns. It will adopt a 25 second dwell time, which is considered appropriate for a road with a speed limit greater than 80 km/h in accordance with the most current digital criteria in the Transport Corridor Guidelines 2017.
- The proposal is compatible with the road safety requirements and visual context of the site and will not alter or derogate its functionality as a Motorway.
- The proposal is fully compliant with all relevant land use compatibility, bridge signage, lighting and illumination controls prescribed under AS 4282-2019 and the Transport Corridor Guidelines 2017.

5.4. Section 4.15 (1) (e) Public Interest

After fully considering all aspects of the proposed upgrade, it is our professional opinion that the proposal is in the public interest for the following reasons:

- It is consistent with the level of innovation and signage trends that are occurring within the locality, nationally and overseas.
- It recognises the importance of the growing driver audience on the M2 Motorway to the OOH sector.
- It raises no issues relating to traffic, cyclist and pedestrian safety.
- It is fully compliant with the intent of state and local EPI's.
- A Public Benefit Offer to TfNSW accompanies this proposal and is explained in Section 3.4.1 of this SEE.
- The Applicant and Transurban have proposed that 5% of screen time will be provided to the TfNSW free of charge for public service road safety announcements and amber alerts.

6. CONCLUSION & RECOMMENDATION

Effective outdoor advertising requires a site that provides a high level of daily exposure to motorists, commuters and pedestrians. This fundamental site requirement has been recognised at a State Government level through Chapter 3 and Schedule 5 of IESEPP 2021 and the introduction of Guidelines for the erection of outdoor advertising in Transport Corridors, such as the M2 Motorway.

This development application seeks consent to erect a new digital advertising sign and associated decorative cladding onto the western elevation of the Lane Cove Road overpass above the M2 Motorway at Macquarie Park. It is one of seven (7) new digital signs being proposed for display along the Motorway. There are currently sixteen (16) advertising sites along the Motorway which have been progressively developed by the Applicant under the existing commercial agreement since 2010. This new bundle of digital applications comprises stage 3 of the M2 Signage Strategy.

The subject site constitutes Road Corridor and Transport Corridor Land. The proposal is being advanced by Manboom pursuant to Clause 13.4(1)(c) of Chapter 3 and the NSW Minister for Planning is the Consent Authority for this application pursuant to Clause 3.10 of Chapter 3.

This SEE and the supporting documentation have been prepared to address the relevant statutory provisions contained in Chapter 3, the associated Transport Corridor Advertising and Signage Guidelines 2017, the Ryde LEP 2014 and the relevant Heads of Consideration prescribed under Section 4.15(1) of the Environmental Planning and Assessment Act 1979.

Independent and robust specialist investigations which support this application include, a Lighting Impact Assessment undertaken by Electrolight and a Traffic Safety Assessment undertaken by Bitzios Consulting. These specialists have concluded that the introduction of a digital screen will not result in any adverse environmental amenity or traffic safety impacts. TfNSW has considered the Traffic Safety Assessment and has found it to be acceptable based on the preliminary review.

It is our professional opinion that after considering all aspects of this proposal that it is appropriate to proceed for the following reasons:

- The proposed screen is of suitable scale and proportion relative to the architecture of the host bridge and is fully contained within the profile of the Lane Cove Road western overpass elevation.
- The proposal, as submitted, complies with the underlying intent of state and local planning controls for outdoor advertising and digital signage.
- The proposal will not raise any matters that are contrary to the achievement of the vision for Macquarie Park under the Draft Place Strategy 2021.
- The proposal does not raise any significant or adverse traffic safety concerns and complies with TfNSW criteria of the operation of digital signs.
- The digital LED screen does not raise any issues relating to undesirable glare, reflectivity and light spillage.
- The advertising copy can be changed off-site without disruption to the pedestrian and vehicle movements on the M2 and Lane Cove Road.
- The introduction of digital signage can occur without adverse visual impact to the amenity of residential properties.
- The sign is well-designed and constructed of high quality steel and aluminium, which are corrosion resistant materials. The decorative cladding will improve the raw concrete finish of the bridge deck providing a contemporary look that is consistent with the urban design look that has been formulated for the Motorway
- The sign will contribute to the vibrancy of this part of the motorway through its ability to display real time advertising content and community and civic related messages.

- The proposal incorporates a Public Benefit Offer to TfNSW. In addition the Applicant and Transurban will provide 5% of screen time to TfNSW for road safety announcements and emergency messaging.

It is our professional opinion that the NSW Minister for Planning should favourably consider and recommend for approval the proposed digital advertising sign on the western elevation of the Lane Cove Bridge overpass above the M2 Motorway as submitted.

Yours faithfully,

Belinda Barnett

Managing Director, Urban Concepts

Appendix A
Legal Advice

Our reference
CLC/JG/GOSI31396-9178402

8 Chifley
8-12 Chifley Square, Sydney NSW 2000, Australia
GPO Box 9925, Sydney NSW 2001, Australia
Tel +61 2 9210 6500
Fax +61 2 9210 6611
www.corrs.com.au

CORRS CHAMBERS WESTGARTH

Sydney
Melbourne
Brisbane
Perth
Port Moresby

28 June 2022

Mr Ian Riley
Manboom Signage Partnership Pty Ltd
151 Macquarie Street
SYDNEY NSW 2000

Contact
Julia Green (02) 9210 6157
Email: julia.green@corrs.com.au

Partner
Christine Covington

Dear Ian

M2 Motorway Signage DA

1 Request for Advice

1.1 You have asked us to advise on whether Manboom Signage Partnership Pty Ltd (**Manboom**) can be the applicant for development applications for the display of advertisements on the M2 Motorway (**DA**) for the purposes of section 3.14 of the *State Environmental Planning Policy (Industry and Employment) 2021* (**IESEPP**).

1.2 Section 3.14 of the IESEPP makes advertisement development permissible with development consent, where such development may otherwise be prohibited under a local environmental plan (**LEP**).

2 Executive Summary

2.1 In short, the answer is yes, Manboom can be the applicant for the DAs and benefit from the provisions in section 3.14(1)(c) of the IESEPP that make advertisement development permissible with consent on the M2 Motorway.

2.2 There is no requirement in section 3.14 or the balance of the IESEPP that requires the applicant for the DA for advertising on the M2 Motorway to be a public authority.

2.3 Landowner's consent to the DAs would still be required in the usual course.

3 Reasoning

3.1 We are instructed that Manboom proposes to lodge DAs for the display of advertisements on the M2 Motorway.

3.2 We are instructed that the development will be located on that part of the M2 Motorway that is zoned SP2 and that under the relevant LEPs, advertising and signage use is prohibited.

3.3 Section 3.14 of the IESEPP states:

> ***3.14 Transport corridor land***
>
> *(1)* ***Despite section 3.8(1) and the provisions of any other environmental planning instrument, the display of an advertisement on transport corridor land is permissible with development consent in the following cases—***
>
> *(a) the display of an advertisement by or on behalf of RailCorp, NSW Trains, Sydney Trains, Sydney Metro or TfNSW on a railway corridor,*
>
> *(b) the display of an advertisement by or on behalf of TfNSW on—*
>
> *(i) a road that is a freeway or tollway (under the Roads Act 1993) or associated road use land that is adjacent to such a road, or*
>
> *(ii) a bridge constructed by or on behalf of TfNSW on any road corridor, or*
>
> *(iii) land that is owned, occupied or managed by TfNSW and that is within 250 metres of a classified road,*
>
> *(c)* ***the display of an advertisement on transport corridor land comprising a road known as the Sydney Harbour Tunnel, the Eastern Distributor, the M2 Motorway, the M4 Motorway, the M5 Motorway, the M7 Motorway, the Cross City Tunnel or the Lane Cove Tunnel, or associated road use land that is adjacent to such a road.***
>
> *(2) Before determining an application for consent to the display of an advertisement in such a case, the Minister for Planning may appoint a design review panel to provide advice to the Minister concerning the design quality of the proposed advertisement.*
>
> *(3) The Minister must not grant consent to the display of an advertisement in such a case unless—*
>
> *(a) the advice of any design review panel appointed by the Minister has been considered by the Minister, and*
>
> *(b) the Minister is satisfied that the advertisement is consistent with the Guidelines.*
>
> *(4) This section does not apply to the display of an advertisement if the Minister determines that display of the advertisement is not compatible with surrounding land use, taking into consideration any relevant provisions of the Guidelines.*
>
> *[emphasis added]*

3.4 Section 3.14(1)(c) makes advertising development permissible with development consent, despite any prohibition in an LEP, if the proposed advertising development is:

(a) Within transport corridor land. This is defined as:

> ***transport corridor land*** means the following land—
> (a) land comprising a railway corridor,
>
> (b) land comprising a road corridor,
>
> (c) land zoned industrial under an environmental planning instrument and owned, occupied or managed by TfNSW, Sydney Metro or RailCorp.

(b) Located within the M2 Motorway transport corridor land.

3.5 On the basis of our instructions as to the location of the proposed development within the transport corridor of the M2 Motorway, the development is permissible with consent.

3.6 Unlike sections 3.14(1)(a) and (b), there is no requirement under section 3.14(1)(c) that the DA is made by or on behalf of a public authority. Accordingly, any person, including Manboom, can make such an application.

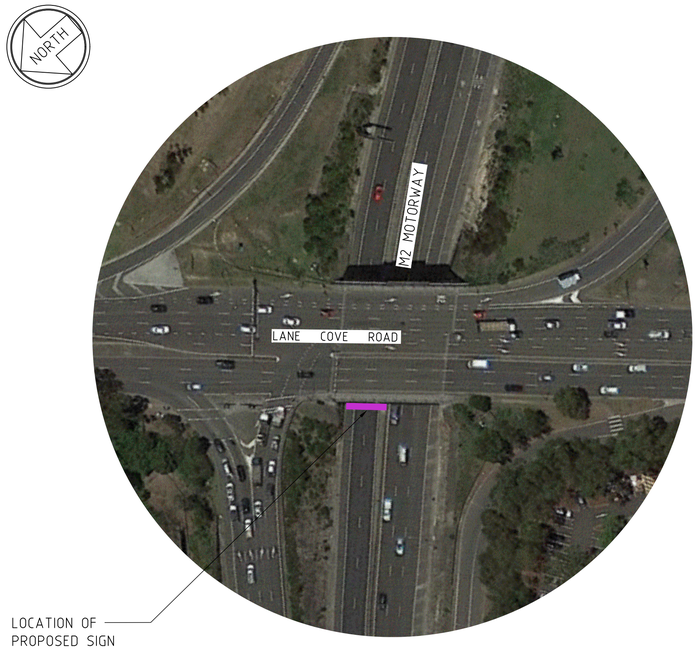
Yours faithfully
Corrs Chambers Westgarth

Christine Covington
Partner in Charge (she/her)

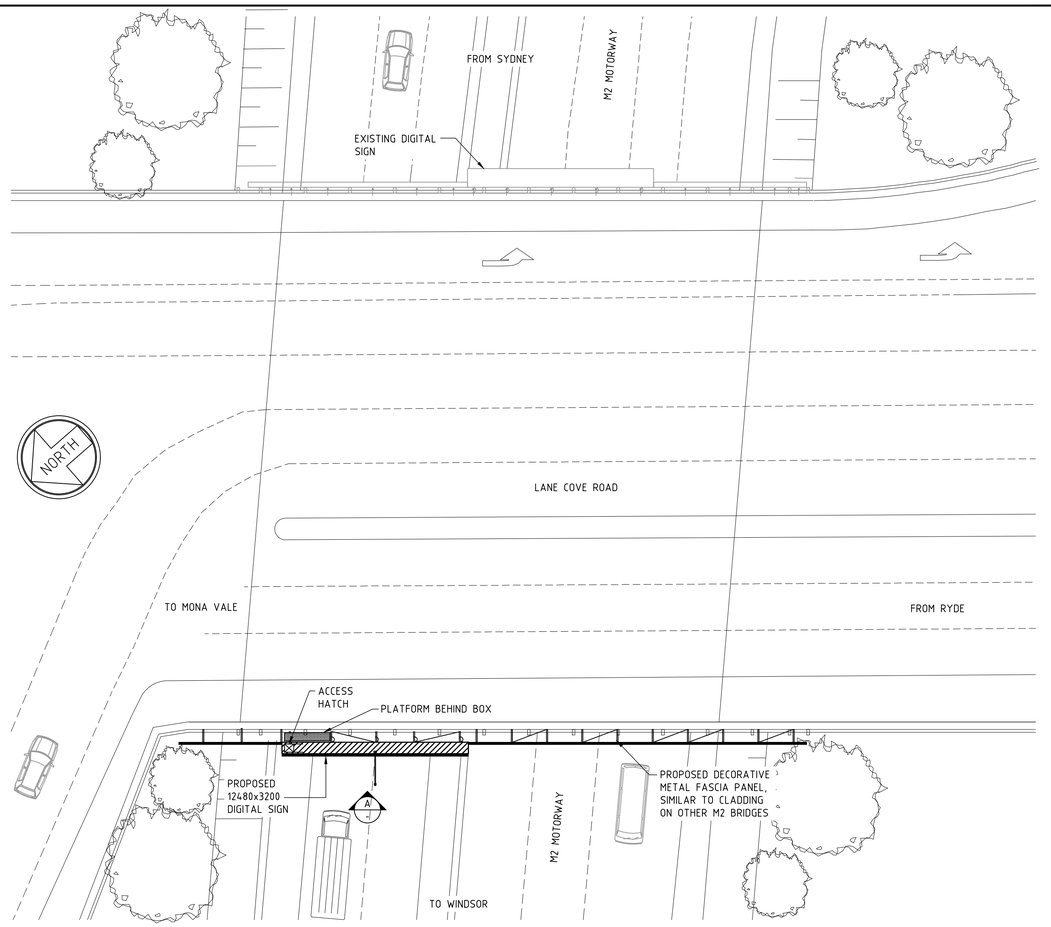
Julia Green
Special Counsel

Appendix B

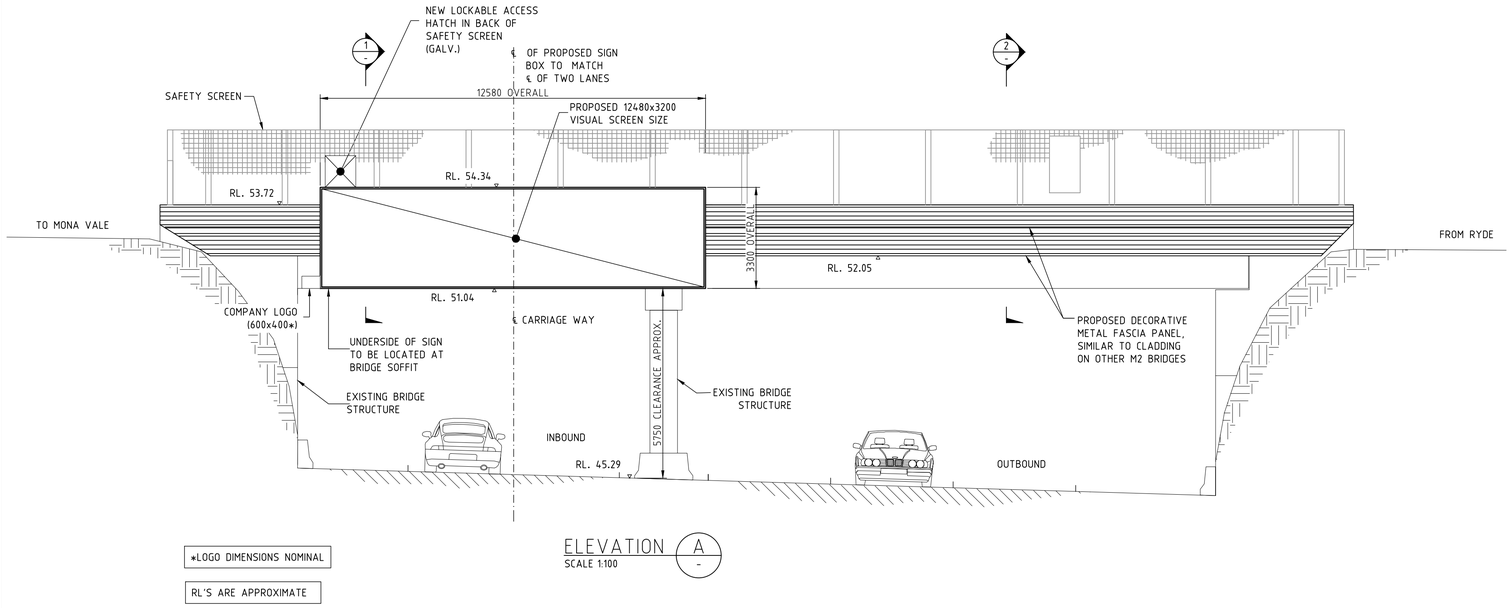
Development Application Plans and Photomontage



AERIAL PHOTO
NTS



PROPOSED SITE PLAN
SCALE 1:200

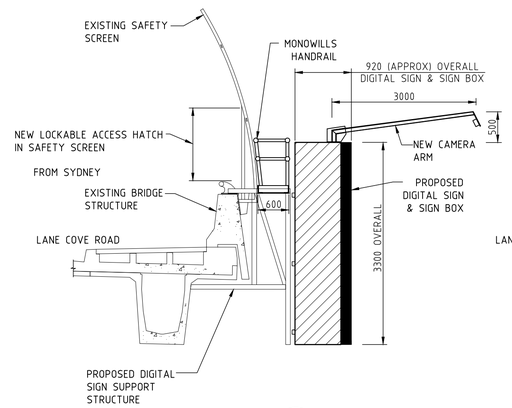


ELEVATION A
SCALE 1:100

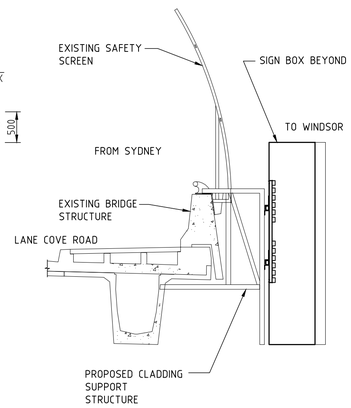
*LOGO DIMENSIONS NOMINAL

RL'S ARE APPROXIMATE

FALL RESTRAINT CABLE TO BE FIXED BETWEEN SIGNBOX AND BRIDGE



SECTION 1
SCALE 1:50



SECTION 2
SCALE 1:50

NOT FOR CONSTRUCTION

ISS	DATE	COMMENT
A	03/08/22	ISSUED FOR APPROVAL
B	06/10/22	ISSUED FOR APPROVAL

Dennis Bunt
Suite 8, Building 7, 49 Frenchs Forest Road East,
Frenchs Forest, NSW 2086
P.O. Box 652, Forestville, NSW 2087
Ph: 02 9451 3455 Fax: 02 9451 3466
Email: info@dbce.com.au
ABN 23 039 013 724

CLIENT: MANBOOM

PROJECT: LANE COVE ROAD BRIDGE, MACQUARIE PARK, INBOUND

TITLE: PROPOSED DIGITAL SIGN
GENERAL ARRANGEMENT &
SITE PLAN, ELEVATION &
SECTION

DRAWN AT | DESIGN DB | DATE: AUG'22

JOB NO: 22141-4 | DWG NO: DA01

SCALE @ A1: AS SHOWN | REV: B


Ford
ALL-NEW ESCAPE
NO ADVERTISING
TRICKERY REQUIRED
LANE COVE TUNNEL
2km AHEAD
TOLL APPLIES
NO CASH BOOTHS
PASS
LANE COVE TUNNEL
LOW CLEARANCE
NO DANGEROUS GOODS IN TUNNEL

Appendix C

Traffic Safety Report Prepared by Bitzios Consulting

M2 Hills Motorway: Lane Cove Road Overpass

Proposed Digital Sign Traffic Safety Assessment

Manboom Signage

24 November 2022

Gold Coast
Suite 26, 58 Riverwalk Avenue
Robina QLD 4226
P: (07) 5562 5377

Brisbane
Level 2, 428 Upper Edward Street
Spring Hill QLD 4000
P: (07) 3831 4442

Sydney
Studio 203, 3 Gladstone Street
Newtown NSW 2042
P: (02) 9557 6202

W: www.bitziosconsulting.com.au

E: admin@bitziosconsulting.com.au

The assessment team has undertaken assessments of similar digital advertising sign proposals elsewhere in NSW and Australia. In addition to the use of NSW guidelines, our assessments are founded on road safety auditing principles and traffic safety risk assessments. Where a significant change in road safety risk has been identified due to the proposal, potential treatment measures to mitigate the change in risk have been suggested. However, the adoption of any or all the treatment measures does not warrant that the site is absolutely safe from incidents in the future whether they be related or unrelated to the proposed digital sign.

Document Issue History

Report File Name	Prepared	Reviewed	Issued	Date	Issued to
P5486.001R M2 Lane Cove Road Macquarie Park Digital Sign TSA	A. Suriono / S. Daizli	D. Bitzios	S. Daizli	7/09/2022	Gerry Thorley, Digital Place Solutions gerry@digitalplacesolutions.com
P5486.002R M2 Lane Cove Road Macquarie Park Digital Sign TSA	S. Daizli	S. Daizli	S. Daizli	19/10/2022	Gerry Thorley, Digital Place Solutions gerry@digitalplacesolutions.com
P5486.003R M2 Lane Cove Road Macquarie Park Digital Sign TSA	S. Daizli	S. Daizli	S. Daizli	24/11/2022	Gerry Thorley, Digital Place Solutions gerry@digitalplacesolutions.com

CONTENTS

Tables

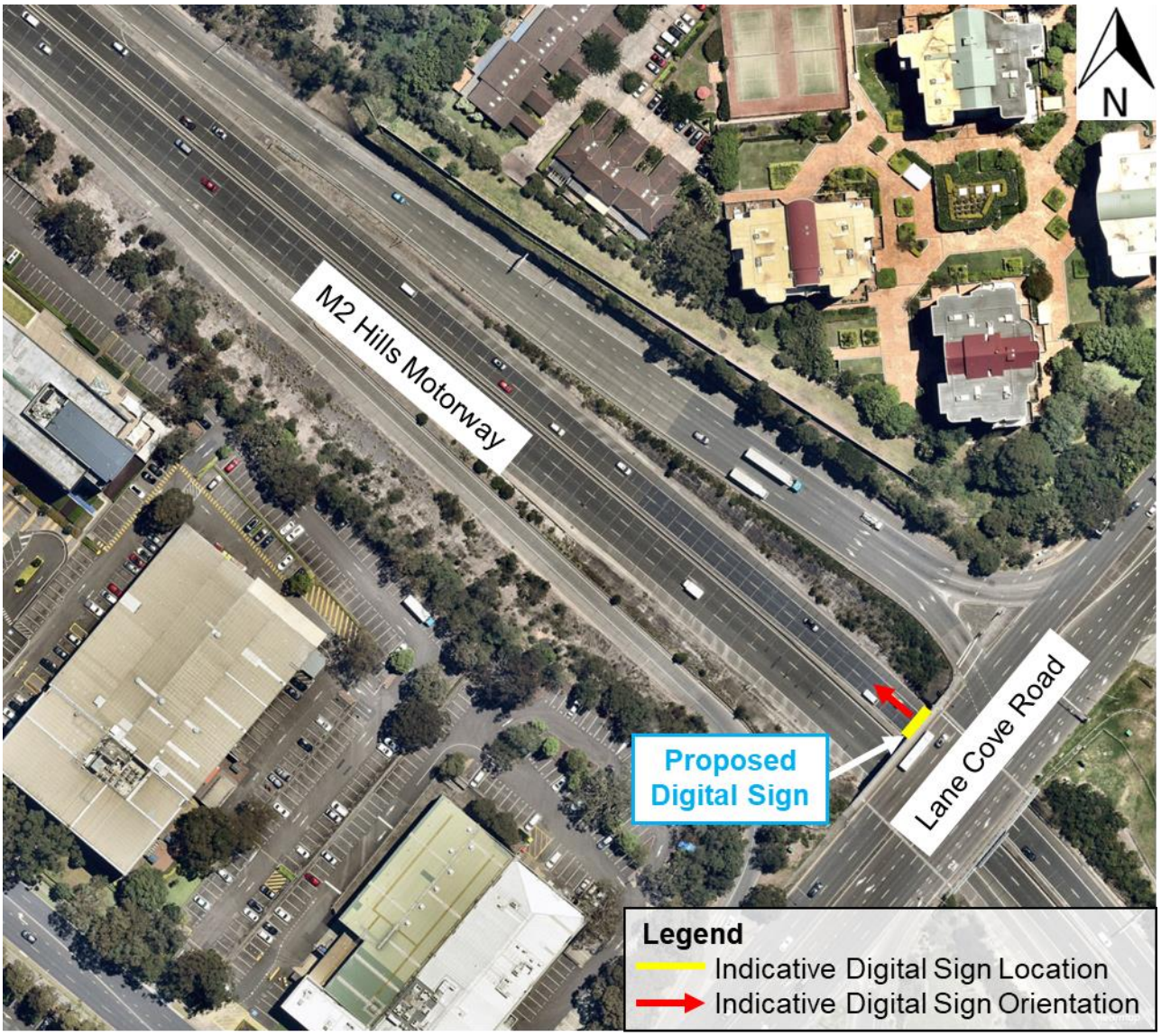
Figures

Appendices

1. INTRODUCTION

1.1 Background

Manboom Signage is seeking development approval for the installation of a digital LED advertising sign. The sign is proposed to be located above the eastbound carriageway of the M2 Hills Motorway (M2) on the Lane Cove Road overpass in Macquarie Park as shown in Figure 1.1.



**Sign location is indicative.*
Adapted from Nearmap

Figure 1.1: Location of the Proposed Digital Sign

Bitzios Consulting has been engaged by Manboom Signage to undertake a traffic safety assessment of the proposal.

1.2 Methodology

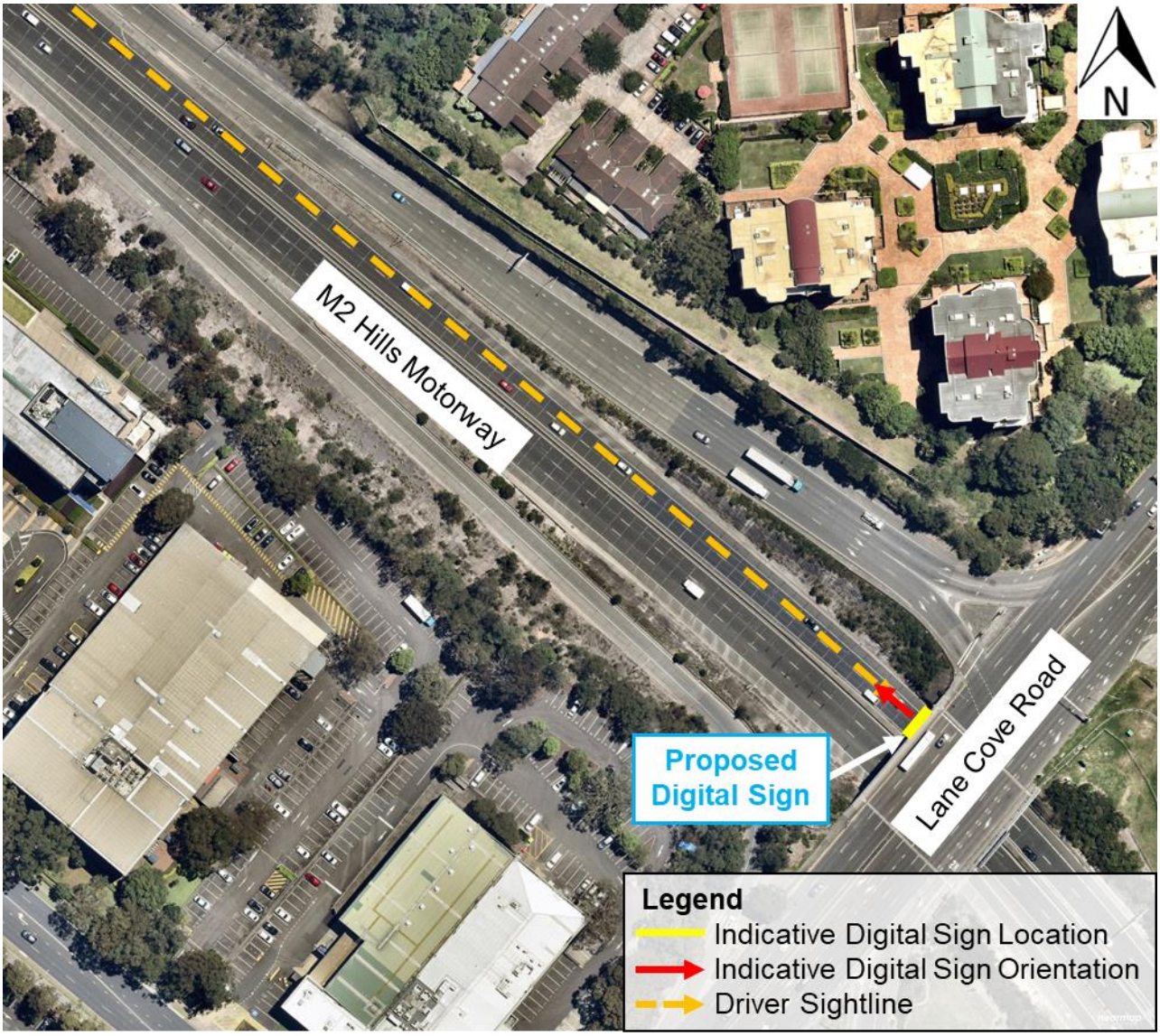
The process used to assess the impact of the proposal involved:

- A review of the viewing locations and sightlines to the proposed digital sign to define the geographical scope of the assessment
- A review of the proposed digital sign specifications
- A review of relevant research of the effects of digital signs on driver distraction in different driving circumstances
- A before versus after installation crash analysis study and documenting the results of 12-month post-opening safety assessments for nine other digital signs along the M2
- A site inspection during day conditions to understand the road user's perspective of the sign, then a driver sightline assessment using images captured from in-vehicle video recordings
- A first-principles safety assessment of the proposed digital sign, including reviewing road approaches, driver sightlines, surrounding environment and proximity of intersections
- A review of the most recently available five years of crash data in proximity to the sign
- An assessment of the proposed digital sign against:
  - State Environmental Planning Policy (Industry and Employment) 2021 (Industry and Employment SEPP)
  - The Transport for NSW Advertising Sign Safety Assessment Matrix
  - The *Transport Corridor Outdoor Advertising and Signage Guidelines: Assessing development applications under SEPP 64 (Department of Planning and Environment, November 2017)* (*Signage Guidelines*).

2. SIGN VIEWING LOCATIONS

2.1 Viewing Approaches

The digital sign is proposed to face north-west towards eastbound drivers along the M2. The driver viewing range to the sign from this approach is illustrated in Figure 2.1 and demonstrates a relatively long distance on approach to the proposed sign from which it can be identified.



**Sign location is indicative.*
Adapted from Nearmap

Figure 2.1: Driver Viewing Range to the Proposed Sign

The ability to recognise the sign and to recognise its content are two different things. The sign could be identified as an object from approximately 685m away as shown in Figure 2.1, however, its content is only likely to be recognisable from about 200m away, depending on the content of the advertisement. The sign will appear at the windscreen as an object that is 6cm wide and 1.6cm high when 200m from it.

2.2 Driver Views

The eastbound sign view from the M2 during the daytime period is shown in Figure 2.2.

**Sign location is indicative, not to scale and for illustration purposes only.*

Figure 2.2: Daytime view from the M2 eastbound

3. DIGITAL SIGN SPECIFICATIONS

The specifications for the proposed digital sign, as well as other relevant site information, are summarised in Table 3.1. The proposed development plan is provided in **Appendix A**.

Table 3.1: Specifications and Site Information for the Proposed Digital Sign

Attribute	Details
Location	M2 Lane Cove Road eastbound overpass, Macquarie Park, NSW
Local Government Area	Ryde
Land use zoning	SP2 Classified Road
Proposed facing direction	North-west
Proposed type of advertisement/sign	Bridge advertisement – supersite
Proposed display format	Internally illuminated digital (LED)
Proposed visual screen size	12.48m x 3.20m = 39.94m^2
Proposed advertising display area	12.58m x 3.30m = 41.51m^2
Minimum vertical pavement clearance	5.75m
Visual screen size greater than 20m^2?	Yes
Visual screen size greater than 45m^2?	No
Structure higher than 8m above the ground?	Yes – overall height 9.05m
Is the site located within 250m of and visible from a classified road under the *Roads Act 1993*?	Yes
Consent authority	NSW Minister for Planning
Does the sign contain moving parts?	No
Is it a Variable Message Sign?	No
Does it have any flashing or flickering content?	No

4. LITERATURE REVIEW

4.1 Context

Crashes directly related to digital signs would typically fall into two categories:

- Crashes due to the collision of a vehicle with the mounting structure of a digital sign where the sign in placed in a location where there is a reasonable risk of this occurring
- Crashes which occur as a consequence of a driver being distracted by a digital sign.

The available *Digital Signage Guidelines* generally provide well-researched information on the location of 'clear zones' and other areas where there is a reasonable risk of an object being collided with by an errant vehicle. The linkages between driver distraction due to digital signs and crashes is less well dealt with in the available *Digital Signage Guidelines* and many of the criteria used have no direct relevance of the risk of distraction in time and in space on approach to digital signs located in different parts of the visual driving environment and in different driving environments.

The chain of events that is required to link a digital sign to increased crash rates is that:

- *A driver is aware of an external event (i.e. outside the vehicle) which is a digital sign display change and that the event distracts a driver sufficiently to lead to involuntary driver inattention which then leads to driver error at a critical time in a driving environment and driving circumstance that leads to a crash.*

As there is no body of research that links the installation of a digital sign or the conversion of a static sign to a digital sign to increased crash rates, the available research has been disaggregated into:

- The relationship between distractions (generally) and crashes
- The relationship between digital signs and distractions
- Studies which have attempted to interpret before v after installation crash statistics to see if there is a correlation of digital signs with crash rates (without defining a causal relationship).

Research on each of these topics is summarised below.

4.2 Relationships between Distraction and Crashes

It is important to note that distraction from digital or static billboards did not feature in the top 15 causes of driver distraction. As such, this data further validates the research consensus that there is no valid link between roadside advertising and increased crash risk. There is consensus in the literature that the majority of crashes which occur in urban areas are due to driver error. Victor et al. (2005) highlights that human error is the cause of up to 92.6 percent of accidents on the road. In order to minimise the risk of crashes drivers need to: be aware of external environmental influences, interpret the risks associated with these external environmental influences, make decisions, and carry out actions (Perez & Bertola 2011).

Even though human error is the cause of most crashes, Lam (2002) reviewed NSW crash data and found that out of 414,136 crashes, distraction was a factor in 15,059 (3.6%) of them. Distractions coming from outside the vehicle were determined to be a factor in only 2.5% of all crashes. This low influence of external distractions to crashes was reinforced by the Monash University Accident Research Centre (MUARC) carried out a study on crashes in Victoria and NSW between 2000 and 2011 and found the most common causes of crashes as summarised in Table 4.1. The most common cause of crashes was a combination of driver inattention and driver distraction. Distraction and inattention may occur separately. That is, a driver may be distracted but still attentive.

Table 4.1: Causes of Vehicle Crashes in NSW and Victoria

Percentage of Crashes	Cause
13.5%	Intoxication
11.8%	Fell asleep
10.9%	Fatigued
3.2%	Failed to look
3.2%	Passenger interaction
2.6%	Fell ill
2.6%	Blacked out
1.8%	Feeling stressed
1.5%	Looked but failed to see
1.4%	Animal or insect in vehicle
0.9%	Using a mobile phone
0.9%	Changing CD/cassette/radio
0.9%	Adjusting vehicle systems
0.9%	Looking at vehicle systems
0.3%	Searching for objects

Source: http://www.keepyoureyesontheroad.org.au/pages/Accident-statistics-Cont

Austroads (2013) provides a comprehensive review of research on the effect of roadside advertising on road crashes. It found from its extensive literature review that *"while looking at an external object appears to be quite risky behaviour when it is engaged in, it is not a frequent cause of crashes overall"*.

Many studies have been undertaken to determine the main causes of both driver distraction and driver inattention, and how they contribute to an increase in crashes. Regan et al. (2011, p.1771) describes driver distraction as a *"diversion of the mind, attention, etc., from a particular object or course; the fact of having one's attention or concentration disturbed by something"*. This includes objects brought into the vehicle, vehicle systems, vehicle occupants, moving objects or animals in the vehicle, internalised activity, and external objects, events or activities (Perez & Bertola 2011). A broader definition of driver inattention is defined as *"when the driver's mind has wandered from the driving task for some non-compelling reason"* (Regan et al. 2011, p.1772).

4.3 Relationships between Digital Sign Glances and Distraction

Samsa (2015) conducted a study that used eye tracking technology to track participant's natural eye movements and prioritisation behaviour whilst driving. Participants were each instructed to drive a single loop of the study route (14.6km section of a road through Brisbane and its surrounding suburbs to Woolloongabba) between 11am and 2pm. This study found that participants prioritised tasks based on the complexity of the driving demands, which was particularly evident during heavy traffic in AM and PM peak hours. The research found that in demanding driving environments, drivers will prioritise focussing on "on-road" factors such as the rate of cars braking and on pedestrian and cyclist movements over off-road factors such as billboards. Moreover, Samsa (2015) found no significant difference in driver prioritisation when comparing static billboards, digital billboards and on-premises signs. This research concluded that there is a smaller chance of driver distraction from digital billboards whilst driving in demanding environments.

The Samsa (2015) finding supported the US Department of Transport and Federal Highway Administration research (2012) which found that drivers look at the forward roadway between 73% and 85% of the time depending on the demands of the driving task. This study also found that where billboards are introduced, drivers may substitute saccades / glance fixations from other things towards billboard glances but the percentage of time fixating on the forward roadway is consistent.

Victor et al. (2005) revealed similar results when they undertook a much larger study that examined eye glance movement on the road during both light and heavy traffic flows. Data was collected via the EU project HASTE, which used "in vehicle information systems" (S-IVIS). Data was sourced from 119 participants across three separate experiments, from four separate driving routes. The study included an examination of auditory and visual tasks to test driver glance behaviour. The results showed that as driving tasks became more difficult, drivers increased their viewing time in the road centre, rather than on other visual tasks (such as observing signs) off-road.

Also, there are general misconceptions that drivers "stare" at digital billboards, that changing messages on digital billboards draw a driver's attention to them and that these influences alone lead to crashes. The literature suggests that instead of "staring" at billboards, drivers "glance" at billboards. The US Department of Transport and Federal Highway Administration (2012) found that the average glance duration to an electronic billboard was 0.335 seconds with a maximum of 1.335 seconds, well below the 2.0-second distraction time threshold that Austroads research (and other research) suggests as the critical time for increased crash risk. Smiley et. al. (2005) found an average glance length of 0.5 seconds for electronic billboards and that viewings of the electronic billboard were undertaken by up to 50% of drivers.

The research of Decker et al. (2015) supported the glance time findings of other studies. This research summarised the results of 8 studies and concluded that the "*range of mean glance durations was 0.27 to 0.953 s (mean, 0.51) for passive billboards and 0.27 to 1.0 s (mean, 0.54) for active billboards*". This research did note "*strong evidence of substantial variability among individual billboards in each category"*.

Participant's glance behaviour was recorded and analysed in terms of the number of fixations and the duration of these fixations to both static and digital billboards in the work of Samsa (2015). Out of a total of 144 fixations toward four digital billboards, the average fixation duration was below 0.75 seconds. This is considered to be *"the equivalent minimum-perception reaction time to the slowing of a vehicle ahead"* (Samsa 2015, p.8). Less than 1% of the records presented an average fixation duration of above 0.75 seconds. This average was apparent for both static and digital sign types. Furthermore, Samsa's (2015) results showed that participants that fixated on a digital billboard for longer than 0.75 seconds tended to do so when travelling conditions were relaxed (i.e. car was stationary, or traffic was minimal).

Samsa's (2015) results followed those of Perez and Bertola (2011) which also used eye-tracking technology to survey driver behaviour when glancing to digital billboards. Perez and Bertola (2011) also found that the maximum glance duration off the centre of the road was 0.75 seconds and claimed that that these small glances away from the road generally occur when there is low demand from the road network, and that these glances are not likely to result in adverse or critical events. Overall, a number of studies have concluded that drivers glance at digital billboards at a mean rate of 0.5 seconds and almost all are less than 1.0 seconds.

The available literature confirms that:

- External sources have a minimal effect on driver distraction that led to crashes
- Driver distraction in general reduces as the driving environment becomes more complex because drivers prioritise their attention effort to higher risk tasks
- The number and duration of glances due to digital billboards that result in driver inattention to the scale that might influence the series of events that would lead to a crash is immeasurably small.

4.4 The Relationship between Digital Signs and Crashes

4.4.1 International Examples

Due to the relatively short time digital billboards have been present in Australia and the relatively few locations that they have been present (until recent years), there is limited before and after installation crash data in Australia that specifically targets identifying a relationship between digital signs and crash rates and under what conditions. A selection of international research is presented below.

Hawkins, Kuo and Lord (2012) was based on 135 "on-premises digital sign" locations and undertook statistical analysis of crash data for before and after each sign installation. The signs were located in California, North Carolina, Ohio, and Washington. This study concluded "that the installation of digital on-premises signs does not lead to a statistically significant increase in crashes on major roads".

Tantala and Tantala (2010) was based on "26 existing, non-accessory, advertising digital billboards along routes with periods of comparison as long as 8 years in the greater Reading area, Berks County, Pennsylvania". This research looked at both temporal and spatial crash details around the electronic signs and compared the data to 51 non-electronic signs. The digital signs had message duration times of 6, 8 or 10 seconds. This research concluded that:

- *"The before and after rates of accidents near the twenty digital billboards show an 11.1% decrease within 0.5 miles of all digital billboards over eight years near twenty locations. Similar decreases and trends in both averages and peaks are observed for both smaller and larger vicinity ranges, and for specific groups of locations by duration time."*
- *"The accident statistics and metrics remain consistent, exhibiting statistically insignificant variations at each of the digital billboards. The metrics include the total number of accidents in any given month, the average number of accidents, the peak number of accidents in any given month, and the number of accident-free months. These conclusions account for variations in traffic-volume and other metrics."*
- *"The statistical evaluation of the Empirical Bayes method and actual versus predicted results show that the total number of accidents is comparable to what would be statistically expected with or without the introduction of digital technology and that the safety near these locations is consistent with the model benchmarked by 77 locations within Berks County."*

Pandey and Shafizadeh (2011) reviewed a range of traffic flow parameters upstream of electronic billboards on Highway 50 near Sacramento. The study concluded that *"the presence of the electronic billboard does not appear to have a significant negative impact in traffic performance (flow, speed, and lane occupancy) or incidents in the study section of the freeway"*.

4.4.2 Local Examples

Crash data 'before-installation' and 'after-installation' of digital signs has been analysed on approach to nine existing digital signs along the M2 at seven locations. The crash data has been compared to understand if there has been any change in crash rate or crash types on the visual approach to each digital sign, and to infer if any relationships exist between digital sign distraction and crash rates.

In addition, 12-month post-installation road safety checks of the digital signs were undertaken by Winning Traffic Solutions (WTS) and a summary of their recommendations have been included. The key findings follow, and the full assessment is included in **Appendix B**.

Summary of the Review of the Crash Data

The number of pre-installation and post-installation crashes between 2012 and 2021 within 200m of the nine existing digital signs is summarised in Table 4.2.

Table 4.2: Pre and Post-installation Crash Data Comparison – M2 Digital Signs (2012-2021)

Site	Location	Installation Date	Pre-installation Crashes p.a.	Post-installation Crashes p.a.
1	Delhi Road inbound, North Ryde	December 2017	1	1
2	Delhi Road outbound, North Ryde	December 2017	<1	0
3	Lane Cove Road outbound, Macquarie Park	May 2017	0	<1
4	Murray Farm Road outbound, Cheltenham	July 2019	<1	0
5	Pennant Hills Road inbound, Carlingford	May 2017	2	<1
6	Barclay Road inbound, North Rocks	July 2018	<1	<1
7	Barclay Road outbound, North Rocks	July 2018	<1	<1
8	Ixion Street outbound, Baulkham Hills	November 2017	0	0
9	Langdon Road inbound, Baulkham Hills	November 2017	<1	<1

Key findings when reviewing the data across all sites are:

- The M2 in locations that approach bridges is inherently safe with very low crash rates despite the relatively high volumes and high speeds of traffic on the M2
- Whilst there is a reduction in crashes on average post-installation of digital signs on the M2, there is no statistical causal relationship evident between the presence of digital signs and changing crash rates (up or down) where they have been installed.

Whilst each site is unique and should be assessed considering its particular circumstances, given the above conclusions, there is no evidentiary basis to claim that the installation of digital signs on bridges along the M2 will lead to a higher crash rate than currently exists.

Consensus of the Road Safety Check Findings

The 12-month post-installation road safety checks of the digital signs undertaken by WTS concluded that:

- All signs are not located near any distractions and driving task situations that would significantly increase road user safety risks on the road network
- Road user safety is not compromised by the placement and operation of the signs
- The objectives of the road safety checks, SEPP 64 and Section 3 of the *Signage Guidelines* have been met.

4.5 Research Interpretation

The chain of events that is required to link a digital sign to increased crash rates is: *a driver is aware of an external event (i.e. outside the vehicle) which is a digital sign display change and that the event distracts a driver sufficiently to lead to involuntary driver inattention which then leads to driver error in a driving environment at a critical instance in time that leads to a crash"*.

The combination of probabilities of these events would be extremely difficult to quantity and aligns with the absence of a comprehensive body of research that links digital signs (to driver distraction leading to driver inattention leading to driver error) leading to an increased rate of crashes.

The literature review presented in this chapter has established an absence of a causal relationship between digital signs and driver distraction to the level that creates additional crashes. This absence of any relationship between the installation of digital signs and crashes was also evident in the review of nine existing digital signs along the M2.

Furthermore, there is also an absence of any correlation between new digital signs and increasing crash rates. There are currently over 2,000 digital roadside advertising signs in Australia and there has not been a single claim, as far as the industry is aware, of a digital sign being blamed for a crash.

Based on traffic crash risk management principles however, the criteria where digital signs should be considered with greater scrutiny are:

- Locations that are highly unusual in their configuration complexity, or
- Locations that are inherently unsafe anyway, based on crash records.

The proposed sign location does not meet either of the above criteria and is considered to be a very low risk to driver distraction, based on the summary of the research.

5. TRAFFIC SAFETY ASSESSMENT

5.1 Key Assumptions

The assessment of the proposed digital sign was undertaken on the basis that:

- There is currently no advertising sign at the subject site. Therefore, driver sightlines have been estimated based on information regarding where the proposed digital sign is to be installed
- The display of content will be static for a minimum dwell time of 25 seconds with a transition time of no more than 0.1 seconds based on the *Signage Guidelines* criteria
- Illumination/lighting levels for the digital sign will comply with the *Signage Guidelines* and maintain lighting levels to match the surrounding environment at the site.

5.2 Site Inspection

A site inspection was undertaken on Thursday, 28 July 2022 during daytime hours (around 12:30pm). The weather was clear and traffic conditions were moderate. In-vehicle video recordings were taken for further analysis and for use in compiling photo montages of the driver's perspective on the approaches to the site.

The photo montages can be found in **Appendix C**.

5.3 Review of Crash Data

Crash data for the relevant section of the M2 was obtained from Transport for NSW in order to assess the crash history in proximity to the subject site. The most recent five years of crash data at the time of the data request was for 2016-2020. Crashes involving vehicles travelling in the direction of and in view of the sign were used for the assessment. The viewing area of the proposed digital sign is from approximately 685m north-west along the M2, though it would only be clearly visible to drivers within 200m as described in Section 2.1. As such, crash data was only considered for crashes **within 200m on approach to the proposed sign location**.

As per Rule 287 (3) of the Australian Road Rules, crashes are only recorded if they are reported to the police and when one of the following occurs:

- Any person is killed or injured
- Drivers involved in the crash do not exchange particulars
- When a vehicle involved in the crash is towed away.

The crash data was provided in the following degree categories:

- **Fatal –** a crash in which at least one person was killed
- **Serious injury –** a crash involving at least one person identified in a police report and matched to a health record indicating a hospital stay due to injuries sustained in a crash, or is identified as an iCare (Lifetime Care) participant AND no one was killed in the crash
- **Moderate injury –** a crash involving at least one person identified in a police report who is matched to a health record that indicates that they were treated at an emergency department but were not admitted for a hospital stay, or is matched to a CTP claim indicating a moderate or higher injury AND no one was killed or seriously injured
- **Minor/Other injury –** a crash involving at least one person identified as an injury in a police report who is not matched to a health record that indicates the level of injury severity, or is matched to a minor injury CTP claim AND no one was killed, seriously injured or moderately injured

- **Non-casualty (towaway) –** a crash in which no one was killed or injured but at least one motor vehicle was towed away.

The crash data was mapped using GIS software and is presented in **Appendix D** along with a detailed record list. The crash maps are presented in terms of degree and type (road user movement describing the first impact of the crash), with a degree summary provided in Table 5.1.

Table 5.1: Crash Degree Summary on Approach to the Site (2016-2020)

Year	Crash Degree					Total
	Fatal	Serious Injury	Moderate Injury	Minor/Other Injury	Non-casualty (towaway)	
2016	-	-	-	-	1	1
2017	-	-	-	-	-	-
2018	-	-	-	-	-	-
2019	-	-	-	-	-	-
2020	-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**1**	**1**

As shown in the above table, **only one crash was reported between January 2016 and December 2020**. It occurred in February 2016 during daylight and in dry road surface conditions, right below the Lane Cove Road overpass. The crash was classified as 'other same direction' and resulted in a towaway.

The site is inherently safe, with practically no driving distractions and an exceptionally low cognitive load imposed on drivers by the road environment.

5.4 Approach Sightline Assessments

5.4.1 Description of Approaches

The eastbound approach in proximity to the proposed sign is described in Table 5.2.

Table 5.2: Approach Attributes – M2 eastbound

Attribute	Details
Posted speed limit	100km/h
Decision points within view of the site	There are no decision points within view of the proposed advertising
Approach arrangement	2 uninterrupted lanes (lanes 1 and 2)
Sight length	From approximately 685m north-west of the proposed sign, although the sign could only realistically be recognised from about 200m away. At this distance, the sign would appear at the windscreen at a size of 6cm wide x 1.6cm high
Minimum duration of visibility	25s at free-flow speed

5.4.2 Driver Sightline Assessment

Process

In-vehicle observations were undertaken to assess the subject site considering key decision points and the influence on or from traffic control devices. An assessment of still images taken from the driver's perspective with a windscreen-mounted camera is presented in the following section. It should be noted that the assessment was undertaken based on a standard passenger car and as such a driver's eye height may vary for larger and smaller vehicles.

The premise of the assessment is to ensure that the proposed location of the digital sign maintains a driver's sightline to traffic control devices and is not located as such that it may be confused with or confuse the interpretation of these traffic control devices.

The driver's cognitive load specific to the driving environment on approach to the proposed sign has also been considered. Typically, locations where digital signs could have a greater influence crash risk are locations where rapid, complex, multi-factor decision making is required.

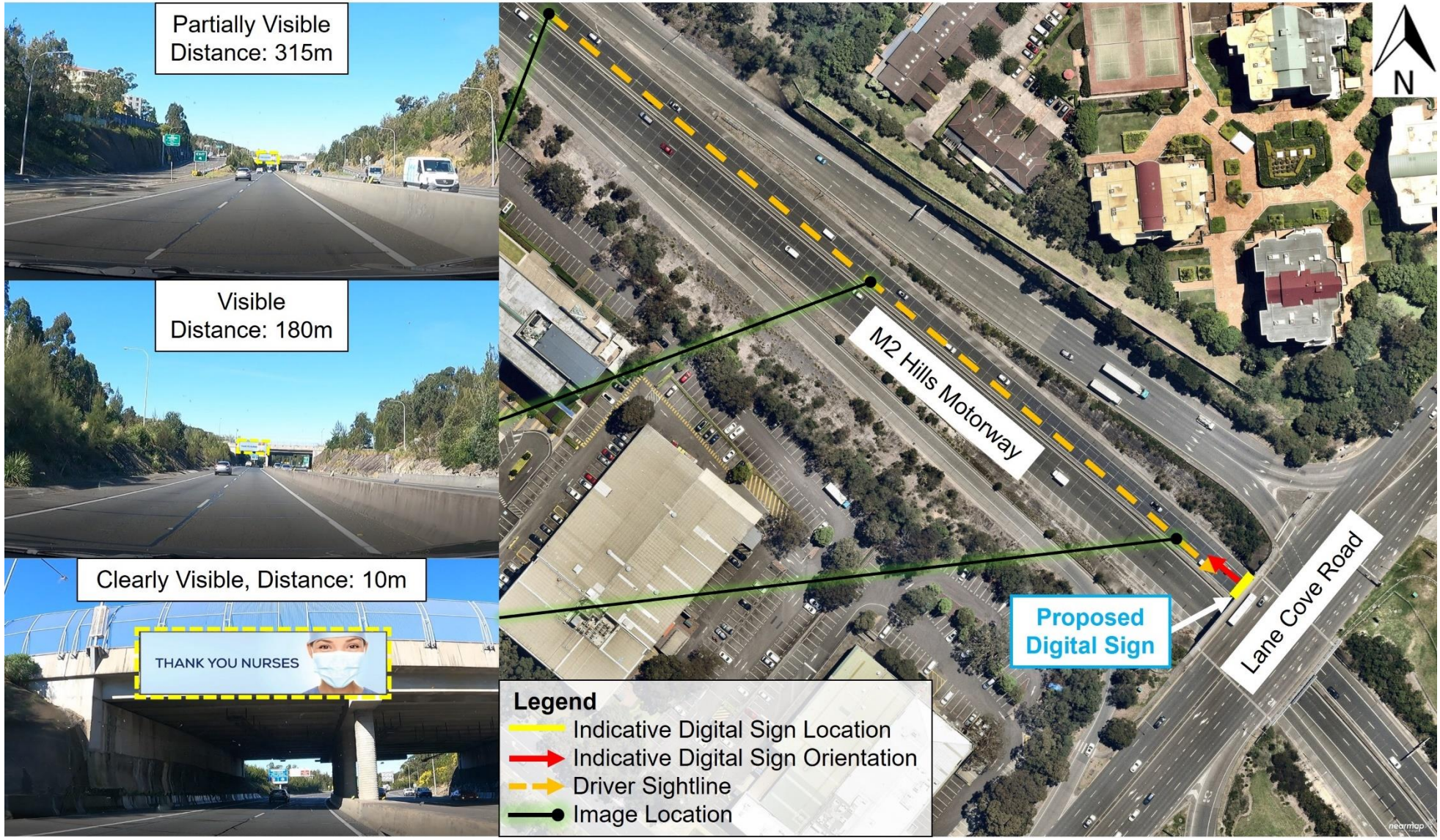
M2 Eastbound

The eastbound approach along the M2 is straight and flat before a long right-hand curve starting at the Lane Cove Road overpass and proposed digital sign. The sign could be seen from approximately 685m away but would be very small and its content would be unrecognisable at this range. From about 200m away, the sign is still relatively small in the forward field of view, but drivers would be likely to be able to identify its advertising contents.

A digital sign in this location will not obstruct sightlines to, or influence the messaging of, traffic control devices or signs. Despite the 100km/h speed limit, the approach to it does not require rapid, complex decision making by drivers and is a location of low cognitive load. There are no on-ramps or off-ramps in proximity to the approach to the sign. The decision point for the diverge movement to the Lane Cove Road eastbound off-ramp is approximately 400m back from the sign at which point the sign would be unrecognisable and smaller than a postage stamp in size at the windscreen.

All relevant signage (including the 'LANE COVE TUNNEL AHEAD' / 'TOLL APPLIES' and 'TUNNEL CLEARANCE / NO DANGEROUS GOODS IN TUNNEL') are located beyond the overpass and come into clear view when a driver is close to the passing under the underpass, where a driver wouldn't be able to see the digital sign because it would be obscured by the vehicle's roof.

The in-vehicle sightlines from the M2 eastbound are shown in Figure 5.1, clearly demonstrating that all vehicle movements are in the same sightline as the digital sign, which means no risk of distraction away from the forward roadway when glancing to it.



[1]*Distances measured in Nearmap*
[2]*Sign location is indicative, not to scale and for illustration purposes only.*

Figure 5.1: In-vehicle viewing range and views along the M2 eastbound

5.5 Compliance Assessment

5.5.1 Industry and Employment SEPP Schedule 5

The assessment against Industry and Employment SEPP Schedule 5 is provided in Table 5.3. Whilst the criteria are quite generic, the basis for the responses to each criterion is provided next to them.

Table 5.3: Assessment against Industry and Employment SEPP Schedule 5

Section	Criteria	Response
8. Safety	Would the proposal reduce the safety for any public road?	**No –** The proposal would not reduce the safety to the public road because there are no crash-related risks apparent in the crash data.
	Would the proposal reduce the safety for pedestrians or bicyclists?	**No –** While cyclists are allowed on the M2, it is a high-difficulty environment, meaning few cyclists would use it and the shoulder is 3m wide. In any event, the change in cyclist safety risk associated with a digital sign installation is considered to be negligible.
	Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?	**No –** No sightlines for pedestrians and children are obscured by the proposal as no pedestrians are allowed on the M2.

5.5.2 Transport for NSW Advertising Sign Safety Assessment Matrix

Table 5.4 details the assessment against the Transport for NSW Advertising Sign Safety Assessment Matrix.

Table 5.4: Assessment against the Transport for NSW Advertising Sign Assessment Matrix

Consideration	Response	Risk Rating	Risk Level
A. It obscures a view of an object/vehicle/pedestrian that creates a hazard	The proposed sign will be located above all surrounding objects/vehicles etc.	1	Low
B. Sign positioning relative to travel direction	The proposed sign will be positioned over the travel lanes on the M2 Lane Cove Road overpass and would be in the ordinary field of view. It will be visually prominent eastbound.	1	Low
C. It distracts a driver at a critical time	The proposed sign will not be located near any decision points.	1	Low
D. It interferes with the effectiveness and safety of a traffic control device (e.g. traffic signs, traffic signals or other traffic control devices)	The proposed sign is unlikely to noticeably obstruct or interfere with a driver's ability to read the 'LANE COVE TUNNEL AHEAD' / 'TOLL APPLIES' and 'TUNNEL CLEARANCE / NO DANGEROUS GOODS IN TUNNEL' signs after the overpass.	1	Low
E. Sign clutter	No other advertising sign is visible when a driver is in view of the subject site.	1	Low

5.5.3 Transport Corridor Outdoor Advertising and Signage Guidelines Table 3

Table 5.5 details the assessment against the digital sign criteria in Table 3 of the *Signage Guidelines*.

Table 5.5: Assessment against the Signage Guidelines Digital Sign Criteria

Criteria	Response
a. Each advertisement must be displayed in a completely static manner, without any motion, for the approved dwell time as per criterion (d) below.	Conditions can be imposed by the consent authority to ensure that the sign is completely static for the specified dwell time.
b. Message sequencing designed to make a driver anticipate the next message is prohibited across images presented on a single sign and across a series of signs.	Conditions can be imposed by the consent authority to ensure there is no message sequencing that creates driver anticipation for the next message on the proposed sign or with any other signs.
c. The image must not be capable of being mistaken: i. for a prescribed traffic control device because it has, for example, red, amber or green circles, octagons, crosses or triangles or shapes or patterns that may result in the advertisement being mistaken for a prescribed traffic control device ii. as text providing driving instructions to drivers.	Conditions can be imposed by the consent authority to ensure that sign content, design, imagery and messages neither replicate nor can be mistaken for a prescribed traffic control device or instruction to drivers. For example, advertisements must not instruct drivers to perform an action such as 'Stop'.
d. Dwell times for image display must not be less than: i. 10 seconds for areas where the speed limit is below 80km/h ii. 25 seconds for areas where the speed limit is 80km/h and over.	The minimum allowed dwell time is 25 seconds based on the posted speed limit of 100km/h. Conditions can be imposed by the consent authority to ensure this minimum dwell time.
e. The transition time between messages must be no longer than 0.1 seconds, and in the event of image failure, the default image must be a black screen.	Conditions can be imposed by the consent authority to ensure that the sign has a transition time of no more than 0.1 seconds and a black screen in the event of image failure.
f. Luminance levels must comply with the requirements in Section 3 below.	This area is Zone 3 as categorised in Section 3.3 of the *Signage Guidelines*. Acceptable luminance levels for this zone as specified in Table 6 of the *Signage Guidelines* are: no limit (full sun on face of signage), 6000cd/m^2 (daytime), 700cd/m^2 (twilight and inclement weather) and 350cd/m^2 (night-time). Conditions can be imposed by the consent authority specifying maximum allowable luminance levels.
g. The images displayed on the sign must not otherwise unreasonably dazzle or distract drivers without limitation to their colouring or contain flickering or flashing content.	Conditions can be imposed by the consent authority to ensure that the sign's images comply with requirements to not contain flickering or flashing content.
h. The amount of text and information supplied on a sign should be kept to a minimum (e.g. no more than a driver can read at a short glance).	Conditions can be imposed by the consent authority to ensure that minimal text and information is supplied on a sign no more than a driver can read at a short glance.
i. Any sign that is within 250m of a classified road and is visible from a school zone must be switched to a fixed display during school zone hours.	N/A – The sign is not visible from a school zone.

Criteria	Response
j. Each sign proposal must be assessed on a case-by-case basis including replacement of an existing fixed, scrolling or tri-vision sign with a digital sign, and in the instance of a sign being visible from each direction, both directions for each location must be assessed on their own merits.	All relevant traffic directions have been assessed on their own merits.
k. At any time, including where the speed limit in the area of the sign is changed, if detrimental effect is identified on road safety post installation of a digital sign, RMS reserves the right to re-assess the site using an independent RMS-accredited road safety auditor. Any safety issues identified by the auditor and options for rectifying the issues are to be discussed between RMS and the sign owner and operator.	Noted.
l. Sign spacing should limit drivers' view to a single sign at any given time with a distance of no less than 150m between signs in any one corridor. Exemptions for low speed, high pedestrian zones or CBD zones will be assessed by RMS as part of their concurrence role.	No other sign is visible less than 150m.
m. Signs greater than or equal to 20sqm must obtain RMS concurrence and must ensure the following minimum vertical clearances; i. 2.5m from lowest point of the sign above the road surface if located outside the clear zone ii. 5.5m from lowest point of the sign above the road surface if located within the clear zone (including shoulders and traffic lanes) or the deflection zone of a safety barrier if a safety barrier is installed. If attached to road infrastructure (such as an overpass), the sign must be located so that no portion of the advertising sign is lower than the minimum vertical clearance under the overpass or supporting structure at the corresponding location.	Under Section 4.13(2) of the *Environmental Planning and Assessment Act 1979*, development to be determined by the Minister does not require TfNSW concurrence. Instead, the Minister is only required to consult with TfNSW.
n. An electronic log of a sign's operational activity must be maintained by the operator for the duration of the development consent and be available to the consent authority and/or RMS to allow a review of the sign's activity in case of a complaint.	Conditions can be imposed by the consent authority to ensure that an electronic log is kept for the duration of the consent and be available to the consent authority and/or TfNSW for review in case of a complaint.
o. A road safety check which focuses on the effects of the placement and operation of all signs over 20sqm must be carried out in accordance with Part 3 of the RMS Guidelines for Road Safety Audit Practices after a 12 month period of operation but within 18 months of the signs installation. The road safety check must be carried out by an independent RMS-accredited road safety auditor who did not contribute to the original application documentation. A copy of the report is to be provided to RMS and any safety concerns identified by the auditor relating to the operation or installation of the sign must be rectified by the applicant. In cases where the applicant is the RMS, the report is to be provided to the Department of Planning and Environment as well.	Conditions can be imposed by the consent authority for a road safety check to be carried out after 12 months but within 18 months of the sign's installation.

6. CONCLUSIONS

The key conclusions from the traffic safety assessment to enable the installation of a digital LED advertising sign on the Lane Cove Road eastbound overpass of the M2 Hills Motorway (M2) in Macquarie Park are summarised as follows:

- There is currently no advertising sign at the site where the digital sign is proposed
- The proposed sign will not obstruct or interfere with the view of or restrict sight distances to any intersections, traffic control devices, vehicles or cyclists given its location above the road
- The driving approach to the proposed sign is relatively straight with no on-ramps or off-ramps in this zone
- The proposed sign is not expected to reduce the safety of any traffic or cyclist movements given its location. It will be located within a driver's ordinary field of view when approaching from the north-west and a glance to the sign will still permit co-incident recognition of vehicle and cyclist movements in the forward view in a free-flowing environment where rapid multi-factor decision making is not required
- The proposed sign is in the ordinary field of view of a driver, and therefore would not distract a driver's view from the forward roadway where driving-critical events could simultaneously be recognised in the extremely unlikely event that they occur
- A review of available five years of crash data within 200m of the site (the distance at which advertisements could be clearly recognised) showed an exceptionally low crash rate. Furthermore, the data does not identify an unusually high or inherently high crash risk on approach to the site that would deem the proposed location unsuitable
- The proposed sign complies with the requirements of the Industry and Employment SEPP and Transport for NSW Advertising Sign Safety Assessment Matrix in terms of obscurity, positioning and sign clutter
- The proposed digital sign should be conditioned to comply with the requirements of the *Signage Guidelines* in terms of display and operational requirements, including:
  - Message displays remaining static
  - Sequencing of displays or messaging
  - Images not being mistaken for a traffic control device
  - Minimum dwell time
  - Transition of displays
  - Luminance levels
  - The use of flickering, flashing or moving content
  - Quantity/size of text used on message displays
  - A re-assessment of the digital sign should any detrimental effects on road safety be identified post-installation
  - Maintaining a log of the sign's activity
  - A road safety check after 12 months but within 18 months of the sign's installation.

Given the above conclusions, the digital sign should be approved as proposed.

REFERENCES

Austroads (2013). The Impacts of Roadside Advertising on Road Safety, AP-R420-13.

Decker et al. (2015), The Impact of Billboards on Driver Visual Behavior: A Systematic Literature Review, National Center for Biotechnology Information, U.S. National Library of Medicine. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4411179/

Hawkins, H.G., Kuo, P-F & Lord, D. (2012). Statistical Analysis of the Traffic Safety Impacts 5 of On-Premise Digital Signs. https://pdfs.semanticscholar.org/e3b6/2957b23906769969f4a00f8815fbe9bdce7e.pdf?_ga=2.258010442.1941184793.1579676989-2095687016.1579676989

Lam, L.T. (2002). Distractions and the risk of car crash injury: The effect of drivers' age. Journal of Safety Research, pp. 411-419.

Perez, W., & Bertola, M.A. (2011). The effect of visual clutter on driver eye glance behaviour. Proceedings of the Sixth International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design, Olympic Valley –Lake Tahoe, CA. Retrieved from http://drivingassessment.uiowa.edu/sites/default/files/DA2011/Papers/027_PerezBertola.pdf.

Regan, M.A., Hallett, C. & Gordon, C. (2011). Driver distraction and driver inattention: Definition, relationship and taxonomy. Accident Analysis & Prevention, vol. 43, no. 5, pp. 1771-1781.

Samsa, C. (2015). Digital billboards "down under". Are they distracting to drivers and can industry and regulators work together for a successful road safety outcome? Proceedings of the 2015 Australasian Road Safety Conference, Retrieved from http://acrs.org.au/files/papers/arsc/2015/SamsaC%20199%20Digital%20billboards%20down%20under.pdf.

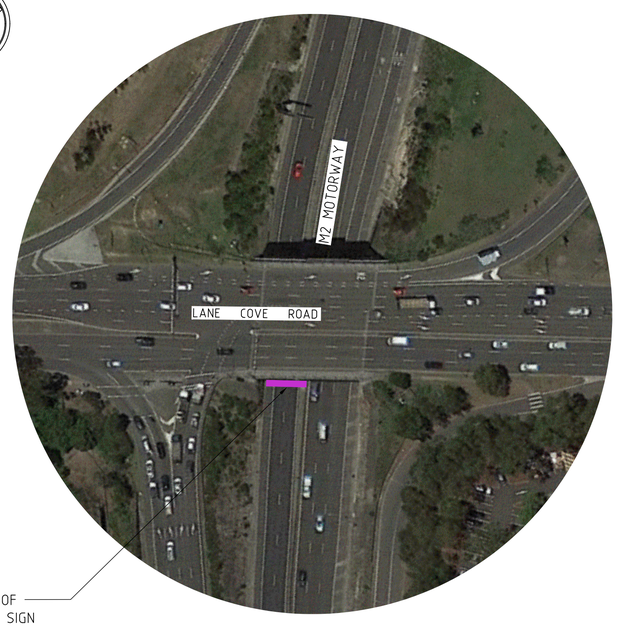
Smiley, A., Bhagwant, P., Bahar, G., Mollett, C., Lyon, C., Smahel, T. & Kelman, W.L. (2005). Traffic safety evaluation of video advertising signs. Transportation Research Record: Journal of the Transportation Research Board, 1937, pp 105-112.

Tantala, M.W. & Tantala, A.M. (2010). A study of the relationship between digital billboards and traffic safety in the Greater Reading Area, Berks County, Pennsylvania. Submitted to the Foundation for Outdoor Advertising Research and Education (FOARE).

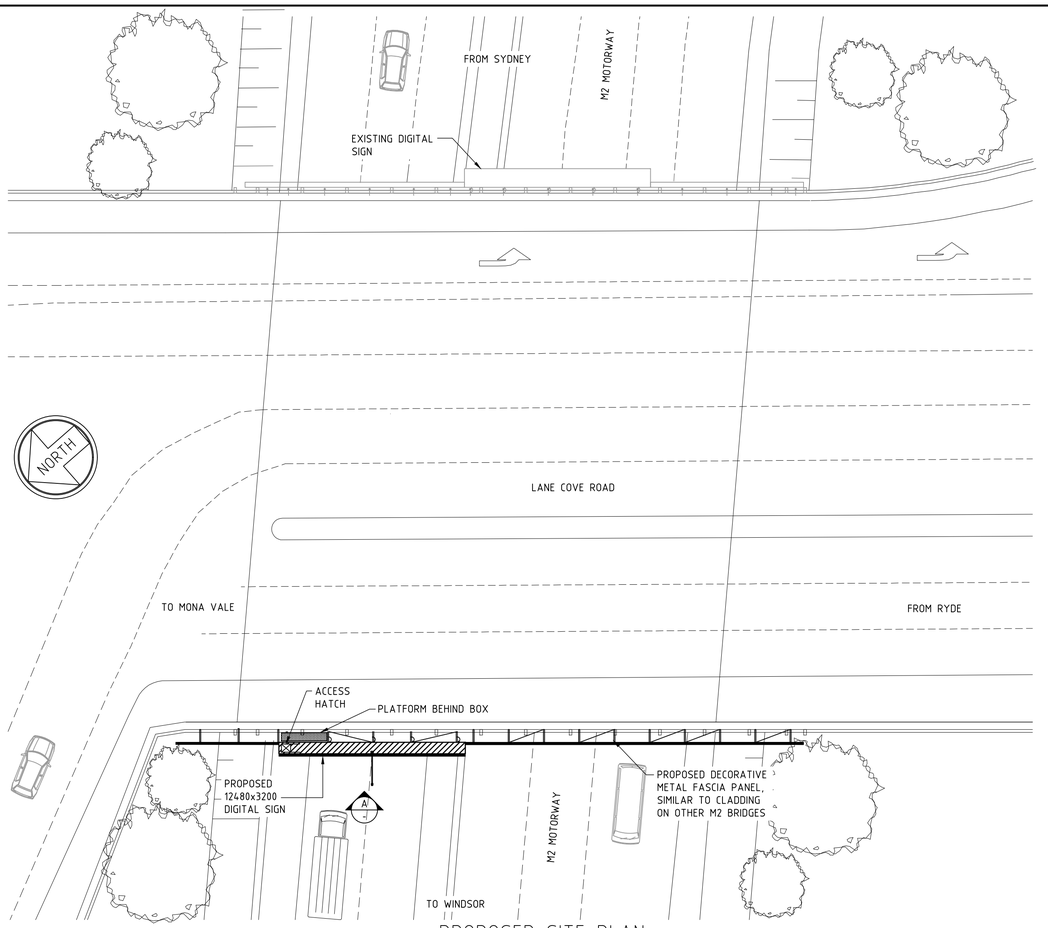
US Department of Transport Federal Highway Administration (2012). Driver visual behavior in the presence of commercial electronic variable message signs (CEVMS).

Victor, T.W., Harbluk, J.L. & Engstrom, J.A. (2005). Sensitivity of eye-movement measures to in-vehicle task difficulty. Transportation Research, vol. 8, no. 2, pp. 167-190.

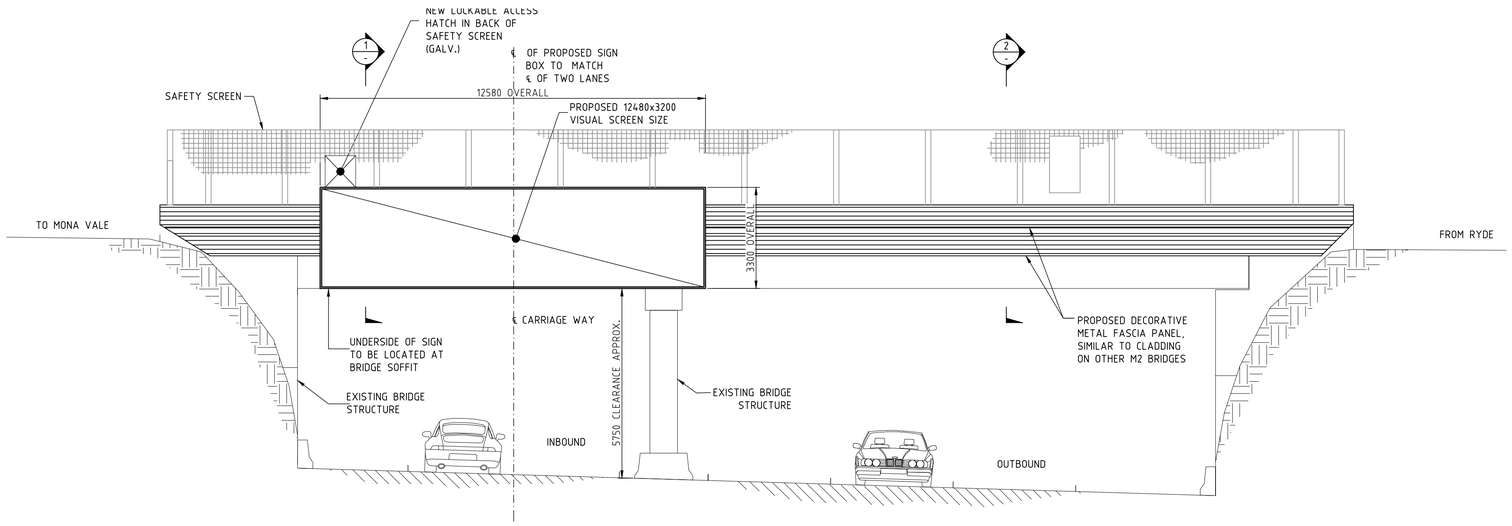
Appendix A: Proposed Development Plan



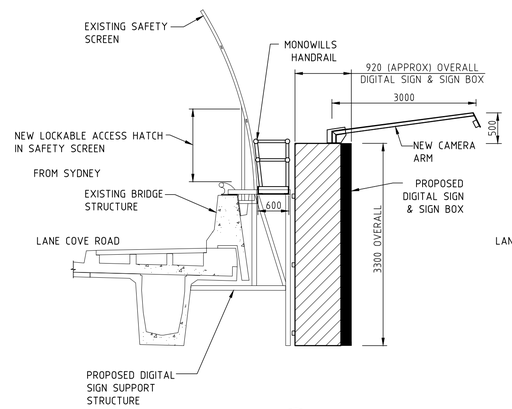
AERIAL PHOTO
NTS



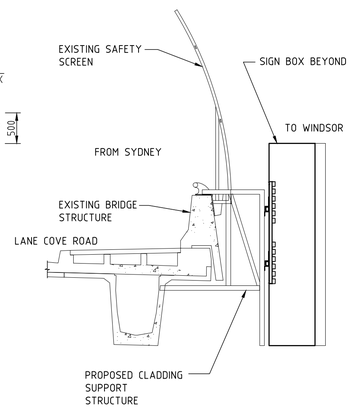
PROPOSED SITE PLAN
SCALE 1:200



ELEVATION A
SCALE 1:100



SECTION 1
SCALE 1:50



SECTION 2
SCALE 1:50

NOT FOR CONSTRUCTION

ISS	DATE	COMMENT
A	03/08/22	ISSUED FOR APPROVAL

Dennis Bunt Consulting Engineers Pty Ltd
Suite 8, Building 7, 49 Frenchs Forest Road East,
Frenchs Forest, NSW 2086
P.O. Box 652, Forestville, NSW 2087
Ph: 02 9451 3455 Fax: 02 9451 3466
Email: info@dbce.com.au
ABN 23 039 013 724

CLIENT: MANBOOM

PROJECT: LANE COVE ROAD BRIDGE, MACQUARIE PARK, INBOUND

TITLE: PROPOSED DIGITAL SIGN
GENERAL ARRANGEMENT & SITE PLAN, ELEVATION & SECTION

DRAWN AT	DESIGN DB	DATE: AUG'22
JOB NO: 22141-4		DWG NO: DA01
SCALE @ A1: AS SHOWN		REV: A

Appendix B: Existing M2 Digital Sign Crash Data Comparison Technical Note

Issue History

File Name	Prepared	Reviewed	Issued by	Date	Issued to
P5486.001T M2 Digital Sign Pre_Post-Installation Crash Data Comparison	A. Suriono / S. Daizli	D. Bitzios	S. Daizli	9/11/2022	gerry@digitalplacesolutions.com
P5486.002T M2 Digital Sign Pre_Post-Installation Crash Data Comparison	S. Daizli	D. Bitzios	S. Daizli	14/11/2022	gerry@digitalplacesolutions.com

M2 Hills Motorway

Digital Sign Pre-installation vs. Post-installation Crash Data Comparison

Executive Summary

Bitzios Consulting has been engaged by Manboom Signage to undertake traffic safety assessments for the installation of nine new digital LED advertising signs at eight locations along the M2 Hills Motorway (M2).

To inform these assessments, 'before-installation' versus 'after-installation' crash data has been analysed on approach to nine existing digital signs along the M2 at seven locations. The assessment has compared crashes before installation to after installation to understand if there has been any change in crash rate or crash types on the visual approach to each digital sign, and to infer if any relationships exist between digital sign distraction and crash outcomes.

12-month post-installation road safety checks of the digital signs were also undertaken by Winning Traffic Solutions (WTS).

Review of Crash Data

The number of pre-installation and post-installation crashes between 2012 and 2021 within 200m of the nine existing digital signs is summarised in Table ES.1.

Table ES.1: Pre-installation and Post-installation Crashes at Each Site (p.a.)

Site	Location	Installation Date	Pre-installation Crashes p.a.	Post-installation Crashes p.a.
1	Delhi Road inbound, North Ryde	December 2017	1	1
2	Delhi Road outbound, North Ryde	December 2017	<1	0
3	Lane Cove Road outbound, Macquarie Park	May 2017	0	<1
4	Murray Farm Road outbound, Cheltenham	July 2019	<1	0
5	Pennant Hills Road inbound, Carlingford	May 2017	2	<1
6	Barclay Road inbound, North Rocks	July 2018	<1	<1
7	Barclay Road outbound, North Rocks	July 2018	<1	<1
8	Ixion Street outbound, Baulkham Hills	November 2017	0	0
9	Langdon Road inbound, Baulkham Hills	November 2017	<1	<1

Key Findings

Key findings when reviewing the data across all sites are:

- The M2 in locations that approach bridges is inherently safe with very low crash rates given the volume and speed of traffic on the M2
- Whilst there is a reduction in crashes on average post-installation of digital signs on the M2, there is absolutely no statistical causal relationship evident between the presence of digital signs and changing crash rates (up or down) where they have been installed.

Whilst each site is unique and should be assessed on its particular circumstances, given the above conclusions, there is no evidentiary basis to claim that the installation of digital signs on bridges along the M2 will lead to a higher crash rate than currently exists unless the installation is in a substantially different context to signs assessed in this Technical Note.

1. Introduction

1.1 Background

Bitzios Consulting has been engaged by Manboom Signage to undertake traffic safety assessments for the installation of nine new digital LED advertising signs at eight locations along the M2 Hills Motorway (M2).

To inform these assessments, 'before-installation' versus 'after-installation' crash data has been analysed on approach to nine existing digital signs along the M2 at seven locations. The assessment has compared crashes before installation to after installation to understand if there has been any change in crash rate or crash types on the visual approach to each digital sign, and to infer if any relationships exist between digital sign distraction and crash outcomes.

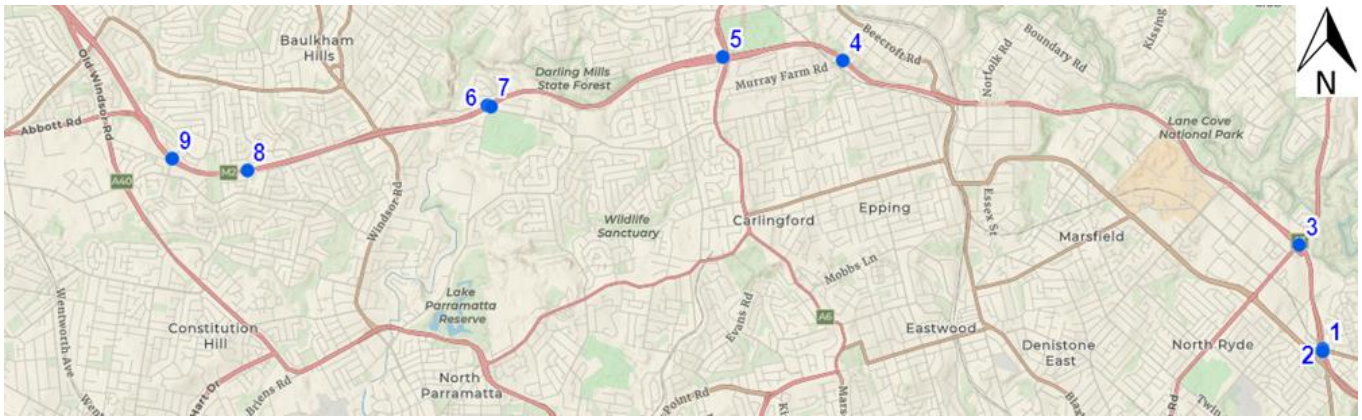
The analysis is directly relevant to the assessment of the potential change in crash rate or crash types post-installation of the nine new proposed digital signs because they are also on the M2 corridor at similar types of locations.

The existing digital sign sites for which the crash data analysis has been completed are listed in Table 1.1 and the site locations shown in Figure 1.1. All of the sites had static advertising signs in place for all or part of the pre-installation crash reporting period. Also, 12-month post-installation "road safety checks" of each digital sign were undertaken by Winning Traffic Solutions (WTS) and their key findings are also presented

Table 1.1: Existing M2 Digital Sign Sites for Crash Data Comparison

Site	Location*	Sign Type	Installation Date
1	Delhi Road inbound, North Ryde	Bridge	December 2017
2	Delhi Road outbound, North Ryde	Bridge	December 2017
3	Lane Cove Road outbound, Macquarie Park	Bridge	May 2017
4	Murray Farm Road outbound, Cheltenham	Bridge	July 2019
5	Pennant Hills Road inbound, Carlingford	Bridge	May 2017
6	Barclay Road inbound, North Rocks	Bridge	July 2018
7	Barclay Road outbound, North Rocks	Bridge	July 2018
8	Ixion Street outbound, Baulkham Hills	Bridge	November 2017
9	Langdon Road inbound, Baulkham Hills	Bridge	November 2017

**Inbound = sign faces drivers travelling towards the Sydney CBD.*
Outbound = sign faces drivers travelling from the Sydney CBD.



Adapted from Charted Territory Map

Figure 1.1: Locations of the Existing Digital Signs

1.2 Crash Data Sources and Types

Crash data for the relevant sections of the M2 and parallel on-ramps and off-ramps was obtained from Transport for NSW. The most recent ten years of crash data at the time of the data request was for 2012-2021. Crashes involving vehicles travelling in the direction of and in view of the signs were used for the assessment. The relevant viewing range for all nine signs is from approximately 200m away along the M2 main carriageways, as well as the Delhi Road inbound off-ramp, Lane Cove Road outbound G-loop and Pennant Hills Road inbound off-ramp associated with the signs in those locations.

As per Rule 287 (3) of the Australian Road Rules, crashes are only recorded if they are reported to the police and when one of the following occurs:

- Any person is killed or injured
- Drivers involved in the crash do not exchange particulars
- When a vehicle involved in the crash is towed away.

The crash data was provided in the following crash severity categories:

- **Fatal –** a crash in which at least one person was killed
- **Serious injury –** a crash involving at least one person identified in a police report and matched to a health record indicating a hospital stay due to injuries sustained in a crash, or is identified as an iCare (Lifetime Care) participant AND no one was killed in the crash
- **Moderate injury –** a crash involving at least one person identified in a police report who is matched to a health record that indicates that they were treated at an emergency department but were not admitted for a hospital stay, or is matched to a CTP claim indicating a moderate or higher injury AND no one was killed or seriously injured
- **Minor/Other injury –** a crash involving at least one person identified as an injury in a police report who is not matched to a health record that indicates the level of injury severity, or is matched to a minor injury CTP claim AND no one was killed, seriously injured or moderately injured
- **Non-casualty (towaway) –** a crash in which no one was killed or injured but at least one motor vehicle was towed away.

The crash data was mapped using GIS software and is presented in **Attachment A** along with a detailed record list. The crash maps are presented in terms of severity and type which is the road user movement describing the first impact of the crash, with severity and type summaries for each site provided in the following sections. Key findings from the WTS road safety checks also are provided.

As only the month and year have been provided for the digital sign installation dates and crashes, crashes that occurred during the installation month were assumed to have occurred post-installation.

2. Site 1. Delhi Road inbound, North Ryde

2.1 Review of Crash Data

The pre-installation and post-installation crash severity summary on approach to the Delhi Road inbound sign is provided in Table 2.1.

Table 2.1: Crash Severity Summary on Approach to Site 1 (2012-2021)

Year	Crash Severity					Total
	Fatal	Serious Injury	Moderate Injury	Minor/Other Injury	Non-casualty (towaway)	
Pre-installation						
2012	-	-	-	-	-	-
2013	-	-	-	-	1	1
2014	-	-	-	1	-	1
2015	-	-	-	-	-	-
2016	-	1	1	-	-	2
Jan-Nov 2017	-	-	-	-	-	-
Total	**-**	**1**	**1**	**1**	**1**	**4**
Post-installation						
Dec 2017	-	-	-	-	-	-
2018	-	-	1	-	-	1
2019	-	2	-	-	-	2
2020	-	-	-	-	1	1
2021	-	-	-	-	1	1
Total	**-**	**2**	**1**	**-**	**2**	**5**

Source: Transport for NSW

As shown in the above table:

- There has been no substantial change in crash data post-installation (remaining at around 1 crash per year) and the site remains inherently safe
- 1 'rear end' crash in 2016 **pre-installation** resulted in serious injury. It occurred approximately 90m before the Delhi Road overpass. 2 of the other 3 crashes pre-installation were also 'rear end' and occurred in dry road surface and fine/overcast conditions
- There were 2 crashes in 2019 post-installation which resulted in serious injury, including:
  - 1 'rear end' crash approximately 40m before the Delhi Road overpass
  - 1 'U-turn' crash on the Delhi Road inbound off-ramp approximately 35m before the Delhi Road signalised intersection in darkness (*this crash is completely un-related to the digital sign as it is not distraction-influenced*).
- The other 3 crashes post-installation were all 'rear end' and occurred in dry road surface and fine/overcast conditions.

The data suggests that the digital sign had no tangible distraction influence on crashes.

2.2 Road Safety Check Findings

Key findings from the 12-month road safety check were that:

- *"The subject signs are generally isolated from surrounding distractions (refer Figs 2 & 3 above) and sufficiently offset from road user activities not to cause a significant increase in the "risks" to road user safety within the operational road network."*
- *"Taking into consideration the driving environment for both directions in the M2 Motorway containing few driver distractions, other than the signs, it is considered road user safety is not unduly compromised by the placement and operation of the subject Digital Advertising Signs."*
- *"it is considered the Road Safety Objectives SEPP 64 Transport Corridor Outdoor Advertising and Signage Guidelines - Section 3 Advertising and Road Safety have been met."*

3. Site 2. Delhi Road outbound, North Ryde

3.1 Review of Crash Data

A pre-installation and post-installation crash severity summary on approach to the Delhi Road outbound sign is provided in Table 3.1.

Table 3.1: Crash Severity Summary on Approach to Site 2 (2012-2021)

Year	Crash Severity					Total
	Fatal	Serious Injury	Moderate Injury	Minor/Other Injury	Non-casualty (towaway)	
Pre-installation						
2012	-	-	-	-	1	1
2013	-	-	-	-	-	-
2014	-	-	-	-	1	1
2015	-	-	-	-	-	-
2016	-	-	-	-	-	-
Jan-Nov 2017	-	-	-	1	-	1
Total	**-**	**-**	**-**	**1**	**2**	**3**
Post-installation						
Dec 2017	-	-	-	-	-	-
2018	-	-	-	-	-	-
2019	-	-	-	-	-	-
2020	-	-	-	-	-	-
2021	-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**	**-**

Source: Transport for NSW

As shown in the above table, no crashes were reported **post-installation** and the site remains inherently safe. 2 of the 3 crashes pre-installation were 'rear end', 1 of which occurred in wet road surface and rainy conditions.

The data suggests that the digital sign had no tangible distraction influence on crashes.

3.2 Road Safety Check Findings

Key findings from the 12-month road safety check were that :

- *"The subject signs are generally isolated from surrounding distractions (refer Figs 2 & 3 above) and sufficiently offset from road user activities not to cause a significant increase in the "risks" to road user safety within the operational road network."*
- *"Taking into consideration the driving environment for both directions in the M2 Motorway containing few driver distractions, other than the signs, it is considered road user safety is not unduly compromised by the placement and operation of the subject Digital Advertising Signs."*
- *"Therefore, it is considered the Road Safety Objectives SEPP 64 Transport Corridor Outdoor Advertising and Signage Guidelines - Section 3 Advertising and Road Safety have been met."*

4. Site 3. Lane Cove Road outbound, Macquarie Park

4.1 Review of Crash Data

A pre-installation and post-installation crash severity summary on approach to the Lane Cove Road outbound sign is provided in Table 4.1.

Table 4.1: Crash Severity Summary on Approach to Site 3 (2012-2021)

Year	Crash Severity					Total
	Fatal	Serious Injury	Moderate Injury	Minor/Other Injury	Non-casualty (towaway)	
Pre-installation						
2012	-	-	-	-	-	-
2013	-	-	-	-	-	-
2014	-	-	-	-	-	-
2015	-	-	-	-	-	-
2016	-	-	-	-	-	-
Jan-May 2017	-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**	**-**
Post-installation						
Jun-Dec 2017	-	1	-	-	-	1
2018	-	-	-	-	1	1
2019	-	-	-	-	-	-
2020	-	-	-	-	-	-
2021	-	-	-	-	-	-
Total	**-**	**1**	**-**	**-**	**1**	**2**

Source: Transport for NSW

As shown in the above table:

- There has been no substantial change in crash data **post-installation** (less than 1 crash per year) and the site remains inherently safe
- Both crashes **post-installation** occurred on the Lane Cove Road G-loop (before it joins the M2) in wet road surface and rainy conditions, and after dark. The crashes were 'off carriageway right on left bend into object/parked vehicle'. Speed was a factor in both crashes
- There is no relationship between this type of crash in this location and distraction by the digital sign because it would be outside of the visual range when on the loop.

4.2 Road Safety Check Findings

Key findings from the 12-month road safety check were that :

- *"The subject sign is generally isolated from surrounding distractions (refer Figs 2 above), sufficiently offset from road user activities and observed displays are considered do not hold drivers attention beyond "glance appreciation" (Item E2) so as not to cause a significant increase in the "risks" to road user safety within the operational road network."*
- *"Though not a hazard under definition, it is considered the subject sign does not present as a significant road user risk. The influence of the sign and assumed low usage of the shared shoulder/bicycle lane should not distract driver appreciation and awareness under such circumstances of potential vehicle conflict."*
- *"Taking into consideration the driving environment for westbound travel in the M2 Motorway containing few driver distractions, other than the sign and bicycles, it is considered road user safety is not unduly compromised by the placement and operation of the subject Digital Advertising Sign."*
- *"Therefore, it is considered the Road Safety Objectives SEPP 64 Transport Corridor Outdoor Advertising and Signage Guidelines - Section 3 Advertising and Road Safety have been met."*

5. Site 4. Murray Farm Road outbound, Cheltenham

5.1 Review of Crash Data

A pre-installation and post-installation crash severity summary on approach to the Murray Farm Road outbound sign is provided in Table 5.1.

Table 5.1: Crash Severity Summary on Approach to Site 4 (2012-2021)

Year	Crash Severity					Total
	Fatal	Serious Injury	Moderate Injury	Minor/Other Injury	Non-casualty (towaway)	
Pre-installation						
2012	-	-	-	-	1	1
2013	-	-	-	-	-	-
2014	-	-	-	-	-	-
2015	-	-	-	-	-	-
2016	-	-	-	-	-	-
2017	-	1	-	-	-	1
2018	-	-	-	-	-	-
Jan-Jul 2019	-	-	-	-	-	-
Total	**-**	**1**	**-**	**-**	**1**	**2**
Post-installation						
Aug-Dec 2019	-	-	-	-	-	-
2020	-	-	-	-	-	-
2021	-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**	**-**

Source: Transport for NSW

As shown in the above table:

- No crashes were reported **post-installation** (albeit for a shorter period) and the site remains inherently safe
- 1 'lane change right' crash in 2017 **pre-installation** resulted in serious injury. It occurred approximately 90m before the Murray Farm Road overpass.

5.2 Road Safety Check Findings

Key findings from the 12-month road safety check were that :

- *The subject sign is generally isolated from surrounding distractions (refer Fig. 2 above), sufficiently offset from road user activities and observed displays are considered do not hold driver's attention beyond "glance appreciation" (Item E2 of Conditions) so as not to cause a significant increase in the "risks" to road user safety within the operational road network."*
- In relation to the M2 Warning Sign "No Dangerous Goods in Tunnel", located approximately 300m before the subject advertising sign, *"the advertising sign (being lit) could be a distraction in the first instance but not to a detrimental extent of the M2 warning sign being missed or to cause an accident"*.
- In relation to the Advance Direction sign, located approximately 80m before the subject advertising sign, *"Given the nature of this sign and its intent as a "guidance" sign, it is considered the advertising sign, though a possible distraction in the first instance, would not be to the detrimental extent of the sign being missed or to cause an accident"*.
- *"Taking into consideration the driving environment for westbound travel in the M2 Motorway containing few driver distractions, other than the sign and bicycles in the vicinity of the subject advertising sign, it is considered road user safety is not unduly compromised by the placement and operation of the subject Digital Advertising Sign."*
- *"Therefore, it is considered the Road Safety Objectives SEPP 64 Transport Corridor Outdoor Advertising and Signage Guidelines - Section 3 Advertising and Road Safety have been met."*

6. Site 5. Pennant Hills Road inbound, Carlingford

6.1 Review of Crash Data

A pre-installation and post-installation crash severity summary on approach to the Pennant Hills Road inbound sign is provided in Table 6.1.

Table 6.1: Crash Severity Summary on Approach to Site 5 (2012-2021)

Year	Crash Severity					Total
	Fatal	Serious Injury	Moderate Injury	Minor/Other Injury	Non-casualty (towaway)	
Pre-installation						
2012	-	-	-	1	2	3
2013	-	-	1	-	3	4
2014	-	-	-	-	-	-
2015	-	1	-	-	2	3
2016	-	-	-	-	-	-
Jan-Apr 2017	-	-	-	-	1	1
Total	**-**	**1**	**1**	**1**	**8**	**11**
Post-installation						
May-Dec 2017	-	-	-	-	-	-
2018	-	-.	-	-	1	1
2019	-	-	-	-	-	-
2020	-	-	-	-	-	-
2021	-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**1**	**1**

Source: Transport for NSW

As shown in the above table:

- The site remains inherently safe **post-installation**. The sole crash **post-installation** was a 'rear end' and resulted in a tow-away
- 9 of the 12 crashes **pre-installation** were 'rear end', including:
  - 1 in 2015, right below the Pennant Hills Road overpass. It occurred in dry road surface and fine conditions, and resulted in serious injury
  - 8 resulting in a tow-away, 1 of which occurred in wet road surface and rainy conditions.

The data suggests that the likelihood of a crash on approach to a bridge that may or may not have a static or a digital sign attached to it has absolutely no relationship to the presence of the sign and rather is a function of a range of other causes.

6.2 Road Safety Check Findings

Key findings from the 12-month road safety check were that :

- *"The subject sign is generally isolated from surrounding distractions (refer Figs 2 above), sufficiently offset from road user activities and observed displays are considered do not hold drivers attention beyond "glance appreciation" (Item E2) so as not to cause a significant increase in the "risks" to road user safety within the operational road network."*
- *"Though not a hazard under definition, it is considered the subject sign does not present as a significant road user risk. The influence of the sign and assumed low usage of the shared shoulder/bicycle lane and presence of buses should not distract driver appreciation and awareness under such circumstances of potential vehicle conflict."*
- *"Taking into consideration the driving environment for eastbound travel in the M2 Motorway containing few driver distractions, other than the sign and low volume bicycles and bus usage, it is considered road user safety is not unduly compromised by the placement and operation of the subject Digital Advertising Sign."*
- *"Therefore, it is considered the Road Safety Objectives SEPP 64 Transport Corridor Outdoor Advertising and Signage Guidelines - Section 3 Advertising and Road Safety have been met."*

7. Site 6. Barclay Road inbound, North Rocks

7.1 Review of Crash Data

A pre-installation and post-installation crash severity summary on approach to the Barclay Road inbound sign is provided in Table 7.1.

Table 7.1: Crash Severity Summary on Approach to Site 6 (2012-2021)

Year	Crash Severity					Total
	Fatal	Serious Injury	Moderate Injury	Minor/Other Injury	Non-casualty (towaway)	
Pre-installation						
2012	-	-	-	-	1	1
2013	-	-	-	-	-	-
2014	-	-	-	-	-	-
2015	-	-	-	-	-	-
2016	-	-	-	-	-	-
2017	-	-	1	1	1	3
Jan-Jun 2018	-	-	-	-	-	-
Total	**-**	**-**	**1**	**1**	**2**	**4**
Post-installation						
Jul-Dec 2018	-	-	1	-	-	1
2019	-	-	-	1	1	2
2020	-	-	-	-	-	-
2021	-	-	-	-	-	-
Total	**-**	**-**	**1**	**1**	**1**	**3**

Source: Transport for NSW

As shown in the above table:

- There has been no substantial change in crash data **post-installation** (remaining at less than 1 crash per year) and the site remains inherently safe
- There were 3 off carriageway into object/parked vehicle, 2 'rear end' and 2 'lane change left' crashes between January 2012 and December 2021. These types of crashes usually involve in-vehicle distraction because out of vehicle views typically allow for brake lights or adjacent vehicles to be observed at the same time.

7.2 Road Safety Check Findings

Key findings from the 12-month road safety check were that :

- *"The subject signs are generally isolated from surrounding distractions (refer Figs 2 & 3 above) and sufficiently offset from road user activities (i.e. adjacent Bus Stops, emergency telephones) not to cause a significant increase in the "risks" to road user safety within the operational road network."*
- *"Taking into consideration the driving environment for both directions in the M2 Motorway containing a "changed road environment (Bus interchange), it is considered road user safety is not unduly compromised by the placement and operation of the subject Digital Advertising Signs."*
- *"Therefore, it is considered the Road Safety Objectives SEPP 64 Transport Corridor Outdoor Advertising and Signage Guidelines - Section 3 Advertising and Road Safety have been met."*

8. Site 7. Barclay Road outbound, North Rocks

8.1 Review of Crash Data

A pre-installation and post-installation crash severity summary on approach to the Barclay Road outbound sign is provided in Table 8.1.

Table 8.1: Crash Severity Summary on Approach to Site 7 (2012-2021)

Year	Crash Severity					Total
	Fatal	Serious Injury	Moderate Injury	Minor/Other Injury	Non-casualty (towaway)	
Pre-installation						
2012	-	-	-	-	-	-
2013	-	-	-	-	-	-
2014	-	-	-	-	-	-
2015	-	-	1	-	-	1
2016	-	-	-	-	-	-
2017	-	-	-	1	1	2
Jan-Jun 2018	-	-	1	-	-	1
Total	**-**	**-**	**2**	**1**	**1**	**4**
Post-installation						
Jul-Dec 2018	-	-	-	-	-	
2019	-	-	-	-	-	-
2020	-	-	-	-	1	1
2021	-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**1**	**1**

Source: Transport for NSW

As shown in the above table, the site remains inherently safe **post-installation**. The sole crash post-installation was a 'other same direction' crash and resulted in a tow-away.

8.2 Road Safety Check Findings

Key findings from the 12-month road safety check were that :

- *"The subject signs are generally isolated from surrounding distractions (refer Figs 2 & 3 above) and sufficiently offset from road user activities (i.e. adjacent Bus Stops, emergency telephones) not to cause a significant increase in the "risks" to road user safety within the operational road network."*
- *"Taking into consideration the driving environment for both directions in the M2 Motorway containing a "changed road environment (Bus interchange), it is considered road user safety is not unduly compromised by the placement and operation of the subject Digital Advertising Signs."*
- *"Therefore, it is considered the Road Safety Objectives SEPP 64 Transport Corridor Outdoor Advertising and Signage Guidelines - Section 3 Advertising and Road Safety have been met."*

9. Site 8. Ixion Street outbound, Baulkham Hills

9.1 Review of Crash Data

A pre-installation and post-installation crash severity summary on approach to the Ixion Street outbound sign is provided in Table 9.1.

Table 9.1: Crash Severity Summary on Approach to Site 8 (2012-2021)

Year	Crash Severity					Total
	Fatal	Serious Injury	Moderate Injury	Minor/Other Injury	Non-casualty (towaway)	
Pre-installation						
2012	-	-	-	-	-	-
2013	-	-	-	-	-	-
2014	-	-	-	-	-	-
2015	-	-	-	-	-	-
2016	-	-	-	-	-	-
Jan-Oct 2017	-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**	**-**
Post-installation						
Nov-Dec 2017	-	-	-	-	-	-
2018	-	-	-	-	-	-
2019	-	-	-	-	-	-
2020	-	-	-	-	-	-
2021	-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**	**-**

Source: Transport for NSW

As shown in the above table, **zero crashes have been reported at the site** between January 2012 and December 2021.

9.2 Road Safety Check Findings

Key findings from the 12-month road safety check were that :

- *"The subject sign is generally isolated from surrounding distractions (refer Figs 2 above), sufficiently offset from road user activities and observed displays are considered do not hold drivers attention beyond "glance appreciation" (Item E2) so as not to cause a significant increase in the "risks" to road user safety within the operational road network."*
- *"Though not a hazard under definition, it is considered the subject sign does not present as a significant road user risk. The influence of the sign and assumed low usage of the shared shoulder/bicycle lane should not distract driver appreciation and awareness under such circumstances of potential vehicle conflict."*
- *"Taking into consideration the driving environment for westbound travel in the M2 Motorway containing few driver distractions, other than the sign and bicycles it is considered road user safety is not unduly compromised by the placement and operation of the subject Digital Advertising Sign."*
- *"Therefore, it is considered the Road Safety Objectives SEPP 64 Transport Corridor Outdoor Advertising and Signage Guidelines - Section 3 Advertising and Road Safety have been met."*

10. Site 9. Langdon Road inbound, Baulkham Hills

10.1 Review of Crash Data

A pre-installation and post-installation crash severity summary on approach to the Langdon Road inbound sign is provided in Table 10.1.

Table 10.1: Crash Severity Summary on Approach to Site 9 (2012-2021)

Year	Crash Severity					Total
	Fatal	Serious Injury	Moderate Injury	Minor/Other Injury	Non-casualty (towaway)	
Pre-installation						
2012	-	-	-	-	-	-
2013	-	-	-	-	-	-
2014	-	-	-	1	-	1
2015	-	-	-	-	-	-
2016	-	-	-	1	-	1
Jan-Oct 2017	-	-	-	-	-	-
Total	**-**	**-**	**-**	**2**	**-**	**2**
Post-installation						
Nov-Dec 2017	-	-	-	-	-	-
2018	-	-	-	-	-	-
2019	-	-	1	1	-	2
2020	-	-	-	-	-	-
2021	-	-	-	-	-	-
Total	**-**	**-**	**1**	**1**	**-**	**2**

Source: Transport for NSW

As shown in the above table:

- There has been no substantial change in crash data post-installation (remaining at less than 1 crash per year) and the site remains inherently safe
- All crashes were 'rear end'.

10.2 Road Safety Check Findings

Key findings from the 12-month road safety check were that :

- *"The subject sign is generally isolated from surrounding distractions (refer Figs 2 above), sufficiently offset from road user activities and observed displays are considered do not hold drivers attention beyond "glance appreciation" (Item E2) so as not to cause a significant increase in the "risks" to road user safety within the operational road network."*
- *"It is noted that west of the subject sign a merging lane is provide in the eastbound carriageway to accommodate traffic loading to the M2 Motorway from Abbott Road. This merge taper ends some 120 metres prior to the sign and driver decision to select a gap in the traffic stream and make the merge manoeuvre is well outside the influence of the subject sign."*
- *"Though not a hazard under definition, it is considered the subject sign does not present as a significant road user risk. The influence of the sign and assumed low usage of the shared shoulder/bicycle lane should not distract driver appreciation and awareness under such circumstances of potential vehicle conflict."*
- *"Taking into consideration the driving environment for eastbound travel in the M2 Motorway containing few driver distractions, other than the sign and low volume bicycles, it is considered road user safety is not unduly compromised by the placement and operation of the subject Digital Advertising Sign."*
- *"Therefore, it is considered the Road Safety Objectives SEPP 64 Transport Corridor Outdoor Advertising and Signage Guidelines - Section 3 Advertising and Road Safety have been met."*

11. Conclusions

Review of Crash Data

The number of pre-installation and post-installation crashes between 2012 and 2021 within 200m of nine existing digital signs at seven locations along the M2 Hills Motorway (M2) is summarised in Table 11.1.

Table 11.1: Pre-installation and Post-installation Crashes at Each Site (p.a.)

Site	Location	Pre-installation Crashes p.a.	Post-installation Crashes p.a.
1	Delhi Road inbound, North Ryde	1	1
2	Delhi Road outbound, North Ryde	<1	0
3	Lane Cove Road outbound, Macquarie Park	0	<1
4	Murray Farm Road outbound, Cheltenham	<1	0
5	Pennant Hills Road inbound, Carlingford	2	<1
6	Barclay Road inbound, North Rocks	<1	<1
7	Barclay Road outbound, North Rocks	<1	<1
8	Ixion Street outbound, Baulkham Hills	0	0
9	Langdon Road inbound, Baulkham Hills	<1	<1

Key findings when reviewing the data across all sites are:

- The M2 in locations that approach bridges is inherently safe with very low crash rates given the volume and speed of traffic on the M2
- Whilst there is a reduction in crashes on average post-installation of digital signs on the M2, there is absolutely no statistical causal relationship evident between the presence of digital signs and changing crash rates (up or down) where they have been installed.

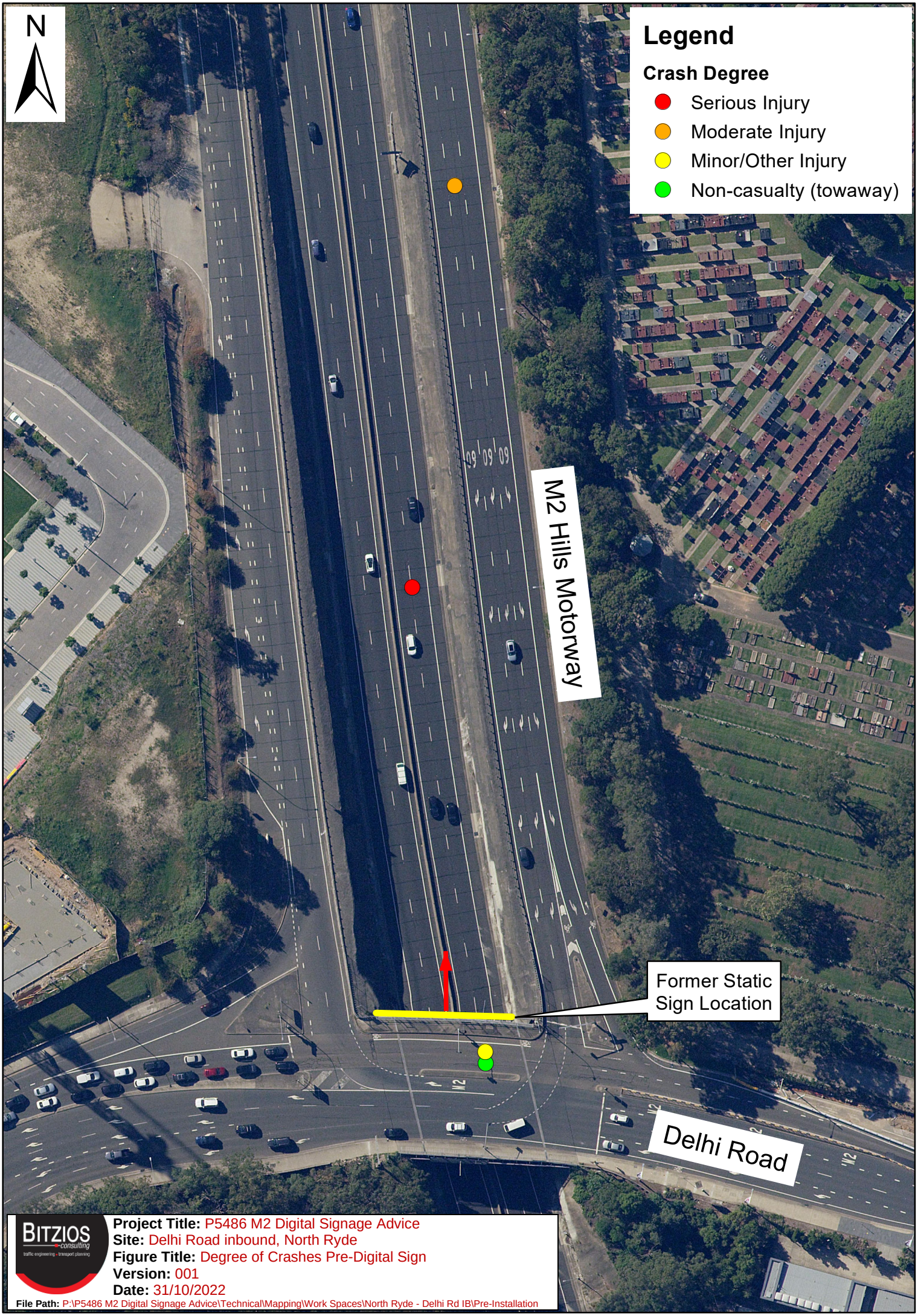
Whilst each site is unique and should be assessed on its particular circumstances, given the above conclusions, there is no evidentiary basis to claim that the installation of digital signs on bridges along the M2 will lead to a higher crash rate than currently exists unless the installation is in a substantially different context to the other nine signs assessed in this Technical Note.

Road Safety Check Findings

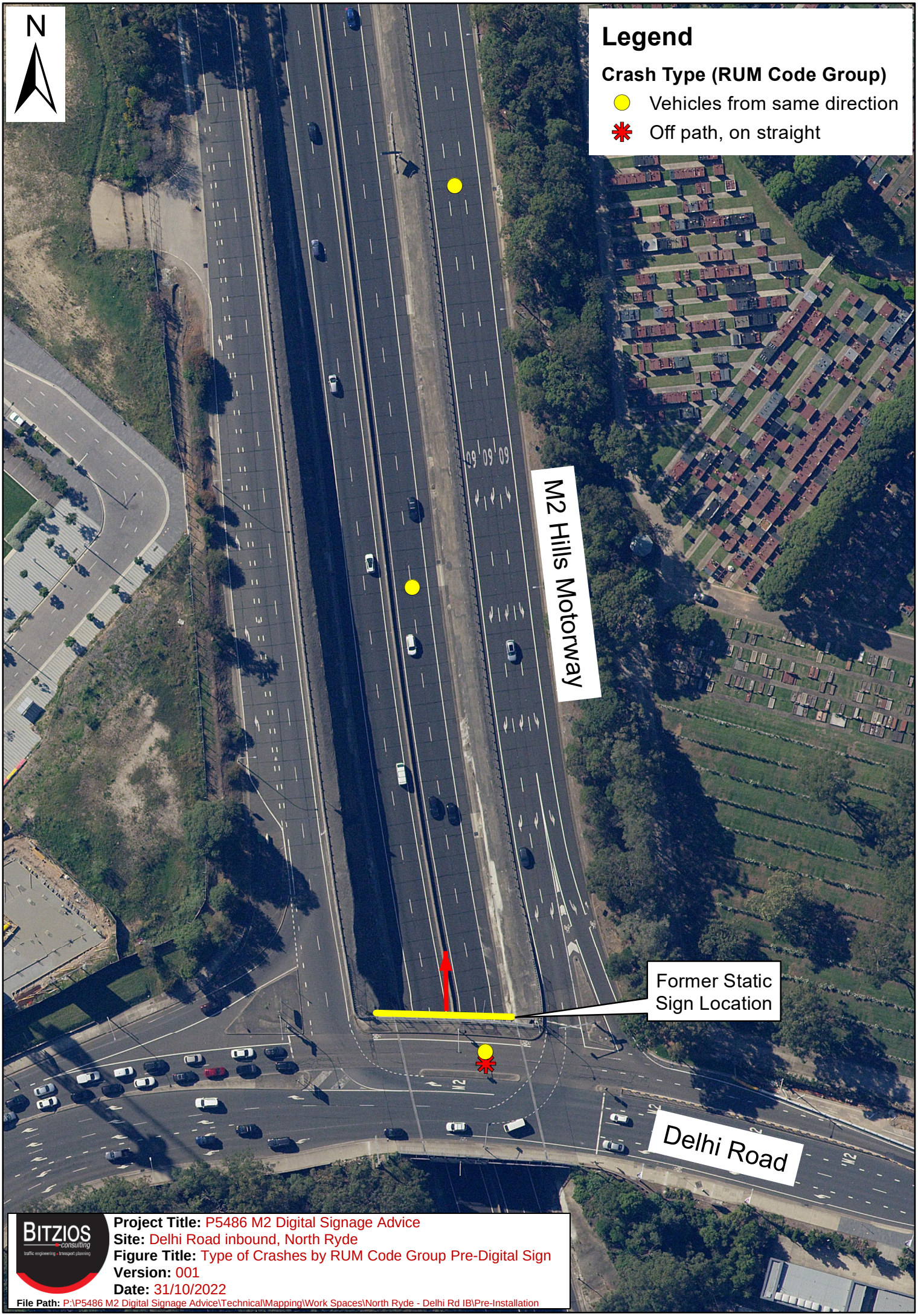
The 12-month post-installation road safety checks of the digital signs undertaken by Winning Traffic Solutions (WTS) concluded for all of the signs that:

- All signs are not located near any distractions and driving task situations that would significantly increase road user safety risks on the road network
- Road user safety is not compromised by the placement and operation of the signs
- The objectives of the road safety checks, SEPP 64 and the *Transport Corridor Outdoor Advertising and Signage Guidelines* Section 3 have been met.

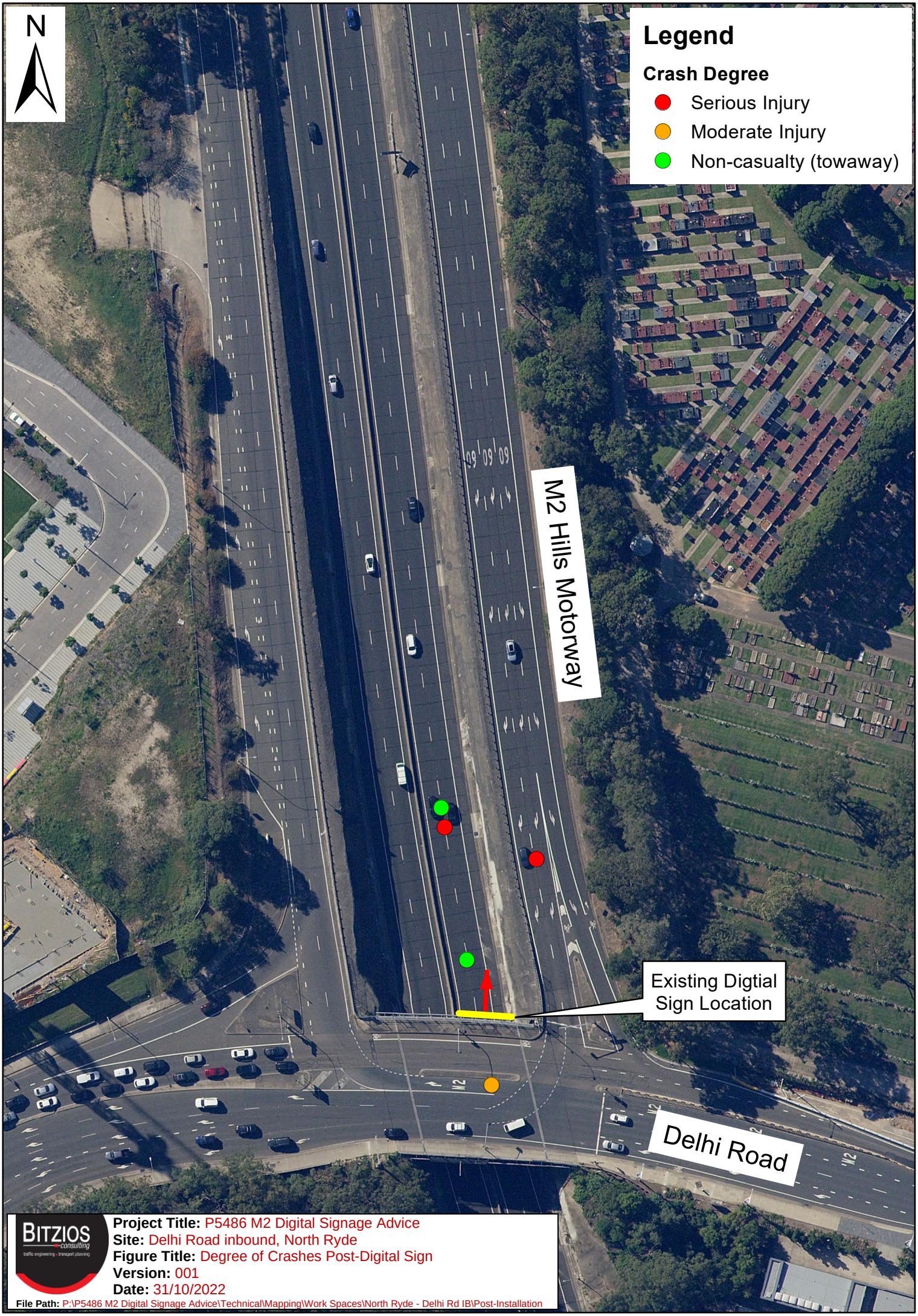
Attachment A: Crash Data



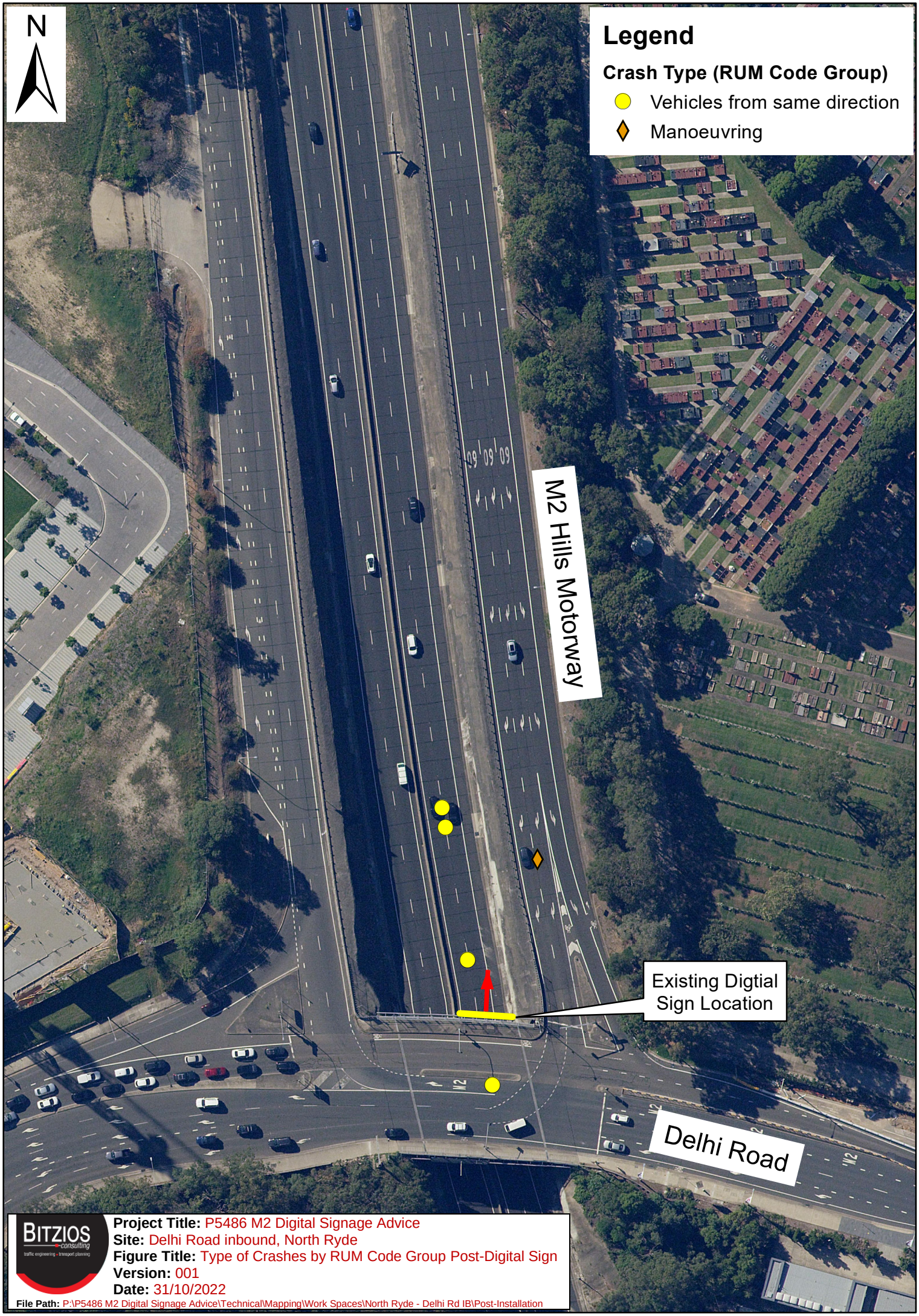
Project Title: P5486 M2 Digital Signage Advice
Site: Delhi Road inbound, North Ryde
Figure Title: Degree of Crashes Pre-Digital Sign
Version: 001
Date: 31/10/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\North Ryde - Delhi Rd IB\Pre-Installation



Project Title: P5486 M2 Digital Signage Advice
Site: Delhi Road inbound, North Ryde
Figure Title: Type of Crashes by RUM Code Group Pre-Digital Sign
Version: 001
Date: 31/10/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\North Ryde - Delhi Rd IB\Pre-Installation



Project Title: P5486 M2 Digital Signage Advice
Site: Delhi Road inbound, North Ryde
Figure Title: Degree of Crashes Post-Digital Sign
Version: 001
Date: 31/10/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\North Ryde - Delhi Rd IB\Post-Installation



Project Title: P5486 M2 Digital Signage Advice
Site: Delhi Road inbound, North Ryde
Figure Title: Type of Crashes by RUM Code Group Post-Digital Sign
Version: 001
Date: 31/10/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\North Ryde - Delhi Rd IB\Post-Installation

Project Title: P5486 M2 Digital Signage Advice
Site: Lane Cove Road outbound, Macquarie Park
Figure Title: Degree of Crashes Post-Digital Sign
Version: 001
Date: 31/10/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\Macquarie Park - Lane Cove Rd OB

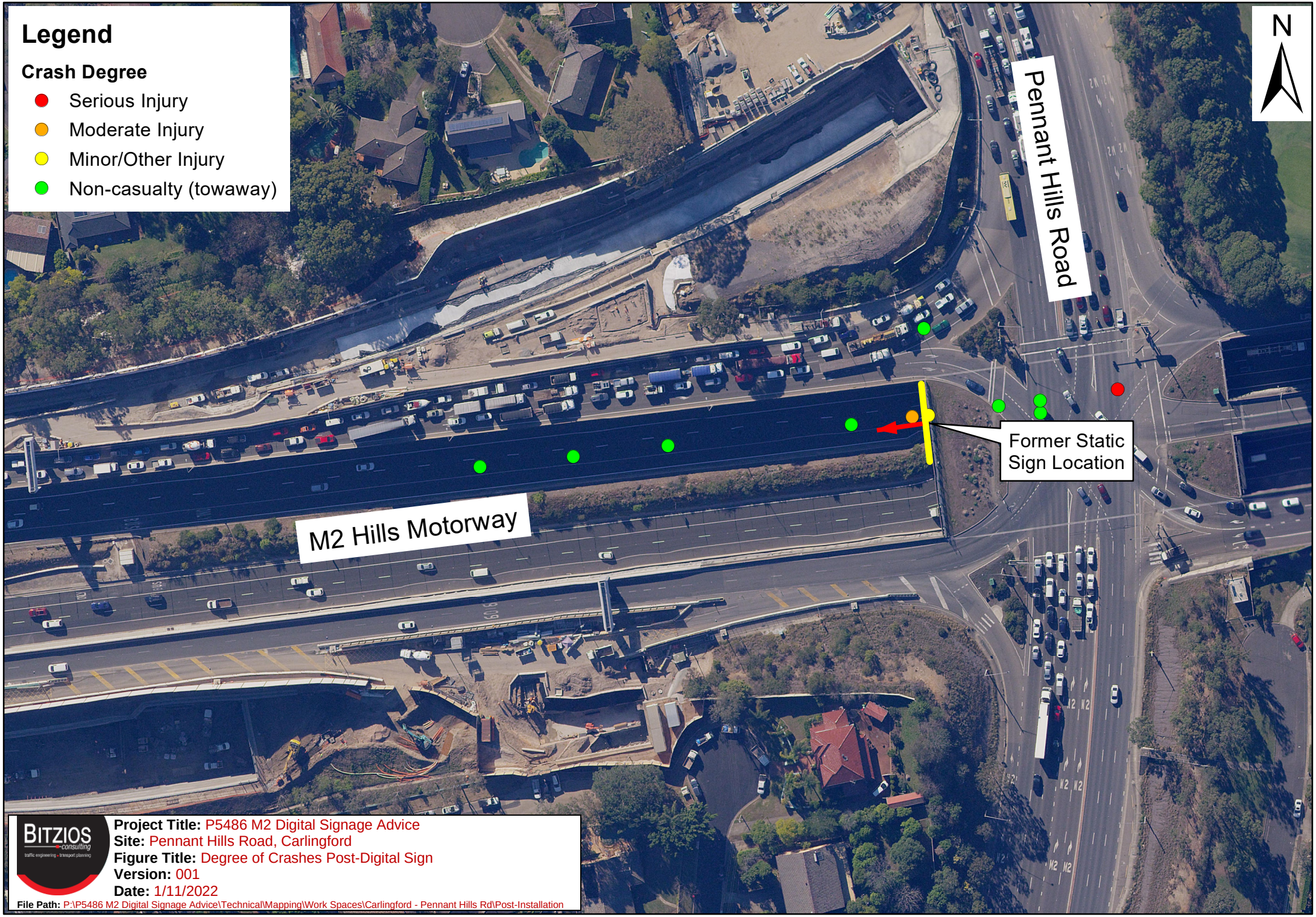
Project Title: P5486 M2 Digital Signage Advice
Site: Lane Cove Road outbound, Macquarie Park
Figure Title: Type of Crashes by RUM Code Group Post-Digital Sign
Version: 001
Date: 31/10/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\Macquarie Park - Lane Cove Rd OB

BITZIOS consulting
traffic engineering • transport planning

Project Title: P5486 M2 Digital Signage Advice
Site: Murray Farm Road outbound, Cheltenham
Figure Title: Degree of Crashes Pre-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\Cheltenham - Murray Farm Rd OB

BITZIOS consulting
traffic engineering • transport planning

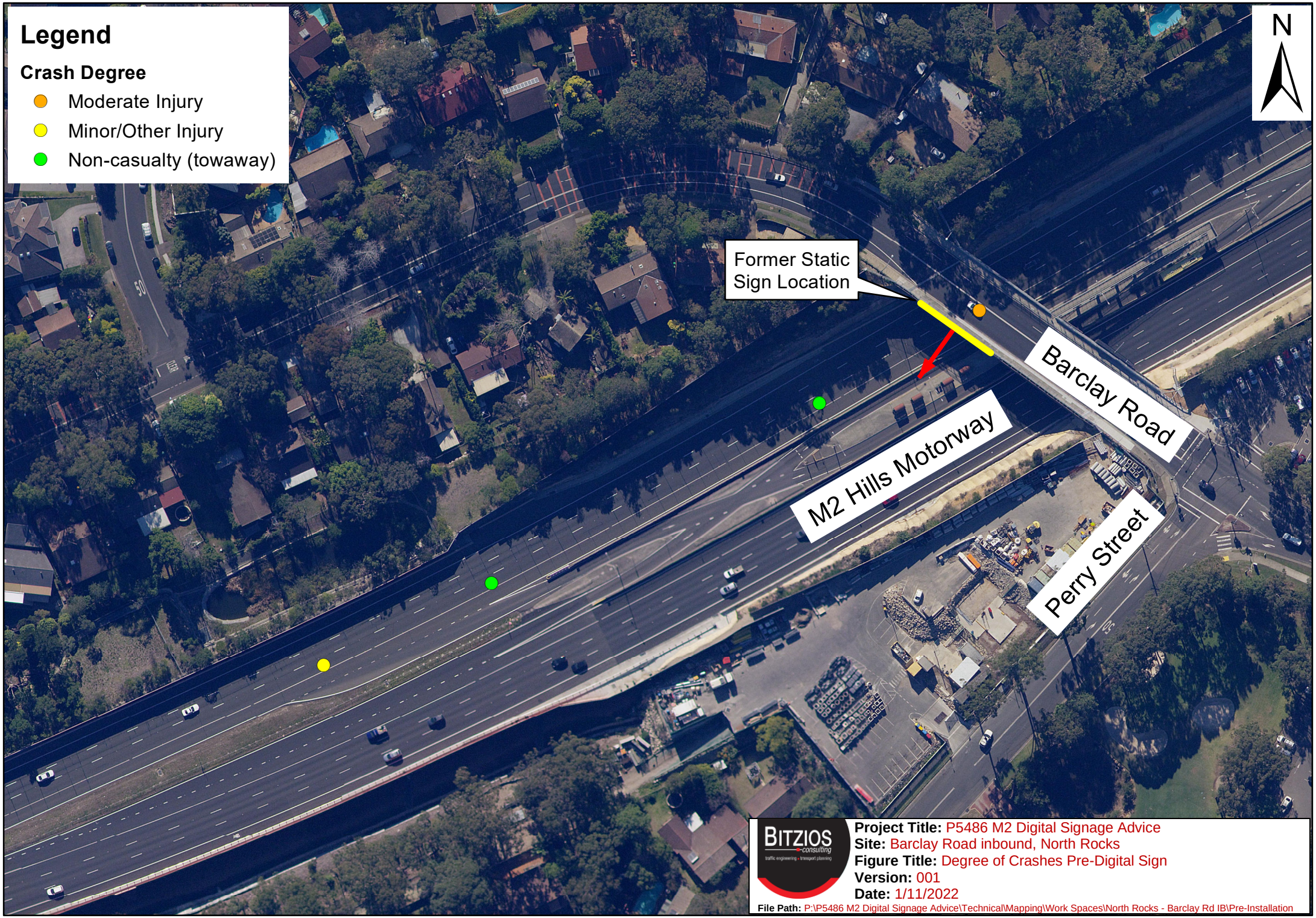
Project Title: P5486 M2 Digital Signage Advice
Site: Murray Farm Road outbound, Cheltenham
Figure Title: Type of Crashes by RUM Code Group Pre-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\Cheltenham - Murray Farm Rd OB

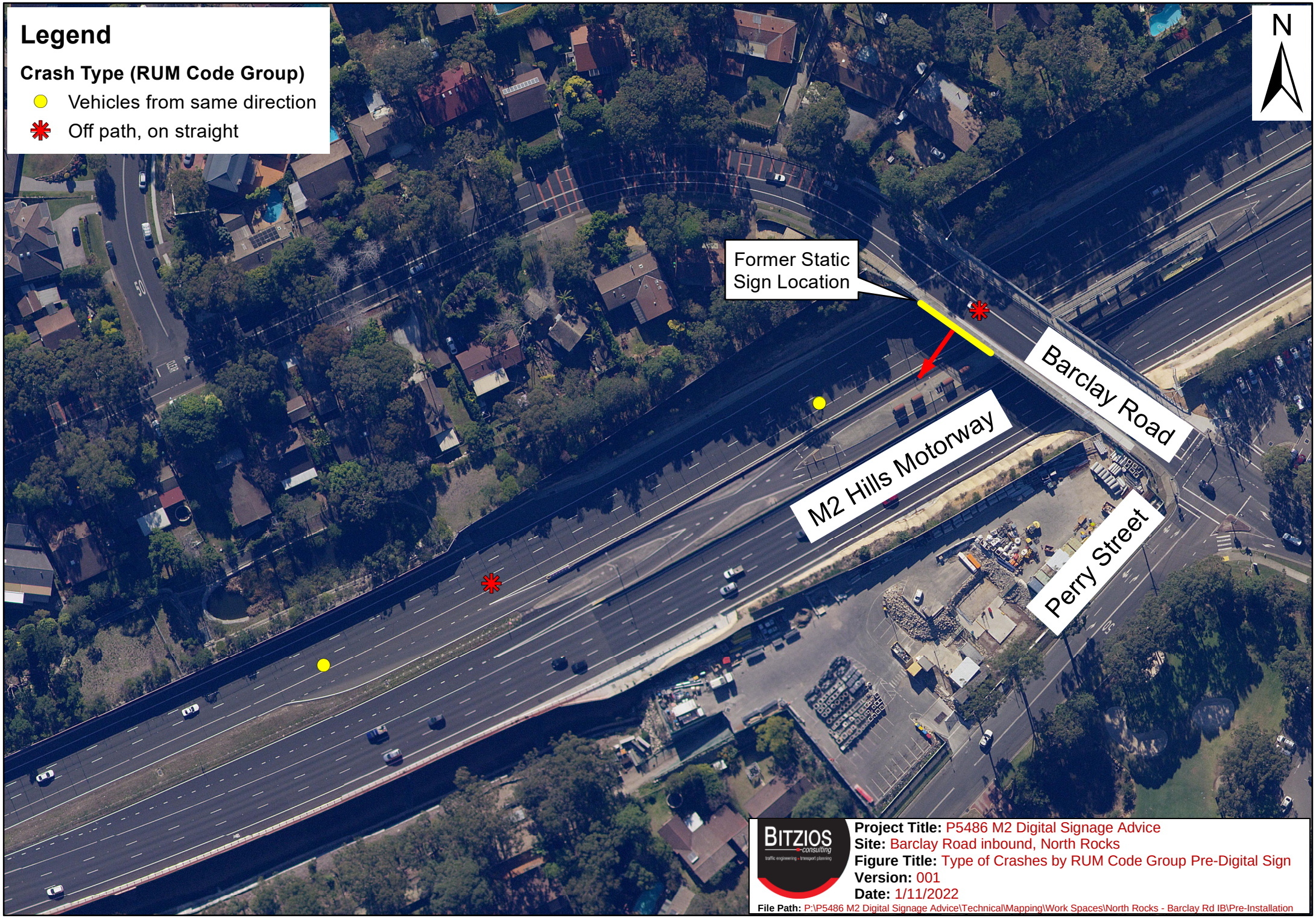

Legend
Crash Degree
Serious Injury
Moderate Injury
Minor/Other Injury
Non-casualty (towaway)
N
Pennant Hills Road
Former Static Sign Location
M2 Hills Motorway
BITZIOS consulting
traffic engineering + transport planning
Project Title: P5486 M2 Digital Signage Advice
Site: Pennant Hills Road, Carlingford
Figure Title: Degree of Crashes Post-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\Carlingford - Pennant Hills Rd\Post-Installation

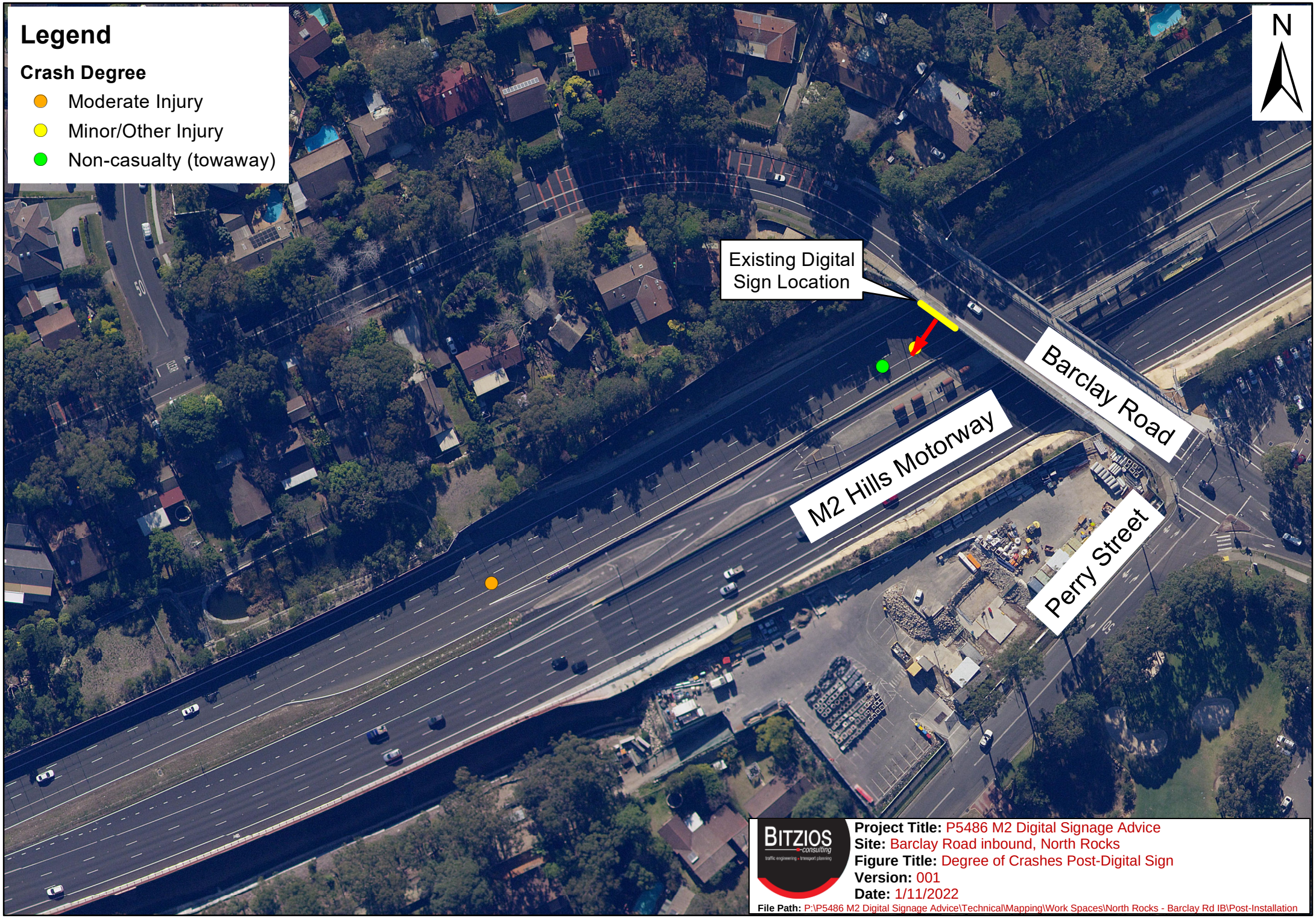

Legend
Crash Type (RUM Code Group)
Vehicles from same direction
Off path, on straight
Off path, on curve or turning
N
Pennant Hills Road
M2 Hills Motorway
Former Static Sign Location
BITZIOS consulting
traffic engineering - transport planning
Project Title: P5486 M2 Digital Signage Advice
Site: Pennant Hills Road, Carlingford
Figure Title: Type of Crashes by RUM Code Group Pre-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\Carlingford - Pennant Hills Rd\Pre-Installation

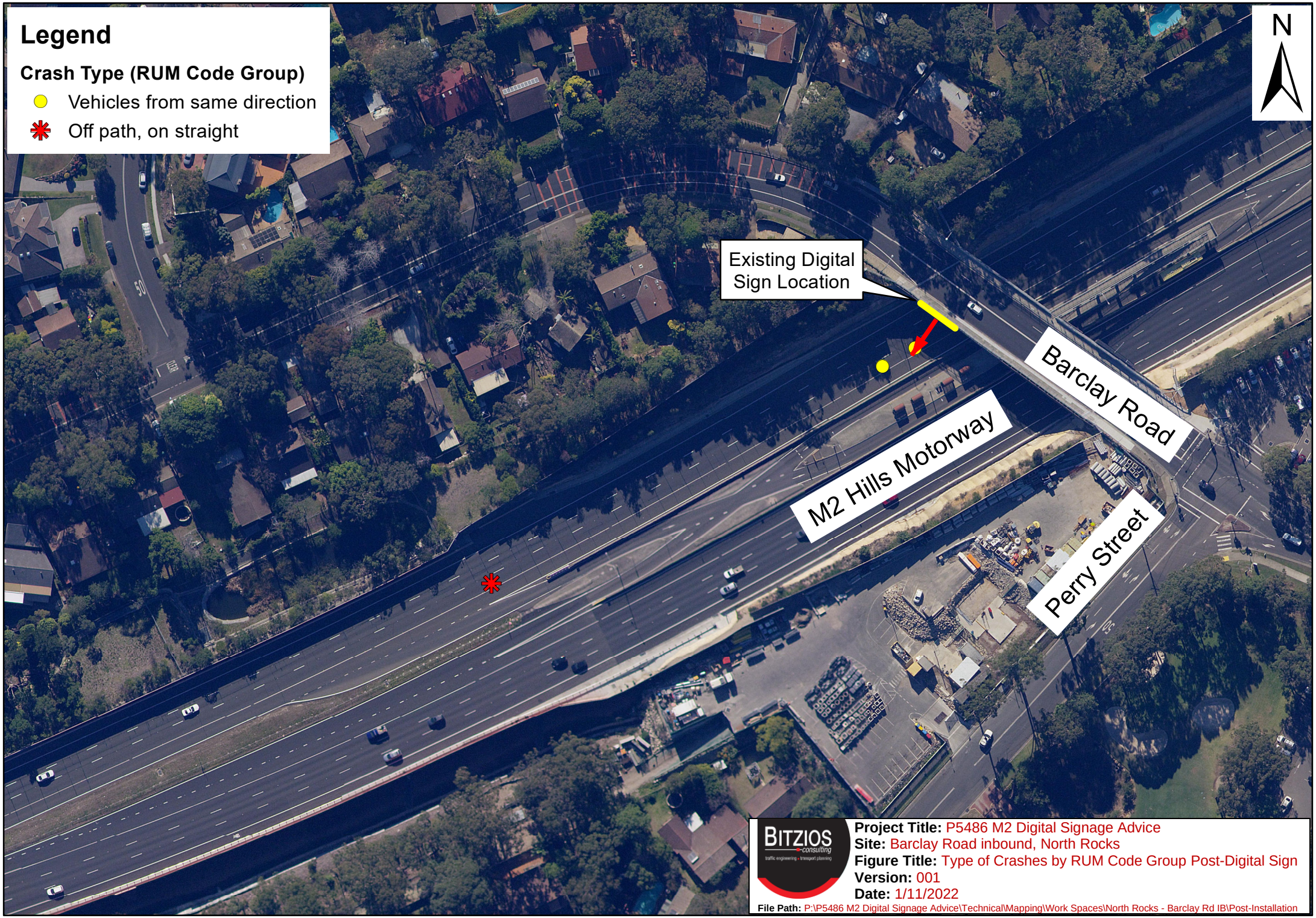
Project Title: P5486 M2 Digital Signage Advice
Site: Pennant Hills Road, Carlingford
Figure Title: Degree of Crashes Post-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\Carlingford - Pennant Hills Rd\Post-Installation

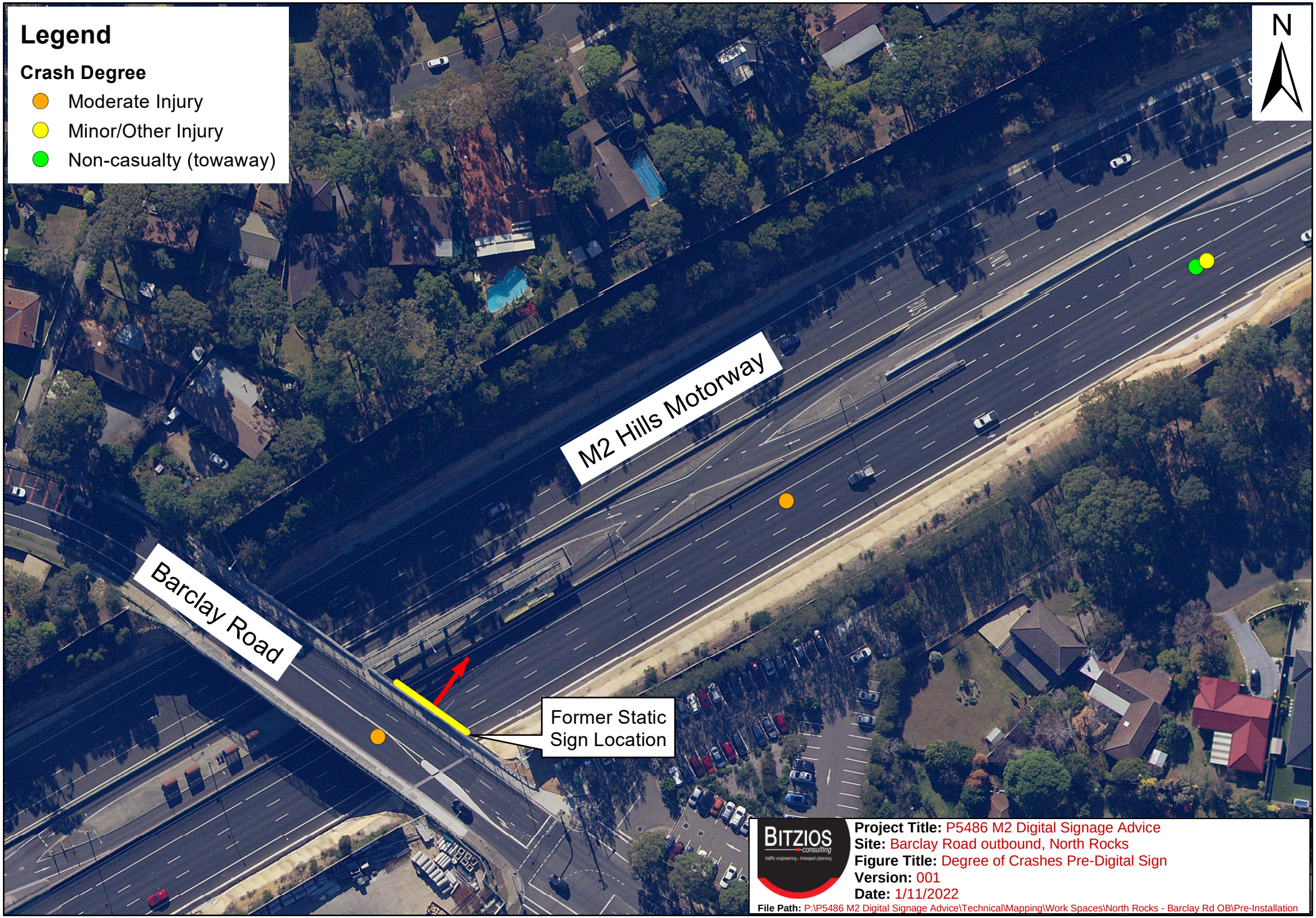
Project Title: P5486 M2 Digital Signage Advice
Site: Pennant Hills Road, Carlingford
Figure Title: Type of Crashes by RUM Code Group Post-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\Carlingford - Pennant Hills Rd\Post-Installation

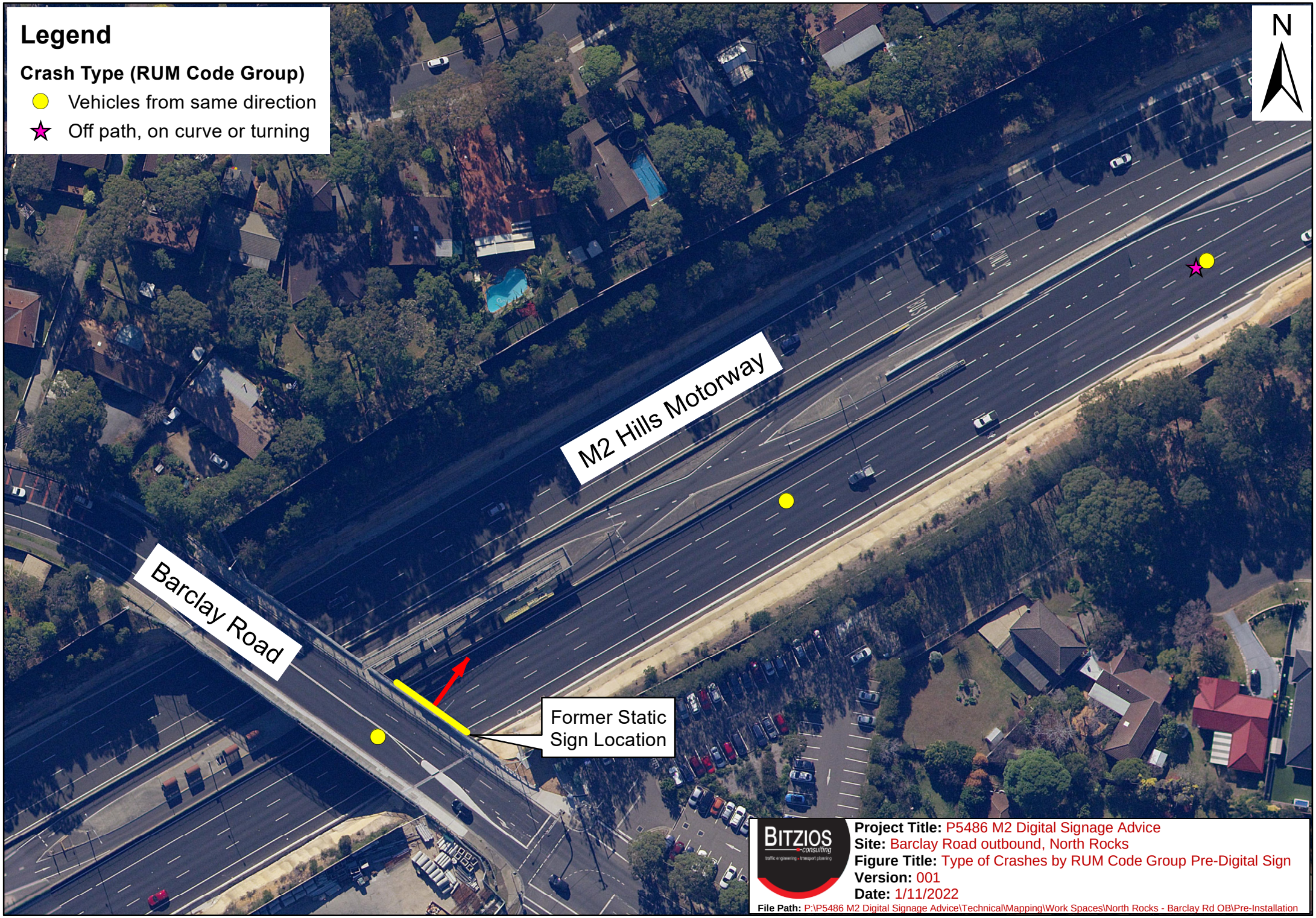

Legend
Crash Degree
Moderate Injury
Minor/Other Injury
Non-casualty (towaway)
N
Former Static Sign Location
Barclay Road
M2 Hills Motorway
Perry Street
50
Project Title: P5486 M2 Digital Signage Advice
Site: Barclay Road inbound, North Rocks
Figure Title: Degree of Crashes Pre-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\North Rocks - Barclay Rd IB\Pre-Installation


Legend
Crash Type (RUM Code Group)
Vehicles from same direction
Off path, on straight
N
Former Static Sign Location
Barclay Road
M2 Hills Motorway
Perry Street
BITZIOS consulting
traffic engineering - transport planning
Project Title: P5486 M2 Digital Signage Advice
Site: Barclay Road inbound, North Rocks
Figure Title: Type of Crashes by RUM Code Group Pre-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\North Rocks - Barclay Rd IB\Pre-Installation


Legend
Crash Degree
Moderate Injury
Minor/Other Injury
Non-casualty (towaway)
N
Existing Digital Sign Location
Barclay Road
M2 Hills Motorway
Perry Street
50
Project Title: P5486 M2 Digital Signage Advice
Site: Barclay Road inbound, North Rocks
Figure Title: Degree of Crashes Post-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\North Rocks - Barclay Rd IB\Post-Installation


Legend
Crash Type (RUM Code Group)
Vehicles from same direction
Off path, on straight
N
Existing Digital Sign Location
Barclay Road
M2 Hills Motorway
Perry Street
BITZIOS consulting
traffic engineering - transport planning
Project Title: P5486 M2 Digital Signage Advice
Site: Barclay Road inbound, North Rocks
Figure Title: Type of Crashes by RUM Code Group Post-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\North Rocks - Barclay Rd IB\Post-Installation


Legend
Crash Degree
Moderate Injury
Minor/Other Injury
Non-casualty (towaway)
N
M2 Hills Motorway
Barclay Road
Former Static Sign Location
BITZIOS consulting
traffic engineering - transport planning
Project Title: P5486 M2 Digital Signage Advice
Site: Barclay Road outbound, North Rocks
Figure Title: Degree of Crashes Pre-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\North Rocks - Barclay Rd OB\Pre-Installation


Legend
Crash Type (RUM Code Group)
Vehicles from same direction
Off path, on curve or turning
N
M2 Hills Motorway
Barclay Road
Former Static Sign Location
BITZIOS consulting
traffic engineering - transport planning
Project Title: P5486 M2 Digital Signage Advice
Site: Barclay Road outbound, North Rocks
Figure Title: Type of Crashes by RUM Code Group Pre-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\North Rocks - Barclay Rd OB\Pre-Installation


Legend
Crash Degree
Non-casualty (towaway)
N
M2 Hills Motorway
Barclay Road
Existing Digtial Sign Location
BITZIOS consulting
traffic engineering • transport planning
Project Title: P5486 M2 Digital Signage Advice
Site: Barclay Road outbound, North Rocks
Figure Title: Degree of Crashes Post-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\North Rocks - Barclay Rd OB\Post-Installation


Legend
Crash Type (RUM Code Group)
Vehicles from same direction
N
M2 Hills Motorway
Barclay Road
Existing Digtial Sign Location
BITZIOS consulting
traffic engineering • transport planning
Project Title: P5486 M2 Digital Signage Advice
Site: Barclay Road outbound, North Rocks
Figure Title: Type of Crashes by RUM Code Group Post-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\North Rocks - Barclay Rd OB\Post-Installation

BITZIOS consulting
traffic engineering • transport planning

Project Title: P5486 M2 Digital Signage Advice
Site: Langdon Road inbound, Baulkham Hills
Figure Title: Degree of Crashes Pre-Digital Sign
Version: 001
Date: 1/11/2022

File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\Baulkham Hills - Langdon Rd IB\Pre-Installation

Project Title: P5486 M2 Digital Signage Advice
Site: Langdon Road inbound, Baulkham Hills
Figure Title: Type of Crashes by RUM Code Group Pre-Digital Sign
Version: 001
Date: 1/11/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\Baulkham Hills - Langdon Rd IB\Pre-Installation

BITZIOS consulting
traffic engineering · transport planning

Project Title: P5486 M2 Digital Signage Advice
Site: Langdon Road inbound, Baulkham Hills
Figure Title: Degree of Crashes Post-Digital Sign
Version: 001
Date: 1/11/2022

File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\Baulkham Hills - Langdon Rd IB\Post-Installation

BITZIOS consulting
traffic engineering · transport planning

Project Title: P5486 M2 Digital Signage Advice
Site: Langdon Road inbound, Baulkham Hills
Figure Title: Type of Crashes by RUM Code Group Post-Digital Sign
Version: 001
Date: 1/11/2022

File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\Baulkham Hills - Langdon Rd IB\Post-Installation

M2 overpass	Crash ID	Degree of crash - detailed	RUM - code	RUM - description	Year of crash	Month of crash	Day of week of crash	Time of crash	Surface condition	Weather	Natural lighting	Street of crash	Street type	Distance	Direction	Identifying feature	Identifying feature type	Town	Type of location	Latitude	Longitude	Speeding involved in crash	Fatigue involved in crash	Key Traffic Unit direction of travel
Barclay Road eastbound	810488	Non-casualty (towaway)	30	Rear end	2012	September	Thursday	0920	Dry	Fine	Daylight	M2 HILLS	EXP	50	South	BARCLAY ROAD	OP	NORTH ROCKS	Dual freeway	-33.764669	151.013863	No or unknown	No or unknown	North
Barclay Road eastbound	1146509	Moderate Injury	71	Off rd left => obj	2017	August	Tuesday	1620	Dry	Fine	Daylight	M2 HILLS	EXP	0	Right on the spot	BARCLAY ROAD	OP	NORTH ROCKS	Dual freeway	-33.764446	151.014328	No or unknown	No or unknown	East
Barclay Road eastbound	1147385	Non-casualty (towaway)	73	Off rd rght => obj	2017	August	Monday	1355	Dry	Fine	Daylight	M2 HILLS	EXP	150	West	BARCLAY ROAD	OP	NORTH ROCKS	Dual freeway	-33.765103	151.012912	No or unknown	No or unknown	East
Barclay Road eastbound	1160711	Minor/Other Injury	35	Lane change left	2017	December	Wednesday	1910	Dry	Overcast	Daylight	M2 HILLS	EXP	200	West	BARCLAY ROAD	OP	NORTH ROCKS	Dual freeway	-33.765300	151.012425	No or unknown	No or unknown	East
Barclay Road eastbound	1176863	Moderate Injury	73	Off rd right => obj	2018	July	Friday	2245	Dry	Fine	Darkness	M2 HILLS	EXP	150	West	BARCLAY ROAD	OP	NORTH ROCKS	Dual freeway	-33.765103	151.012912	No or unknown	No or unknown	West
Barclay Road eastbound	1193898	Non-casualty (towaway)	30	Rear end	2019	February	Friday	1815	Dry	Fine	Daylight	M2 HILLS	EXP	1500	East	WINDSOR ROAD	OP	NORTH ROCKS	Dual freeway	-33.764580	151.014047	No or unknown	No or unknown	East
Barclay Road eastbound	1210486	Minor/Other Injury	35	Lane change left	2019	July	Wednesday	0910	Dry	Fine	Daylight	M2 HILLS	EXP	20	West	BARCLAY ROAD	OP	NORTH ROCKS	Dual freeway	-33.764536	151.014141	No or unknown	No or unknown	East
Barclay Road westbound	1084581	Moderate Injury	33	Lane sideswipe	2015	July	Monday	0630	Wet	Raining	Daylight	M2 HILLS	EXP	100	East	BARCLAY ROAD	OP	NORTH ROCKS	Dual freeway	-33.764143	151.015509	No or unknown	No or unknown	West
Barclay Road westbound	1157648	Non-casualty (towaway)	81	Off left/rt bnd=>obj	2017	December	Sunday	2210	Dry	Fine	Darkness	M2 HILLS	EXP	200	East	BARCLAY ROAD	OP	NORTH ROCKS	Dual freeway	-33.763697	151.016448	Yes	Yes	West
Barclay Road westbound	1165698	Moderate Injury	33	Lane sideswipe	2018	February	Tuesday	1800	Dry	Fine	Daylight	M2 HILLS	EXP	0	Right on the spot	BARCLAYS ROAD	OP	NORTH ROCKS	Dual freeway	-33.764592	151.014572	No or unknown	No or unknown	West
Barclay Road westbound	1168313	Minor/Other Injury	30	Rear end	2017	October	Thursday	1930	Dry	Fine	Darkness	M2 HILLS	EXP	1200	East	WINDSOR ROAD	TO	NORTH ROCKS	Dual freeway	-33.763685	151.016473	No or unknown	No or unknown	West
Barclay Road westbound	1242467	Non-casualty (towaway)	39	Other same direction	2020	September	Friday	1610	Dry	Fine	Daylight	M2 HILLS	EXP	50	East	BARCLAY ROAD	OP	NORTH ROCKS	Dual freeway	-33.764373	151.015087	No or unknown	No or unknown	West
Delhi Road northbound	786444	Non-casualty (towaway)	30	Rear end	2012	February	Tuesday	1625	Dry	Overcast	Daylight	M2 HILLS	EXP	50	South	DEHLI ROAD	OP	NORTH RYDE	Dual freeway	-33.794464	151.136138	No or unknown	No or unknown	North
Delhi Road northbound	1017260	Non-casualty (towaway)	71	Off rd left => obj	2014	March	Sunday	1230	Wet	Raining	Daylight	M2 HILLS	EXP	0	Right on the spot	DELHI ROAD	OP	NORTH RYDE	Dual freeway	-33.794024	151.136002	No or unknown	No or unknown	North
Delhi Road northbound	1155986	Minor/Other Injury	30	Rear end	2017	September	Friday	1500	Dry	Fine	Daylight	M2 HILLS	EXP	100	North	EPPING ROAD	OP	NORTH RYDE	Dual freeway	-33.795401	151.136532	No or unknown	No or unknown	North
Delhi Road southbound	1000609	Non-casualty (towaway)	71	Off rd left => obj	2013	December	Thursday	0800	Dry	Fine	Daylight	M2 HILLS	EXP	0	Right on the spot	DELHI ROAD	OP	MACQUARIE PARK	Dual freeway	-33.793898	151.136065	No or unknown	No or unknown	South
Delhi Road southbound	1054881	Minor/Other Injury	30	Rear end	2014	October	Tuesday	0710	Dry	Overcast	Daylight	M2 HILLS	EXP	0	Right on the spot	DELHI ROAD	OP	MACQUARIE PARK	Dual freeway	-33.793890	151.136065	No or unknown	No or unknown	East
Delhi Road southbound	1104583	Serious Injury	30	Rear end	2016	March	Friday	0735	Dry	Fine	Daylight	M2 HILLS	EXP	100	North	DELHI ROAD	OP	MACQUARIE PARK	Dual freeway	-33.792986	151.135894	No or unknown	No or unknown	South
Delhi Road southbound	1115345	Moderate Injury	30	Rear end	2016	September	Thursday	1300	Dry	Fine	Daylight	M2 HILLS	EXP	200	North	DELHI	RD	MACQUARIE PARK	Other	-33.792203	151.135994	No or unknown	No or unknown	South
Delhi Road southbound	1184091	Moderate Injury	30	Rear end	2018	September	Tuesday	0707	Dry	Fine	Daylight	M2 HILLS	EXP	0	Right on the spot	DELHI ROAD	OP	NORTH RYDE	Dual freeway	-33.793955	151.136080	No or unknown	No or unknown	South
Delhi Road southbound	1193205	Serious Injury	30	Rear end	2019	January	Friday	0830	Dry	Fine	Daylight	M2 HILLS	EXP	50	North	DELHI ROAD	OP	MACQUARIE PARK	Dual freeway	-33.793453	151.135970	No or unknown	No or unknown	South
Delhi Road southbound	1203608	Serious Injury	40	U turn	2019	April	Saturday	2139	Dry	Fine	Darkness	M2 HILLS	EXP	50	North	DELHI	RD	MACQUARIE PARK	Other	-33.793515	151.136185	No or unknown	No or unknown	North
Delhi Road southbound	1236707	Non-casualty (towaway)	30	Rear end	2020	July	Saturday	1700	Dry	Overcast	Dusk	M2 HILLS	EXP	3000	East	CHRISTIE ROAD	OP	MACQUARIE PARK	Dual freeway	-33.793415	151.135962	No or unknown	No or unknown	East
Delhi Road southbound	1274709	Non-casualty (towaway)	30	Rear end	2021	October	Thursday	0655	Dry	Fine	Daylight	M2 HILLS	EXP	20	North	DELHI ROAD	OP	MACQUARIE PARK	Dual freeway	-33.793712	151.136022	No or unknown	No or unknown	South
Lane Cove Road westbound	1148232	Serious Injury	85	Off rt/lft bnd=>obj	2017	August	Sunday	1950	Wet	Raining	Darkness	M2 HILLS	EXP	200	South	LANE COVE ROAD	TO	MACQUARIE PARK	Other	-33.782255	151.133216	Yes	No or unknown	North
Lane Cove Road westbound	1177733	Non-casualty (towaway)	85	Off rt/lft bnd=>obj	2018	August	Monday	1850	Wet	Raining	Darkness	M2 HILLS	EXP	220	East	LANE COVE	RD	MACQUARIE PARK	Other	-33.782060	151.133184	Yes	No or unknown	East
Langdon Road eastbound	1035784	Minor/Other Injury	30	Rear end	2014	August	Thursday	0700	Dry	Fine	Daylight	M2 HILLS	EXP	200	East	ABBOTT ROAD	TO	BAULKHAM HILLS	Dual freeway	-33.770399	150.967538	No or unknown	No or unknown	East
Langdon Road eastbound	1106157	Minor/Other Injury	30	Rear end	2016	June	Tuesday	0720	Dry	Fine	Daylight	M2 HILLS	EXP	10	West	LANGDON ROAD	OP	BAULKHAM HILLS	Dual freeway	-33.770936	150.968262	No or unknown	No or unknown	East
Langdon Road eastbound	1204683	Moderate Injury	30	Rear end	2019	April	Monday	1350	Dry	Fine	Daylight	M2 HILLS	EXP	100	West	LANGDON ROAD	OP	BAULKHAM HILLS	Dual freeway	-33.770365	150.967497	No or unknown	No or unknown	East
Langdon Road eastbound	1211985	Minor/Other Injury	30	Rear end	2019	August	Thursday	0815	Dry	Fine	Daylight	M2 HILLS	EXP	0	Right on the spot	LANGDON ROAD	OP	BAULKHAM HILLS	Dual freeway	-33.770964	150.968305	No or unknown	No or unknown	East
Murray Farm Road westbound	808031	Non-casualty (towaway)	71	Off rd left => obj	2012	August	Friday	1730	Dry	Fine	Dusk	M2 HILLS	EXP	0	Right on the spot	MURRAY FARM RO	OP	BEECROFT	Dual freeway	-33.758983	151.065997	No or unknown	No or unknown	North
Murray Farm Road westbound	1137101	Serious Injury	34	Lane change right	2017	May	Friday	1620	Dry	Overcast	Daylight	M2 HILLS	EXP	100	East	MURRAY FARM ROAD	OP	CHELTENHAM	Dual freeway	-33.759547	151.066776	No or unknown	No or unknown	West
Pennant Hills Road eastbound	795168	Non-casualty (towaway)	30	Rear end	2012	May	Sunday	2130	Dry	Fine	Darkness	M2 HILLS	EXP	120	West	CUMBERLAND HIG	OP	WEST PENNANT H	Dual freeway	-33.758767	151.047578	No or unknown	No or unknown	East
Pennant Hills Road eastbound	813039	Minor/Other Injury	30	Rear end	2012	September	Tuesday	0715	Dry	Fine	Daylight	M2 HILLS	EXP	30	West	CUMBERLAND	HWY	CARLINGFORD	Dual freeway	-33.758668	151.048596	No or unknown	No or unknown	East
Pennant Hills Road eastbound	813122	Non-casualty (towaway)	30	Rear end	2012	August	Thursday	0930	Dry	Fine	Daylight	M2 HILLS	EXP	150	West	CUMBERLAND HIG	OP	WEST PENNANT H	Dual freeway	-33.758792	151.047310	No or unknown	No or unknown	East
Pennant Hills Road eastbound	837753	Non-casualty (towaway)	30	Rear end	2013	May	Friday	0725	Dry	Fine	Daylight	M2 HILLS	EXP	0	Right on the spot	CUMBERLAND HIG	OP	WEST PENNANT H	Dual freeway	-33.758633	151.048921	No or unknown	No or unknown	East
Pennant Hills Road eastbound	843910	Non-casualty (towaway)	30	Rear end	2013	July	Wednesday	0800	Dry	Fine	Daylight	M2 HILLS	EXP	50	West	CUMBERLAND HIG	OP	WEST PENNANT H	Dual freeway	-33.758690	151.048374	No or unknown	No or unknown	East
Pennant Hills Road eastbound	854281	Non-casualty (towaway)	30	Rear end	2013	October	Friday	0610	Dry	Overcast	Daylight	M2 HILLS	EXP	100	West	CUMBERLAND HIGHWAY	OP	WEST PENNANT HILLS	Dual freeway	-33.758741	151.047849	No or unknown	No or unknown	East
Pennant Hills Road eastbound	856102	Moderate Injury	85	Off rt/lft bnd=>obj	2013	October	Tuesday	0945	Dry	Fine	Daylight	M2 HILLS	EXP	30	West	CUMBERLAND	HWY	CARLINGFORD	Dual freeway	-33.758672	151.048549	No or unknown	No or unknown	West
Pennant Hills Road eastbound	1065354	Non-casualty (towaway)	79	Other straight	2015	March	Friday	2200	Dry	Fine	Darkness	M2 HILLS	EXP	0	Right on the spot	CUMBERLAND HIGHWAY	OP	CARLINGFORD	Dual freeway	-33.758646	151.048797	No or unknown	No or unknown	East
Pennant Hills Road eastbound	1073215	Serious Injury	30	Rear end	2015	June	Monday	0620	Dry	Fine	Daylight	M2 HILLS	EXP	0	Right on the spot	CUMBERLAND HIGHWAY	OP	CARLINGFORD	Dual freeway	-33.758607	151.049138	No or unknown	No or unknown	East
Pennant Hills Road eastbound	1086729	Non-casualty (towaway)	30	Rear end	2015	November	Monday	1730	Dry	Fine	Dusk	M2 HILLS	EXP	0	Right on the spot	CUMBERLAND HIGHWAY	OP	CARLINGFORD	Dual freeway	-33.758633	151.048917	No or unknown	No or unknown	East
Pennant Hills Road eastbound	1139188	Non-casualty (towaway)	33	Lane sideswipe	2017	April	Saturday	0545	Dry	Overcast	Dawn	M2 HILLS	EXP	50	West	CUMBERLAND HIGHWAY	TO	WEST PENNANT HILLS	Other	-33.758461	151.048582	No or unknown	No or unknown	East
Pennant Hills Road eastbound	1189237	Non-casualty (towaway)	30	Rear end	2018	December	Thursday	1840	Wet	Raining	Daylight	M2 HILLS	EXP	0	Right on the spot	CUMBERLAND HIGHWAY	OP	CARLINGFORD	Dual freeway	-33.758633	151.048921	No or unknown	No or unknown	East

Appendix C: Photo Montages

1. M2 Hills Motorway eastbound approach – Lane 1 (Day)

2. M2 Hills Motorway eastbound approach – Lane 2 (Day)

Appendix D: Crash Data

BITZIOS consulting
traffic engineering + transport planning

Project Title: P5486 M2 Digital Signage Advice
Site: Lane Cove Road, Macquarie Park
Figure Title: Degree of Crashes – 2016 to 2020
Version: 001
Date: 8/08/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\Macquarie Park - Lane Cove Rd

BITZIOS consulting
traffic engineering • transport planning

Project Title: P5486 M2 Digital Signage Advice
Site: Lane Cove Road, Macquarie Park
Figure Title: Type of Crashes by RUM Code Group – 2016 to 2020
Version: 001
Date: 8/08/2022
File Path: P:\P5486 M2 Digital Signage Advice\Technical\Mapping\Work Spaces\Macquarie Park - Lane Cove Rd

Crash ID	Degree of crash - detailed	RUM - code	RUM - description	Year of crash	Month of crash	Day of week of crash	Time of crash	Surface condition	Weather	Natural lighting	Street of crash	Street type	Distance	Direction	Identifying feature	Identifying feature type	Town	Type of location	Latitude	Longitude	Speeding involved in crash	Fatigue involved in crash	Key Traffic Unit direction of travel
1094759	Non-casualty (towaway)	39	Other same direction	2016	February	Thursday	1800	Dry	Fine	Daylight	M2 HILLS	EXP	0	Right on the spot	LANE COVE ROAD	OP	MACQUARIE PARK	Dual freeway	-33.781118	151.132514	No or unknown	No or unknown	East

Appendix D

Illumination Report Prepared by Electrolight

DIGITAL PLACE SOLUTIONS

LIGHTING IMPACT ASSESSMENT -
OUTDOOR SIGNAGE AT LANE COVE ROAD BRIDGE, MACQUARIE PARK, NSW
(INBOUND)

24th October 2022
Ref: 3214.2

Lighting Impact Assessment

Outdoor Signage at Lane Cove Road Bridge, Macquarie Park, NSW (Inbound)

DATE	REV	COMMENT	PREPARED BY	CHECKED BY
24/10/22	REV B	For Information	LC	RS

Electrolight Australia Pty Ltd
ABN: 44 600 067 392

info@electrolight.com
www.electrolight.com

4/414 Bourke St
Surry Hills, NSW 2010
T + 612 9267 4777

CONTENTS

1. INTRODUCTION

Electrolight have been appointed by Digital Place Solutions to undertake a Lighting Impact Assessment on the proposed digital signage located on the Lane Cove Road Overpass above M2 Motorway, Macquarie Park, NSW (Inbound). The objective of the assessment is to report on compliance with the State Environmental Planning Policy (Industry and Employment) 2021, NSW Transport Corridor Outdoor Advertising and Signage Guidelines, and AS4282-2019 Control of the Obtrusive Effects of Outdoor Lighting.

2. DEFINITIONS

2.1 Illuminance

The physical measure of illumination is illuminance. It is the luminous flux arriving at a surface divided by the area of the illuminated surface. Unit: lux (lx); 1 lx = 1 lm/m2.

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

(b) Vertical illuminance (Ev) 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 (Eve).

2.2 Luminance

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/m2) – also referred to as “nits”.

2.3 Luminous Intensity

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 is a 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.

2.7 Upward Light Ratio (ULR)

The ratio between the luminuous flux emitted above the horizontal plane to the total flux emitted by a light source. The ULR is used as a measure to limit direct spill light to the sky.

3. SITE DESCRIPTION AND SCOPE

The proposed digital signage is located on the Lane Cove Road Overpass above M2 Motorway in Macquarie Park, NSW. The signage is oriented towards the inbound direction of traffic on the M2 Motorway. The total active display (illuminated) of the digital signage is 39.94 m2. The digital signage is to be in 24 hour operation. Refer to Appendix A for proposed signage location plan and elevations.

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 signage is noted as Daktronics model type DVX-2200N-10MN-8000-WJ with performance parameters as outlined in Appendix B. The signage includes baffles which mitigate upward waste light, resulting in an Upward Light Ratio (ULR) of less than 50%. Alternative digital sign manufacturers 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 digital signage against the following Criteria, Design Guidelines and Standards.

- State Environmental Planning Policy (Industry and Employment) 2021 (Refer Appendix C)
- Transport Corridor Outdoor Advertising & Signage Guidelines 2017
- AS 4282-2019 Control of the Obtrusive Effects of Outdoor Lighting

5. LUMINANCE ASSESSMENT

The maximum permissible night time luminance of the signage is determined by the existing lighting environment of its surroundings. AS4282 outlines maximum average luminances for different Environmental Zones as shown in Table 1 below:

TABLE 1 - MAXIMUM NIGHT TIME AVERAGE LUMINANCE FOR SIGNAGE		
Environmental Zone	Description	Max Average Luminance (cd/m2)
A4	High district brightness e.g. Town and city centres, commercial areas, and residential areas abutting commercial areas	350
A3	Medium district brightness e.g. suburban areas in towns and cities	250
A2	Low district brightness e.g. sparsely inhabited rural and semi-rural areas	150
A1	Dark e.g. relatively uninhabited rural areas. No Road Lighting	0.1
A0	Intrinsically Dark e.g. Major Optical Observatories. No Road Lighting	0.1

Note: Where the signage is viewed against a predominantly dark background (e.g. night sky) then the maximum applicable environmental zone is A2

Based on an assessment of the surrounding environment, the proposed signage is located within Environmental Zone A4 under AS4282, therefore the maximum night time luminance is 350 cd/m2.

AS4282 does not include limits for daytime operation of illuminated signage. However, the Transport Corridor Outdoor Advertising & Signage Guidelines outlines maximum permissible luminance limits for various lighting conditions, including daytime. Under the Guidelines, the proposed signage is classified as being within Zone 3, which is described as an area with generally medium off-street ambient lighting. The maximum night time luminance of a digital signage within Zone 3 is 350 cd/m2.

Table 2 outlines the maximum luminance levels to comply with AS4282 and the Transport Corridor Outdoor Advertising & Signage Guidelines for the various lighting conditions listed below:

TABLE 2 - LUMINANCE LEVELS FOR DIGITAL ADVERTISEMENTS		
Lighting Condition	Max Permissible Luminance (cd/m2) #	Compliant
Full Sun on face of Signage	No Limit	✓
Day Time Luminance (typical sunny day)	6000	✓
Morning and Evening Twilight and Overcast Weather	700	✓
Night Time	350	✓

The signage is to be dimmed on site to ensure the maximum luminance nominated above is not exceeded.

The proposed digital signage has a maximum brightness (luminance) of 8000 cd/m2. The screen shall be commissioned on site to yield a maximum screen luminance of 8000 cd/m2 when full sun strikes the face of the sign (maximum brightness), 6000 cd/m2 during normal daytime operation, 700 cd/m2 during twilight and inclement weather and 350 cd/m2 during night time.

6. AS4282 ASSESSMENT

The proposed signage has been assessed against AS 4282-2019 Control of the Obtrusive Effects of Outdoor Lighting as outlined in Section 4.

AS4282 provides limits for different obtrusive factors associated with dark hours (night time) operation of outdoor lighting systems. Two sets of limiting values for spill light are given based on whether the lighting is operating before a curfew (known as "pre-curfew" operation) or operating after a curfew (known as post-curfew or curfewed operation). Pre-curfew spill lighting limits are higher than post-curfew values, on the understanding that spill light is more obtrusive late at night when residents are trying to sleep. Under AS4282, the post-curfew period is taken to be between 11pm and 6am daily. As the signage operates all night, the signage will be assessed against the more stringent post-curfew limits.

Illuminance Assessment

The AS4282 assessment includes a review of nearby residential dwellings and calculation of the amount of illuminance (measured in Lux) that the properties are likely to receive from the signage during night time operation.

The acceptable level of illuminance will in part be determined by the night time lighting environment around the dwellings. AS4282 categorises the night time environment into different zones with maximum lighting limits as shown in Table 3 below:

TABLE 3 - MAXIMUM VALUES OF LIGHT TECHNICAL PARAMETERS

Environmental Zone	Max Vertical Illuminance (lx)		Description
	Pre-curfew	Post-curfew	
A0	0	0	Intrinsically Dark e.g. Major Optical Observatories. No Road Lighting
A1	2	0.1	Dark e.g. relatively uninhabited rural areas. No Road Lighting
A2	5	1	Low district brightness e.g. sparsely inhabited rural and semi-rural areas
A3	10	2	Medium district brightness e.g. suburban areas in towns and cities
A4	25	5	High district brightness e.g. Town and city centres, commercial areas, and residential areas abutting commercial areas

Based on an assessment of the surrounding areas, the nearest dwellings with potential views to the signage are at the following locations:

Address	Zone
1-15 Fontenoy Rd	A3

As such, the dwellings above will form the focus of the illuminance assessment. The proposed signage (and surrounding environment) was modelled in lighting calculation program AGI32 to determine the effect (if any) of the light spill from the signage. Photometric data for the screen was provided by the screen manufacturer*, with the maximum luminance corresponding to the night time limit outlined in Section 5. Appendix D shows the lighting model and the results of the calculations.

* Electrolight takes no responsibility for the accuracy of third party provided photometric data.

It should be noted that some of the houses are shielded by mature vegetation and/or barriers which effectively obstructs the spill light of the signage. However calculations were undertaken assuming that there were no barriers or vegetation present.

It can be seen from the lighting model that the maximum illuminance to dwellings in Zone A3 is 1.20 lux at 1-15 Fontenoy Rd. The illuminance level above complies with the maximum AS4282 limit of 2 lux as outlined in Table 3.

Threshold Increment Assessment

The Threshold Increment was also calculated for the traffic approaches on M2 Motorway (Inbound), Lane Cove Rd Entry (South-westbound) and Lane Cove Rd Entry (North-eastbound). The calculation grids were located at 1.5m above ground level for general traffic approaches, with an approach viewing distance of between 10 m to 200 m from the sign. The calculation results show that the Threshold Increment does not exceed 18.27% for any traffic approach (the allowable maximum under the standard is 20%).

Luminous Intensity

The luminous intensity limits nominated in the standard are not applicable for internally illuminated signage.

Additional Requirements:

The signage operator must ensure that the average luminance difference between successive images does not exceed 30% to ensure compliance with AS4282. The dwell time shall be 10 seconds or greater.

Summary

It can therefore be seen that the proposed digital signage complies with all relevant requirements of AS4282-2019 Control of the Obtrusive Effects of Outdoor Lighting.

* Electrolight takes no responsibility for the accuracy of third party provided photometric data.

7. SUMMARY

- The proposed digital signage to be installed on the Lane Cove Road Overpass above M2 Motorway, Macquarie Park, NSW (Inbound), shall be commissioned on site to yield the following maximum luminances:

LUMINANCE LEVELS FOR DIGITAL ADVERTISEMENTS		
Lighting Condition	Max Permissible Luminance (cd/m2)	Compliant
Full Sun on face of Signage	No Limit	✓
Day Time Luminance (typical sunny day)	6000	✓
Morning and Evening Twilight and Overcast Weather	700	✓
Night Time	350	✓

- The signage operator must ensure that the average luminance difference between successive images does not exceed 30% to ensure compliance with AS4282. The dwell time shall be 10 seconds or greater.
- The proposed signage has been found to comply with all relevant requirements of AS4282-2019 Control of the Obtrusive Effects of Outdoor Lighting.
- In complying with the above requirements, the proposed signage should not result in unacceptable glare nor should it adversely impact the safety of pedestrians, residents or vehicular traffic. Additionally, the signage should not cause any reduction in visual amenity to nearby residences or accommodation.

8. DESIGN CERTIFICATION

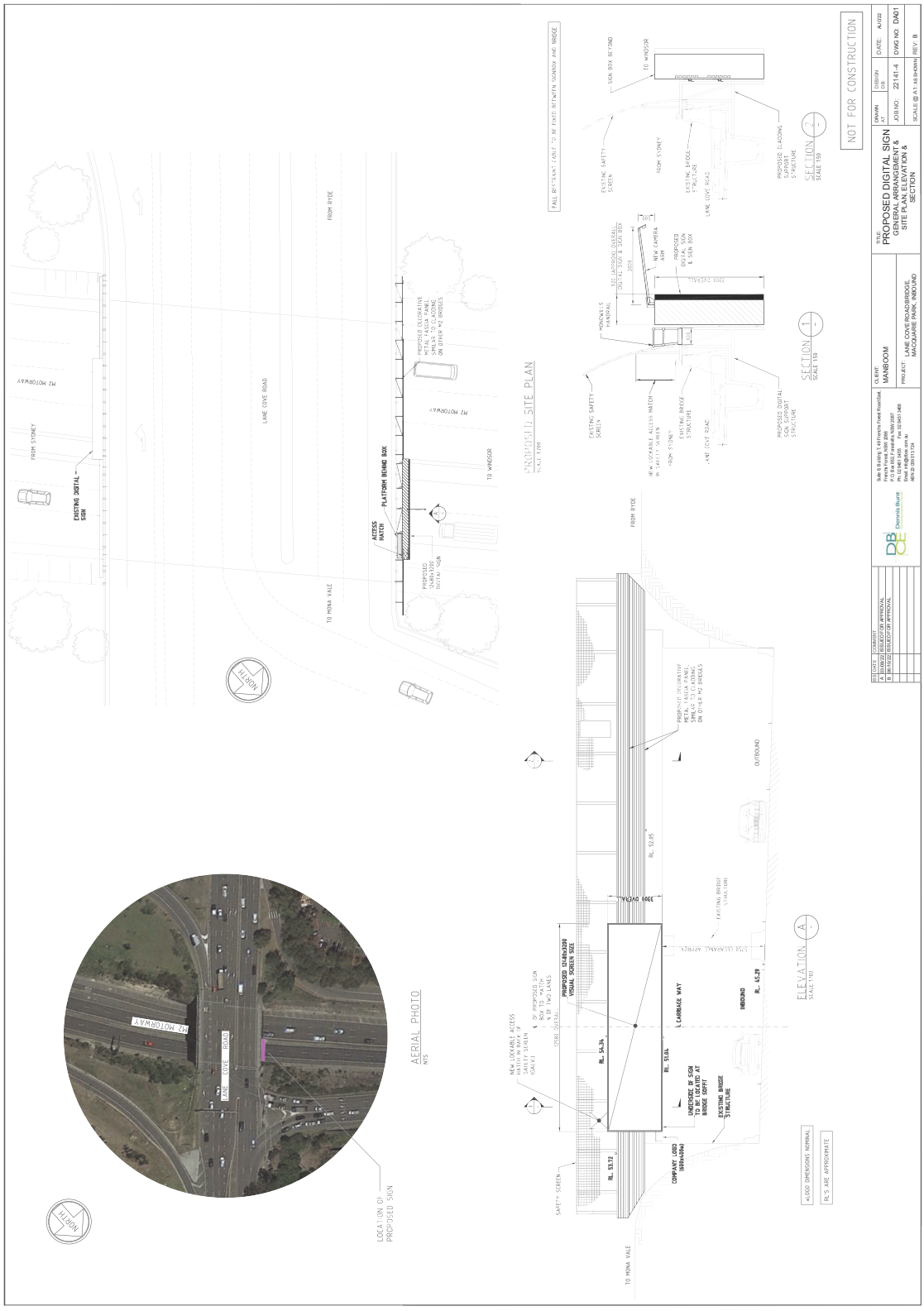
The proposed digital signage to be installed on the Lane Cove Road Overpass above M2 Motorway, Macquarie Park, NSW (Inbound), if commissioned according to this report, complies with the following criteria, guidelines and standards:

- State Environmental Planning Policy (Industry and Employment) 2021 (Refer Appendix C)
- Transport Corridor Outdoor Advertising & Signage Guidelines 2017
- AS 4282-2019 Control of the Obtrusive Effects of Outdoor Lighting

Ryan Shamier
Master Design Science (Illumination)
B. Elec Eng (Hons)
Member of the Illuminating Engineering Society of Australia and New Zealand (MIES)
Professional Engineer NSW PRE0000868

Senior Lighting Designer
Electrolight Sydney
24/10/22

APPENDIX A
SIGNAGE LOCATION



APPENDIX B

DIGITAL SIGNAGE SPECIFICATION

DAKTRONICS PRODUCT SPECIFICATION

SERIES SPECIFICATION

DVX-2200N-10MN-8000-WJ

Pixel Configuration	RGB 3-in-1 SMD
Line and Column Spacing	0.394 inches - 10 millimeters
Module Configuration - Pixels (RxC)	32 x 32 pixels
Module Dimensions (HxW)	12.598 x 12.598 inches - 320 x 320 mm
Maximum Power per Module	65.35 Watts
Average Power per Module	16.34 Watts
Display Weight per Module	10.2 pounds - 4.63 kilograms
Processing	22 bit Distributed
Color Capacity	281 Trillion Colors
Dimming	256 levels
Color Temperature	3,000º-10,000º kelvin (adjustable)
Calibration	pixel to pixel
LED Refresh Rate	3840 hertz
LED Lifetime	100,000 hrs
Brightness - Typical Nits	8000 nits (cd/sm)
Horizontal Viewing Angle	160º
Vertical Viewing Angle (Up/Down)	+60/-70º
Contrast Ratio	1200:1
Service Access	Front or Rear
Cabinet Depth	3.937 inches - 100 millimeters
Cabinet Construction	Die-Cast Aluminum
Ingress Protection Rating	IP-66 Rated
Working Temperature Rating	-40º to 122º F - -40º to 50º C
Ventilation	None
Data Transmission to Display	Direct: Fiberoptic Cable Remote: Internet/Network (IP)

Note 1: Consistent with Daktronics policy of continuing product improvement, specifications shown on this document are subject to change without notice.

Note 2: See contract specific drawings for customized product weights

www.daktronics.com

APPENDIX C

State Environmental Planning Policy (Industry and Employment) 2021

Schedule 5 Assessment criteria

(Clauses 8, 13 and 17)

1. Character of the area

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

2. Special areas

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

3. Views and vistas

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

4. Streetscape, setting or landscape

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

5. Site and building

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

6. Associated devices and logos with advertisements and advertising structures

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

7. Illumination

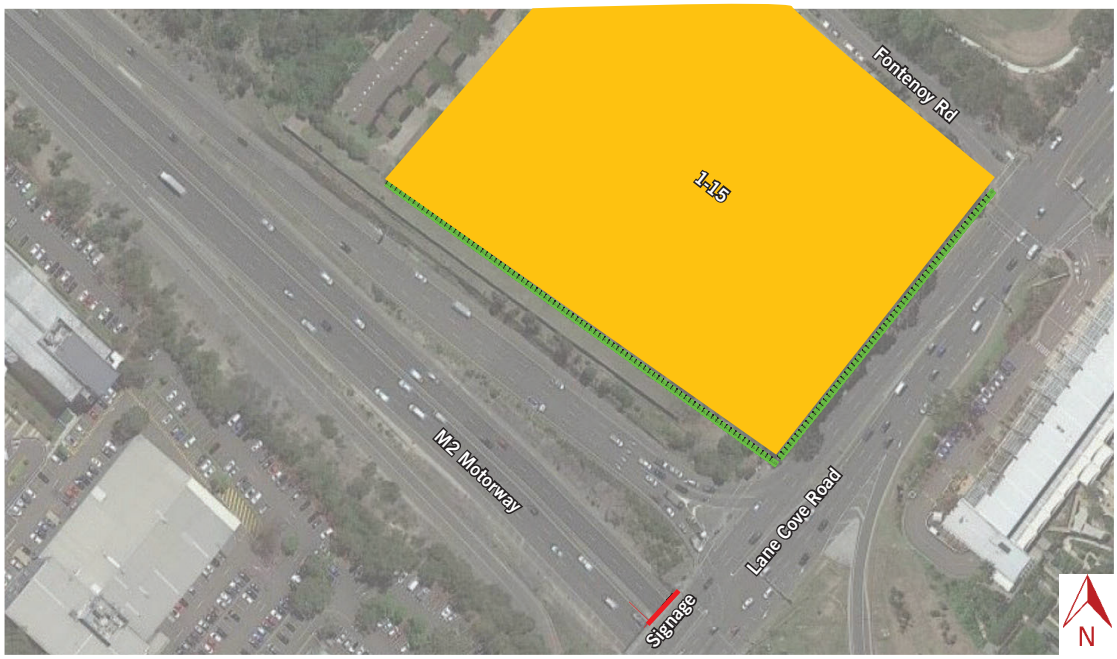
- Would illumination result in unacceptable glare?
- Would illumination affect safety for pedestrians, vehicles or aircraft?
- Would illumination detract from the amenity of any residence or other form of accommodation?
- Can the intensity of the illumination be adjusted, if necessary?
- Is the illumination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

8. Safety

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

APPENDIX D
OBTRUSIVE LIGHTING CALCULATIONS

Calculation Summary			
Label	**CalcType**	**Units**	**Max**
1-15 Fontenoy Rd_III_Seg1	Obtrusive - III	Lux	1.20
1-15 Fontenoy Rd_III_Seg2	Obtrusive - III	Lux	0.00

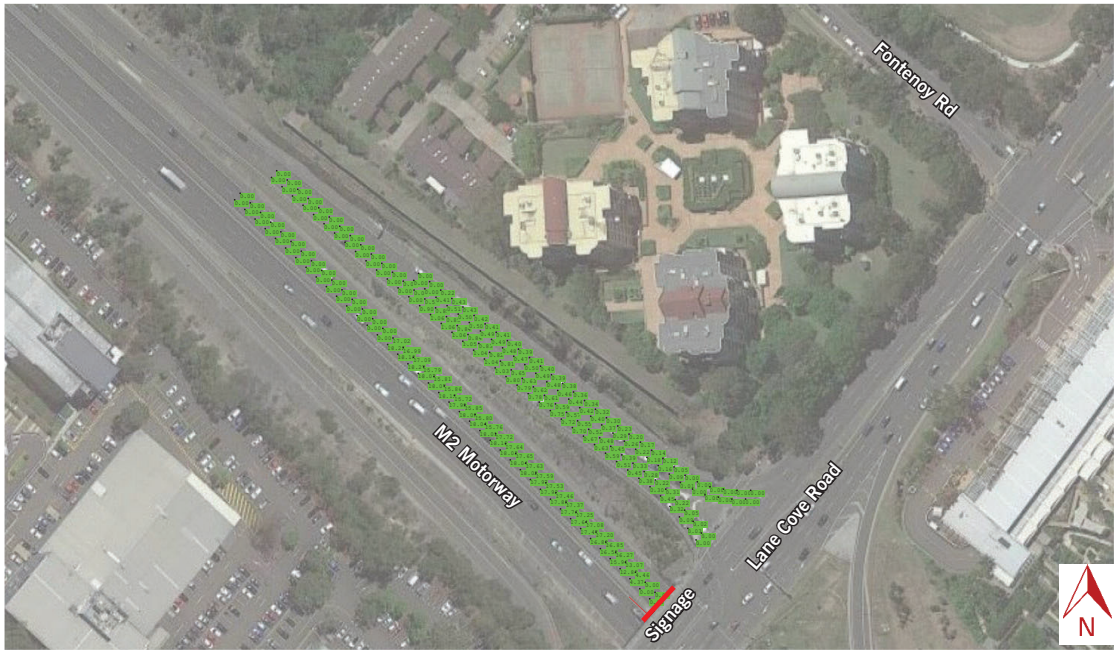


Environmental Zone Legend:

- A0
- A1
- A2
- A3
- A4

APPENDIX D
THRESHOLD INCREMENT CALCULATIONS

Calculation Summary			
Label	**CalcType**	**Units**	**Max**
Lane Cove Rd - Entry - South-Westbound	Obtrusive - TI	%	1.06
Lane Cove Rd Entry - North Eastbound	Obtrusive - TI	%	0.51
M2 Motorway - Inbound	Obtrusive - TI	%	18.27



APPENDIX D

OBTRUSIVE LIGHTING AND THRESHOLD INCREMENT CALCULATIONS

Obtrusive Light - Compliance Report

AS/NZS 4282:2019, A3 - Medium District Brightness, Curfew
Filename: INBOUND 3214.2
09-Aug-22 4:47:33 PM

Illuminance

Maximum Allowable Value: 2 Lux

Calculations Tested (2):

Calculation Label	Test Results	Max. Illum.
1-15 Fontenoy Rd_Ill_Seg1	**PASS**	1.20
1-15 Fontenoy Rd_Ill_Seg2	**PASS**	0.00

Threshold Increment (TI)

Maximum Allowable Value: 20 %

Calculations Tested (3):

Calculation Label	Adaptation Luminance	Test Results
M2 Motorway - Inbound	5	**PASS**
Lane Cove Rd - Entry - South-Westbound	5	**PASS**
Lane Cove Rd Entry - North Eastbound	5	**PASS**

Appendix E
Council Correspondence

COMMERCIAL IN CONFIDENCE

DIGITAL SIGNAGE ON THE M2 MOTORWAY

By email: cityofryde@ryde.nsw.gov.au
March 1, 2023
Mr. Wayne Rylands
General Manager
City of Ryde Council
Locked Bag 2069
North Ryde NSW 1670
cityofryde@ryde.nsw.gov.au

cc: George.BARDAS@transport.nsw.gov.au

Dear Mr. Rylands

TWO NEW PROPOSED DIGITAL SIGNS ON THE M2 MOTORWAY (M2) IN RYDE LGA

I am writing on behalf of Manboom Signage Partnership Limited (hereafter referred to as Manboom) to advise Council that Manboom intends to lodge Development Applications for two (2) new digital signs located along the M2 within your Council LGA i. Pursuant to state planning legislation (Chapter 3 of Industry and Employment SEPP 2021 (IESEPP 2021)) the NSW Minister for Planning will be the consent authority for these Development Applications (DA).

While Council is not the consent authority, we would like to meet with the relevant Council officers to discuss the DAs and answer any queries you may have.

Detailed below is a summary of the DA proposal and information which I believe you will find relevant.

BACKGROUND

In 1999, The Hills Motorway entered into an agreement (1999 Agreement) with the former NSW Roads and Traffic Authority (RTA) to display advertising along the Motorway. In the same year, The Hills Motorway (THML), with consent from the RTA, licenced to Manboom the advertising rights for the M2.

Fundamental to the 1999 agreement was the ability to display up to 45 advertising faces along the length of the Motorway (M2) over the duration of the agreement.

In accordance with the 1999 agreement, between 2010 and 2013 Manboom secured development approval from the NSW Minister for Planning for an initial 16 static lightbox advertising signs along the Motorway.

Between 2016 and 2017, development approval was received from the NSW Minister for Planning for the conversion of all 16 of the static faces to digital screens.

Currently, there are 16 advertising signs along the length of the M2. Of these signs, 9 are digital screens, and 7 are static lightbox signs. All are bridge signs, and all are illuminated 24 hours. The digital signs operate at a 25 second dwell time in accordance with the Transport Corridor Advertising and Signage Guidelines 2017 (The Guidelines).

THE DIGITAL SIGN STRATEGY

THML and Manboom regularly review the adequacy and appropriateness of advertising signage on the M2 as part of their Digital Signage Strategy discussions. An outcome of these discussions is the decision to lodge several development applications for additional digital advertising signs to address four key considerations:

1. To Provide A balance between inbound and outbound signage locations.

Along the M2, at the present time, existing signage sites are concentrated in that part of the Motorway that traverses the Hills Shire Local Government Area. This is the result of Manboom previously excluding sections of the Motorway because of future Motorway modifications and improvements. These modifications and improvements are now largely complete, and it is logical to review signage locations along the entire Motorway.
In addition, the geo-positioning imbalance that currently exists has implications on out of home media sales growth as advertisers wish to be able to capture both short and long journey viewing audiences which is not currently available.

2. To increase audience reach arising from the expansion of the Sydney Orbital Road Network.

The M2 was constructed in 1997, and since that time, its importance as a carriageway linking the north-west corridor of Sydney's orbital network, Westlink M7, Lane Cove Tunnel and NorthConnex has increased. The expanded orbital road network is servicing the north-western and southwestern growth corridors. The Motorway is now carrying significantly more traffic.

3. To cater for the growth in the out of home media (OOH) sector.

The OOH sector has grown significantly since 2015 through industry cohesion, audience validation metrics and, importantly, the uptake of digital display technology. Digital has created 'New OOH' attracting brands, products, and campaigns the 'Old OOH' could not service with static faces. There are no market signals that OOH will stop growing or become less important to clients. Indeed, the latest research post Covid has revealed continued strong growth in the DOOH segment.

4. To provide Manboom the ability to realise further advertising rights as provided for under the 1999 agreement.

The 1999 agreement provided THML and Manboom with the ability to display up to 45 advertising faces along the 22-kilometre length of the M2. At the current time, 16 signage faces have been developed, representing a 35% uptake of the number proposed within the 1999 Agreement. Manboom did not seek additional advertising in the past due to the road improvements which are now complete enabling the continuation of the Sign Strategy.

NEW ADVERTISING SITES BEING PROPOSED ALONG THE M2

Over the past 8 months, detailed planning and safety investigations have been undertaken across various locations along the length of the M2. THML and Manboom have identified seven (7) potential digital signage locations for this development phase.

The new signage locations under consideration within your LGA are detailed in Table 1. Should the new digital signs be approved, the total number of signage faces within your LGA along the M2 will increase from three (3) digital

signs to five (5) signs. Of the proposed five signs, two signs will be visible travelling inbound (towards the city), and three signs will be visible when travelling outbound (east to west).

All the proposed sites are supported by independent traffic safety, lighting impact and heritage investigations (where appropriate). The three of proposed sites are bridge signs with Eden Gardens a freestanding sign. All signs will be of landscape orientation and will be of supersite dimensions with a total advertising area per site of 42.2 square metres.

TABLE 1 NEW DIGITAL SIGNAGE LOCATIONS

NEW LOCATION	DIRECTION OF TRAVEL	LGA	TFNSW Landowner Consent Status
Eden Gardens, Macquarie Park (freestanding sign)	Outbound	Ryde	Yes
Lane Cove Road, Macquarie Park	Inbound	Ryde	Yes

COMMUNITY BENEFITS TO COUNCILS

There is an existing public benefit agreement (PBA) in place for the earlier stages of the M2 Signage Strategy that were approved by the NSW Minister for Planning in 2010 and 2017. A component of the current PBA requires Manboom (acting through THML), to pay to TfNSW (formerly the NSW Roads and Traffic Authority) a monetary contribution that is indexed annually to the consumer price index (CPI).

TfNSW currently shares this monetary contribution equally between three Councils – City of Ryde Council, Hornsby Shire Council and Hills Shire Council.

Subject to and part of the approval of the new DAs by the NSW Minister for Planning, TfNSW is required under the Transport Corridor Outdoor Advertising and Signage Guidelines (November 2017) (Guidelines) as set out in section 4.2.1: "RMS is responsible for the collection, distribution, and expenditure of public benefit monies from tollway operators. Public benefit monies received by RMS must be recorded in their financial accounts and Annual Report. RMS must consult with the relevant council to identify and prioritise activities to be included in the public benefit work program to be delivered through the program."

THE PLANNING AND DEVELOPMENT PATHWAY

The M2 Corridor is zoned SP2 Special Infrastructure (Classified Road) under the respective environmental planning instruments of each of the LGA's through which it traverses (City of Ryde, Hornsby Shire, City of Parramatta, and The Hills Shire). Signage is a prohibited land use in the SP2 Zone. The development applications for the new sites will be advanced under the provisions of Clause 3.14(1) (c) of Chapter 3 of IESEPP 2021 which enables an advertisement to be displayed on M2 Corridor land notwithstanding it is prohibited in the land use zone that applies to the site under another environmental planning instrument. Manboom has obtained legal advice to confirm that the provisions of Clause 3.14(I)(c) can be relied upon for these applications, consistent with the existing signs.

IN CONCLUSION

Manboom's intends to lodge development applications for seven (7) new digital sites in 2022. Manboom has engaged the planning and communications consultancy Urban Concepts to manage the planning matters for these applications. **If you would like a briefing about the project or would like to discuss any matters I ask that you contact Belinda Barnett, Managing Director, Urban Concepts on 0438 233 022 or via email**

belinda@urbanconcepts.net.au to arrange a convenient time. It would be appreciated if we could meet at your earliest convenience but in any event not later than 31 March 2023. The meeting can be held either face to face or online should that be more convenient.

We look forward to meeting with you.

Yours Faithfully,

Ian D Riley
Director
Manboom Signage Partnership Pty Limited