

21 September 2022

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Attn: Daniel Brook; Senior Development Manager

**RE: Aspect Industrial Estate, Mamre Road Precinct – Modification 3 to State Significant Development Application (SSD-10448), Transport Statement**

Dear Daniel,

Ason Group has been commissioned by Mirvac to prepare assessments in relation to:

- Proposed Modification (MOD 3) to the recently approved (24 May 2022) SSD 10448<sup>1</sup> at the Aspect Industrial Estate (AIE) located on Lot 56-58, Mamre Road, Kemps Creek (the Site); and
- A Stage 2 SSD (SSD-46516461) — in relation to Warehouse 9.

This covering TS focuses on the proposed MOD 3; with the TS for the Stage 2 Warehouse 9 SSD provided as **Attachment 6**.

## Objectives

In this regard, Ason Group has reviewed all relevant documentation and undertaken an assessment of the proposed MOD, focusing on:

- Parking compliance in accordance with Mamre Road Precinct Development Control Plan 2021 (MRP DCP) and the site-specific Aspect Industrial Estate Development Control Plan (AIE DCP).
- Traffic Assessment to determine the net change in traffic generation of that assumed for the approved development.
- Design compliance in accordance with AS 2890.1:2004, AS 2890.2:2018 and AS 2890.6:2009.

## Key References

The following key documents have been referenced in preparing this TS:

- Ason Group, *Transport and Accessibility Management Plan, Aspect Industrial Estate State Significant Development Application, Lots 54 – 58 Mamre Road, Kemps Creek*, revision 3, dated 13/08/2021 (Ason TMAP);
- Ason Group, *Aspect Industrial Estate, Mamre Road – Request for Further Information*, P1029I03 (Ason RFI);

<sup>1</sup> <https://www.planningportal.nsw.gov.au/major-projects/projects/aspect-industrial-estate>

- Ason Group, *Aspect Industrial Estate, Mamre Road Precinct – Modification 2 to State Significant Development Application (SSD 10448)*, P1897I01v4 (Ason MOD-2 TS);
- SBA Architects, *SSDA ESTATE MASTERPLAN - 19210\_AIE - MP02\_AL\_SSDA Estate Masterplan*, dated 25/02/2022 (Original Masterplan);
- SBA Architects, *SSDA MOD 1 ESTATE MASTERPLAN - 19210\_AIE\_MOD 1 - MP02\_S\_SSDA Estate Masterplan*, dated 11/03/2022 (MOD-2 Masterplan);
- SBA Architects, *SSDA MOD 1 ESTATE WORKS STAGING PLAN - 19210\_AIE\_MOD 1 - MP03\_G\_Estate Staging Plan*, dated 11/03/2022 (MOD-2 Stage 1 Plan);
- SBA Architects, *SSDA MOD 3 ESTATE MASTERPLAN - 21250\_AIE\_MOD 3 – MP3-02\_A\_SSDA Estate Masterplan*, dated 28/07/2022 (MOD-3 Masterplan);

The findings of our analysis are summarised herewith.

## Planning Approvals

### Summary of Original SSD-10448 Development

The Ason TMAP and Ason RFI were prepared to support the original development application, which included the following:

- A Concept Masterplan for the site comprising 11 industrial buildings, internal road network layout, building locations, gross floor area (GFA), car parking, concept landscaping, building heights, setbacks and built form parameters with the following GFAs:
  - Warehouse: 236,510m<sup>2</sup>
  - Office: 10,080m<sup>2</sup>
  - Dock Office: 1,400m<sup>2</sup>
  - Café: 122m<sup>2</sup>
- A Stage 1 development including:
  - Warehouse 1: A total of 36,722m<sup>2</sup> GFA, including 34,970m<sup>2</sup> of warehouse GFA, 1,430m<sup>2</sup> of ancillary office GFA, 200m<sup>2</sup> of dock office GFA and a 122m<sup>2</sup> café.
  - Warehouse 3: A total of 21,535m<sup>2</sup> GFA, including 20,735m<sup>2</sup> of warehouse GFA, 800m<sup>2</sup> of ancillary office GFA and 100m<sup>2</sup> of dock office GFA.
- A new signalised intersection to Mamre Road to accommodate Stage 1 traffic.

The Stage 1 and Concept Masterplan approved under SSD-10448 is reproduced as **Figure 1**.



Figure 1: Original Masterplan

## Current SSD-10448-MOD-2 Development

SSD-10448 is currently the subject to modifications since its original approval. DPE has requested an administrative change to the Condition of Consent, which is now the MOD-1. The second modification (MOD-2) represents the (at the time of writing) most recently assessed development. MOD-2 related to the relocation of Access Road 2, and the redesign of Stage 1 and the concept for Warehouse 2. The MOD-2 development provides for the following:

- A Concept Masterplan for the site comprising of 11 industrial buildings, internal road network layout, building locations, gross floor area (GFA), car parking, concept landscaping, building heights, setbacks and built-form parameters with the following GFAs:
  - Total Building Area: 243,431m<sup>2</sup>
  - Warehouse: 232,381m<sup>2</sup>
  - Office: 9,550m<sup>2</sup>
  - Dock Office: 1,500m<sup>2</sup>
- A Stage 1 development including:
  - Warehouse 1: A total of 33,886 m<sup>2</sup> GFA, including 32,686m<sup>2</sup> of warehouse GFA, 900m<sup>2</sup> of ancillary office GFA and 300m<sup>2</sup> of dock office GFA
  - Warehouse 3: A total of 21,535m<sup>2</sup> GFA, including 20,735m<sup>2</sup> of warehouse GFA, 700m<sup>2</sup> of ancillary office GFA and 100m<sup>2</sup> of dock office GFA
- A new signalised intersection to Mamre Road.

The Ason MOD-2 TS was prepared to support the approved development. The primary parking and traffic conclusions achieved within the Ason TMAP, Ason RFI and Ason MOD-2 TS now form the basis of the MOD assessment.

The current Masterplan and Stage-1 plan are provided in the following figures.



Figure 2: MOD-2 Stage 1 Plan



## Proposed Development

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### Summary

To accommodate the requirements of a future tenant, the proposed MOD is seeking to redesign the concept warehouses south of Road 01, which will see the number of warehouse buildings on the Site reduced. Accordingly, the Stage 1 development will also be modified to accommodate the changes to the warehouses' updated provision of Access Road 4, including associated subdivision, civils and landscaping.

The future tenant will occupy the now proposed Warehouse 9. It is noted that this application seeks to modify the Concept Plan only and not the Stage 1 development, with the detailed design of Warehouse 9 to be subject to a separate application process.

In summary, the MOD seeks approval for:

- A Concept Masterplan for the Site comprising 9 industrial buildings, internal road network layout, building locations, car parking, concept landscaping, building heights, setbacks and built form parameters with the following GFAs:
  - Total Building Area: 247,844m<sup>2</sup>
  - Warehouse: 238,003m<sup>2</sup>
  - Office: 8,350m<sup>2</sup>
  - Dock Office: 1,366m<sup>2</sup>
  - Café: 125m<sup>2</sup>
- A Stage 1 development including:
  - Warehouse 1: A total of 33,886 m<sup>2</sup> GFA, including 32,686m<sup>2</sup> of warehouse GFA, 900m<sup>2</sup> of ancillary office GFA and 300m<sup>2</sup> of dock office GFA
  - Warehouse 3: A total of 21,535m<sup>2</sup> GFA, including 20,735m<sup>2</sup> of warehouse GFA, 700m<sup>2</sup> of ancillary office GFA and 100m<sup>2</sup> of dock office GFA
- Car parking areas providing a total of 1,146 car spaces.
- A new signalised intersection to Mamre Road.

The MOD 3 Masterplan and Staging Plan is presented in **Figure 4** and **Figure 5**. Larger figures of the Original Masterplan, the Current MOD-2 Masterplan, MOD-2 Stage 1 Plan, the MOD-3 Masterplan and Staging Plan are provided in **Attachment 1**, **Attachment 2**, **Attachment 3**, and **Attachment 4**.



A summary of the key transport-related figures of the approved development and the proposed modification is presented in **Table 1**. Further details with regard to car parking and traffic generation as a result of the MOD are detailed in the sections below.

<b>TABLE 1: ORIGINAL DEVELOPMENT (SSD 10448) VS PROPOSED MODIFICATIONS</b>				
<b>Masterplan</b>		<b>SSD-10448</b>	<b>MOD 2</b>	<b>MOD 3 (this report)</b>
<b>Site Total</b>	Warehouse GFA (m <sup>2</sup> )	236,510	232,381	238,003
	Office GFA <sup>Note 1</sup> (m <sup>2</sup> )	11,480	11,050	9,716
	Cafe GFA (m <sup>2</sup> )	122	0	125
	Total	248,112	243,431	247,844
<b>Car Parking Spaces</b>		1,283	1,187	1,146
<b>Morning Peak Hour Trips (veh/ hr)</b>		570	560 <sup>Note 2</sup>	570
<b>Evening Peak Hour Trips (veh/ hr)</b>		595	584 <sup>Note 2</sup>	595
<b>Daily trips (veh)</b>		7,217	7,084	7,209

*Note 1: Inclusive of dock office GFA*

*Note 2: Based on adoption of generic trip rate*

## Parking Requirements

The Ason TMAP adopted rates which were consistent with the MRP DCP and the AIE DCP. In this regard, the rates applicable to the proposed development are as follows:

- Warehouse: 1 space per 300m<sup>2</sup>
- Industries: 1 space per 200m<sup>2</sup>
- Office: 1 space per 40m<sup>2</sup>
- Café: 1 space per 10m<sup>2</sup>

**TABLE 2: PARKING REQUIREMENTS**

Use	Gross Floor Area	MRP DCP Requirement	Provision
Warehouse GFA (m <sup>2</sup> )	217,268	725	<b>1,146</b>
Industries <sup>Note 1</sup>	20,735	104	
Office GFA (m <sup>2</sup> )	8,350	209	
Dock Office GFA (m <sup>2</sup> )	1,366	35	
Café (m <sup>2</sup> )	125	13	
<b>Total</b>	<b>249,276</b>	<b>1,086</b>	<b>1,146</b>

*Note 1: Includes Lot 3 calculated to "Industries" rate*

With reference to the parking rates provided in the MRP DCP, **Table 2** details the parking requirement of the overall Proposal. As shown, the car parking provision for MOD 3 complies with the requirements of the DCP and is in accordance with the accepted methodology for the original DA.

As such, the Proposal remains supportable on parking grounds and would satisfy the parking demands of the Site.

## Traffic Impacts

### Trip Rates

To determine the traffic generation potential of the MOD, reference is made to the traffic generation rates adopted in the Ason TMAP under the approved development (SSD-10448). In this regard, the relevant rates are as follows:

- AM Road Network Peak (7:00 – 8:00am): 0.23 vehicle trips per hour (vph) per 100m<sup>2</sup> GFA
- PM Road Network Peak (4:00 – 5:00pm): 0.24 vph per 100m<sup>2</sup> GFA
- Daily: 2.91 daily vehicle trips per 100m<sup>2</sup> GFA

### MOD-2 Traffic Generation

As per the Ason MOD-2 TS, the development subject to the first modification was forecast to generate the following tips:

- 499 vph in the AM peak
- 520 vph in PM peak; and
- 6,478 vehicles per day.

It should be noted that the methodology adopted in the Ason MOD-2 TS included a First Principles assessment of the traffic generation of Warehouse 1, noting that the future occupier was known. The remainder of the traffic generation was forecast on the basis of adoption of the above trip rates.

### Masterplan Traffic Generation

**Table 3** summarises the traffic generation for the whole of the Masterplan based on the traffic generation methodology detailed for MOD 2.

TABLE 3: TRAFFIC GENERATION COMPARISON				
Development	GFA (m <sup>2</sup> )	AM Peak	PM Peak	Daily
Original Masterplan (SSD-10448) <sup>Note 1</sup>	247,990	570	595	7,217
Modification 2 <sup>Note 2</sup>	243,431	499	520	6,478
Modification 3 <sup>Note 1, Note 2</sup>	247,719	509	531	6,603

*Note 1: Excludes GFA associated with café as it is anticipated trips would be linked to warehouse uses.*

*Note 2: Includes Warehouse 1 generation on the basis of the first principles assessment, with the remainder of the Site adopting the approved trip rates for SSD 10448 as per the Ason TMAP.*

With reference to the table above, the currently assessed traffic generation represents a decrease over that previously assessed for the original Concept Masterplan.

The required road network upgrades that were established as part of the original SSD-10448 consent have remained consistent under MOD-2 as well as MOD-3 (i.e. the delivery of an interim signalised intersection at Mamre Road), despite the reduction in forecast trips. As such it is evident that the proposed MOD is acceptable from a traffic perspective.

### **Traffic Impact Summary**

The Ason TMAP and Ason RFI found that the key intersection of Mamre Road / Road 01 would operate at satisfactory levels of service under the approved development. Noting the MOD represents a decrease in the forecast traffic generation that was assumed in the Ason TMAP and Ason RFI, it is concluded that the development remains supportable on traffic planning grounds.

## Access / Internal Design

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The site access, internal circulation and car parking arrangements have been developed with consideration of the requirements of the MRP DCP and the following relevant Australian Standards:

- AS2890.1:2004 for Car parking areas;
- AS2890.2:2018 for Commercial vehicle loading areas;
- AS2890.6:2009 for Accessible (disabled) parking.

In regard to the proposed design, the following is notable:

- A 30m A-double (i.e., 30m Performance Based Standards (PBS) Level 2 Type B vehicle) has been adopted as the design vehicle for site access and circulation. 20m Articulated Vehicles are generally adopted for loading dock parking.
- Swept path analysis demonstrates that the necessary manoeuvres can be accommodated by the revised design. The circulation areas for commercial (heavy) vehicles have been designed having regard for the requirements of AS2890.2:2018 (see **Attachment 5**).
- All access driveways are generally designed in accordance with AS 2890.1:2004 and AS 2890.2:2018.
- The proposed design envisages changes to the car parking and layout, with provisional parking now provided in a consolidated location to the south of the Site.
- All staff and employee parking access and modules are provided in accordance with AS2890.1:2004 for Class 1A users, which requires a minimum space length of 5.4m, a minimum width of 2.4m and a minimum aisle width of 5.8m.
- The proposed design sees changes to the truck hardstand areas of Warehouses 6-9 in accordance with access requirements of AS2890.1:2004 and AS 2890.2:2018.

## Conclusion

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In summary:

- The MOD is seeking to revise the layout of Warehouses 6-11 of the Concept Masterplan and the relocation of Access Road 04.
- The car parking provision for the Masterplan (1,146) complies with the accepted methodology detailed in the ASON TMAP. As such, the development remains supportable on parking grounds and would satisfy the parking demands of the Site.
- The estimated traffic generation of the MOD results in an increased traffic generation when compared to the current MOD-2 development. However, this increase represents just 2% of the total Masterplan traffic generation.

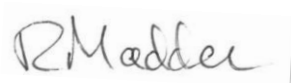
Further, proposed MOD would generate less trips than originally forecast by the Ason TMAP, which supported the Original Masterplan. The Ason TMAP and Ason RFI found that the key intersection of Mamre Road / Road 01 would operate at satisfactory levels of service under a greater forecast traffic generation. As such, the development remains supportable on traffic planning grounds.

The modification seeks to revise the design of the heavy vehicle hardstand areas, circulation roadways, car park access and parking modules of the Concept Master Plan warehouses south of Road 01. Swept path analysis demonstrates satisfactory operation for each proposed change. The MOD remains consistent with the Australian Standards and MRP DCP design requirements.

Accordingly, it is concluded that the proposed amended design is supported, and the Proposal remains consistent with parking, traffic, and design conclusions of the approved development.

If you have any questions or should you wish to discuss the application further, please contact the undersigned.

Yours sincerely,



**Rebecca Butler-Madden**

*Senior Transport Planner*

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# Attachment 1 – Original Masterplan



# Attachment 2 – Modification 2 Masterplan

**OVERALL DEVELOPMENT DATA**

Total Site Area	558,213 m <sup>2</sup>
Mamre Rd Reserve Area	14,004 m <sup>2</sup>
Rev. Boundary Site Area	544,209 m <sup>2</sup>
Access Roads Area	43,277 m <sup>2</sup>
Future Roads Area	3,497 m <sup>2</sup>
Creek Riparian Area	29,617 m <sup>2</sup>
Retained Riparian Area	4,004 m <sup>2</sup>
Basin Lot Area	17,917 m <sup>2</sup>
Total Developable Area	445,897 m <sup>2</sup>
Total Office Area (incl. dock off.)	11,050 m <sup>2</sup>
Total Warehouse Area	232,381 m <sup>2</sup>
Total Building Area	243,431 m <sup>2</sup>
Restitition on User Area	4,613 m <sup>2</sup>

**WAREHOUSE 1**

Site Area	61,253 m <sup>2</sup>
Offices	900 m <sup>2</sup>
Warehouse	32,686 m <sup>2</sup>
Dock Office	300 m <sup>2</sup>
Total GFA	33,886 m <sup>2</sup>
Carpark Provided	187

**WAREHOUSE 2**

Site Area	40,072 m <sup>2</sup>
Offices	1,500 m <sup>2</sup>
Warehouse	22,595 m <sup>2</sup>
Dock Office	200 m <sup>2</sup>
Total GFA	24,295 m <sup>2</sup>
Carpark Provided	150

**WAREHOUSE 3**

Site Area	42,855 m <sup>2</sup>
Offices	700 m <sup>2</sup>
Warehouse	20,735 m <sup>2</sup>
Dock Office	100 m <sup>2</sup>
Total GFA	21,535 m <sup>2</sup>
Carpark Provided	89

**WAREHOUSE 4**

Site Area	41,330 m <sup>2</sup>
Offices	750 m <sup>2</sup>
Warehouse	18,070 m <sup>2</sup>
Dock Office	100 m <sup>2</sup>
Total GFA	18,920 m <sup>2</sup>
Carpark Provided	93

**WAREHOUSE 5**

Site Area	28,280 m <sup>2</sup>
Offices	650 m <sup>2</sup>
Warehouse	12,050 m <sup>2</sup>
Dock Office	100 m <sup>2</sup>
Total GFA	12,800 m <sup>2</sup>
Carpark Provided	60

**WAREHOUSE 6**

Site Area	37,531 m <sup>2</sup>
Offices	750 m <sup>2</sup>
Warehouse	22,490 m <sup>2</sup>
Dock Office	100 m <sup>2</sup>
Total GFA	23,340 m <sup>2</sup>
Carpark Provided	106

**WAREHOUSE 7**

Site Area	37,636 m <sup>2</sup>
Offices	750 m <sup>2</sup>
Warehouse	21,450 m <sup>2</sup>
Dock Office	100 m <sup>2</sup>
Total GFA	22,300 m <sup>2</sup>
Carpark Provided	100

**WAREHOUSE 8**

Site Area	49,370 m <sup>2</sup>
Offices	1,300 m <sup>2</sup>
Warehouse	27,160 m <sup>2</sup>
Dock Office	200 m <sup>2</sup>
Total GFA	28,660 m <sup>2</sup>
Carpark Provided	180

**WAREHOUSE 9**

Site Area	35,215 m <sup>2</sup>
Offices	750 m <sup>2</sup>
Warehouse	17,355 m <sup>2</sup>
Dock Office	100 m <sup>2</sup>
Total GFA	18,205 m <sup>2</sup>
Carpark Provided	85

**WAREHOUSE 10**

Site Area	33,332 m <sup>2</sup>
Offices	750 m <sup>2</sup>
Warehouse	17,450 m <sup>2</sup>
Dock Office	100 m <sup>2</sup>
Total GFA	18,300 m <sup>2</sup>
Carpark Provided	87

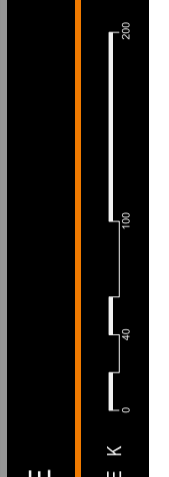
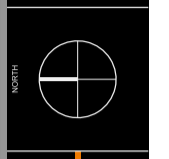
**WAREHOUSE 11**

Site Area	38,815 m <sup>2</sup>
Offices	750 m <sup>2</sup>
Warehouse	20,340 m <sup>2</sup>
Dock Office	100 m <sup>2</sup>
Total GFA	21,190 m <sup>2</sup>
Carpark Provided	90



**LEGEND**

- Landscape Setback
- Building Setback
- Retaining Wall
- Fire Services
- Fire Brigade Truck Parking
- Rainwater Tank
- AC Plant Indicative Location



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11.03.2022  
10.03.2022  
14.02.2022  
14.02.2022

ISSUED FOR SSDA - MOD 1  
ISSUED FOR INFORMATION  
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ISSUED FOR INFORMATION

Scale: 1:4000 @ A3  
1:12,000 @ A4  
1:2,000 @ A1  
1:1,000 @ A0

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\*Areas are measured to future Mamre Rd boundary in red  
\*\*All areas subject to survey

# Attachment 3 – Modification 2 Stage 1 Plan



# Attachment 4 – Modification 3 Masterplan

OVERALL DEVELOPMENT DATA

Total Site Area	586,323 m <sup>2</sup>
Yamre Rd Reserve Area	1,000 m <sup>2</sup>
Access Road Area	54,310 m <sup>2</sup>
Access Roads Area	40,032 m <sup>2</sup>
Future Roads Area	3,570 m <sup>2</sup>
Crack Migration Area	2,040 m <sup>2</sup>
Basin Lot Area	18,130 m <sup>2</sup>
Total Driveway Area	466,837 m <sup>2</sup>
Total Office Area (see schedule)	9,716 m <sup>2</sup>
Total Warehouse Area	238,003 m <sup>2</sup>
Cafe	125 m <sup>2</sup>
Restroom on User Area	4,613 m <sup>2</sup>

<b>WAREHOUSE 1</b>	
Site Area	61,038 m <sup>2</sup>
Warehouse	1,500 m <sup>2</sup>
Deck Office	22,390 m <sup>2</sup>
Basin Lot	18,130 m <sup>2</sup>
Total GFA	24,220 m <sup>2</sup>
Carpark Provided	197

<b>WAREHOUSE 2</b>	
Site Area	40,072 m <sup>2</sup>
Warehouse	1,500 m <sup>2</sup>
Deck Office	22,390 m <sup>2</sup>
Basin Lot	18,130 m <sup>2</sup>
Total GFA	24,220 m <sup>2</sup>
Carpark Provided	197

<b>WAREHOUSE 3</b>	
Site Area	42,855 m <sup>2</sup>
Warehouse	700 m <sup>2</sup>
Deck Office	20,705 m <sup>2</sup>
Basin Lot	18,130 m <sup>2</sup>
Total GFA	21,535 m <sup>2</sup>
Carpark Provided	89

<b>WAREHOUSE 4</b>	
Site Area	41,385 m <sup>2</sup>
Warehouse	750 m <sup>2</sup>
Deck Office	16,000 m <sup>2</sup>
Basin Lot	18,130 m <sup>2</sup>
Total GFA	18,995 m <sup>2</sup>
Carpark Provided	83

<b>WAREHOUSE 5</b>	
Site Area	28,180 m <sup>2</sup>
Warehouse	650 m <sup>2</sup>
Deck Office	11,000 m <sup>2</sup>
Basin Lot	18,130 m <sup>2</sup>
Total GFA	12,622 m <sup>2</sup>
Carpark Provided	60

<b>WAREHOUSE 6</b>	
Site Area	16,436 m <sup>2</sup>
Warehouse	1,000 m <sup>2</sup>
Deck Office	6,574 m <sup>2</sup>
Basin Lot	18,130 m <sup>2</sup>
Total GFA	5,574 m <sup>2</sup>
Carpark Provided	71

<b>WAREHOUSE 7</b>	
Site Area	27,120 m <sup>2</sup>
Warehouse	750 m <sup>2</sup>
Deck Office	14,358 m <sup>2</sup>
Basin Lot	18,130 m <sup>2</sup>
Total GFA	15,333 m <sup>2</sup>
Carpark Provided	84

<b>WAREHOUSE 8</b>	
Site Area	75,720 m <sup>2</sup>
Warehouse	1,750 m <sup>2</sup>
Deck Office	41,200 m <sup>2</sup>
Basin Lot	18,130 m <sup>2</sup>
Total GFA	45,146 m <sup>2</sup>
Carpark Provided	166

<b>WAREHOUSE 9</b>	
Site Area	113,682 m <sup>2</sup>
Warehouse	1,850 m <sup>2</sup>
Deck Office	64,400 m <sup>2</sup>
Basin Lot	18,130 m <sup>2</sup>
Total GFA	86,546 m <sup>2</sup>
Carpark Provided	286

\* Areas are measured to future boundary in red  
 All areas subject to survey





# Attachment 5 – Swept Path Analysis



# Attachment 6 – Transport Statement for Warehouse 9

asongroup



## **Transport Statement**

Warehouse 9 - Aspect Industrial Estate, Mamre Road Precinct

Lots 54-58 Mamre Road, Kemps Creek

20/05/2022

P1901

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## Document Control

<b>Project No</b>	1901
<b>Project</b>	Warehouse 9, Aspect Industrial Estate
<b>Client</b>	Mirvac
<b>File Reference</b>	P1901r01v2 TS WH 9 Aspect Industrial Estate, Mamre Rd, Issue

## Revision History

Revision No.	Date	Details	Author	Approved by
-	24/08/2022	Issue	J. Wu A. Ji	R. Butler-Madden
I	20/09/2022	Issue	R. Butler-Madden	R. Butler-Madden
II	21/09/2022	Issue	R. Butler-Madden	R. Butler-Madden

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## Glossary

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### APPENDICES

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<b>Appendix A. Ason RFI Modelling Assessment</b>
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<b>Appendix F. Correspondence to TfNSW</b>

# Glossary

Acronym	Description
AIE	Aspect Industrial Estate
CC	Construction Certificate
Council	Penrith City Council
DA	Development Application
DCP	Development Control Plan
GFA	Gross Floor Area
HRV	Heavy Rigid Vehicle (as defined by AS2890.2:2018)
LEP	Local Environmental Plan
LGA	Local Government Area
LoS	Level of Service
MOD	Modification Application
MRP	Mamre Road Precinct
RMS Guide	Transport for NSW (formerly Roads and Traffic Authority), Guide to Traffic Generating Developments, 2002
SSD	State Significant Development
TDT 2013/04a	TfNSW Technical Direction, Guide to Traffic Generating Developments – Updated traffic surveys, August 2013
TfNSW	Transport for New South Wales
TMAP	Transport and Accessibility Management Plan
TA	Transport Assessment
TS	Transport Statement
vph	Vehicle movements per hour (1 vehicle in & out = 2 movements)

# 1 Introduction

## 1.1 Overview

---

Ason Group has been engaged by Mirvac to prepare a Transport Statement (TS) supporting State Significant Development (SSD) 6516461 for an industrial development proposal. The application relates to development of Warehouse 9 (the Proposal) of the Aspect Industrial Estate (AIE), located on Lot 56-58, Mamre Road, Kemps Creek (the Site).

AIE is currently subject to a Concept Masterplan approval (reference: SSD-10448<sup>1</sup>). Consent was provided for Stage 1 under SSD-10448, which provides the detailed consent for Warehouse 1 and Warehouse 3. This application therefore refers to the detailed design for Warehouse 9 of the approved Concept Masterplan.

In this regard, Ason Group has reviewed all relevant documentation and undertaken an assessment of the Proposal, focusing on:

- Parking compliance in accordance with Mamre Road Precinct Development Control Plan 2021 (MRP DCP) and the site-specific Aspect Industrial Estate Development Control Plan (AIE DCP).
- Traffic Assessment to determine the net change in traffic generation of that assumed for the approved development.
- Design compliance in accordance with AS 2890.1:2004, AS 2890.2:2018 and AS 2890.6:2009.

## 1.2 Site Context

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The Proposal is located within Aspect Industrial Estate (AIE), located on Lots 54-58, DP259135, Kemps Creek (the Site). The AIE is legally described as Lots 54 – 58 in DP 259135, Mamre Road Kemps Creek, and has an area of approximately 56.3 hectares (ha). It has approximately 950m of direct frontage to Mamre Road with a proposed intersection providing vehicular access via Mamre Road to the M4 Motorway and Great Western Highway to the north the Elizabeth Drive to the south.

The Site is located approximately 4km north-west of the future Western Sydney International (Nancy-Bird Walton) Airport (WSA), 13km south-east of the Penrith CBD and 40km west of the Sydney CBD. A Site and Location Plan within the context of the Mamre Road Precinct (MRP) is presented in **Figure 1**.

It currently provides for a single residential dwelling as well as a small-scale agricultural business.

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<sup>1</sup> <https://www.planningportal.nsw.gov.au/major-projects/projects/aspect-industrial-estate>



Figure 1: Site Location within Mamre Road Precinct

### 1.3 Reference Documents

Having regard to the above, the following key documents have been referenced in preparing this TS:

- Ason Group, *Transport and Accessibility Management Plan, Aspect Industrial Estate State Significant Development Application, Lots 54 – 58 Mamre Road, Kemps Creek*, revision 3, dated 13/08/2021 (Ason TMAP);
- Ason Group, *Aspect Industrial Estate, Mamre Road – Request for Further Information*, P1029103 (Ason RFI);
- Ason Group, *Aspect Industrial Estate, Mamre Road Precinct – Modification 2 to State Significant Development Application (SSD 10448)*, P1897101v4 (Ason MOD-2 TS);
- Ason Group, *Aspect Industrial Estate, Mamre Road Precinct – Modification 3 to State Significant Development Application (SSD 10448)*, P1901101v3 (Ason MOD-3 TS);
- SBA Architects, *SSDA-MOD 3 ESTATE MASTERPLAN - 21250\_AIE\_MOD 3 – MP3-02\_A\_SSDA Estate Masterplan*, dated 28/07/2022 (MOD-3 Masterplan);
- SBA Architects, *LOT 9 SITE & WAREHOUSE FLOOR PLAN - 21250\_DA910\_L\_LOT 9 SITE & WAREHOUSE FLOOR PLAN*, dated 04/08/2022 (Warehouse 9 Plan).

## 1.4 Secretary’s Environmental Assessment Requirements

Secretary’s Environmental Assessment Requirements (SEARs) were provided by the NSW Department of Planning & Environmental (DPE) in relation to the SSD on 16 August 2022.

The SEARs relating to transport issues are outlined in below. Ason Group has provided a summary response to each SEAR, and reference to the section of this TS providing a more detailed analysis of each SEAR.

**TABLE 1: DPE TRAFFIC & TRANSPORT SEARS**

SEARs Requirement	Response
Details of all daily and peak traffic volumes likely to be generated during all key stages of construction and operation, including a description of vehicle types and vehicle access routes	Operational traffic flows have been determined for the Proposal on the basis of adoption of a trip rate (as per the Ason TMAP) as well as occupier operational information (See <b>Section 6</b> ).  The Preliminary CTMP prepared for the approved SSD-10048 is reproduced as <b>Attachment 3</b> . This CTMP forms the basis on which to develop all future detailed CTMPs on. It is anticipated that confirmation of construction traffic generation will be detailed at such a time when the specific CTMP for Warehouse 9 is developed.
An assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts at key intersections using SIDRA or similar traffic model;	The Ason TMAP and Ason RFI provided the modelling assessment of the whole Masterplan, with the methodology agreed with Transport for New South Wales (TfNSW). No further SSDs or applications have been approved since this assessment and therefore the results and conclusions remain valid. It is noted that the Warehouse 9 Proposal is entirely consistent with the current Masterplan, which represents a slight decrease in GFA over that previously approved.  For reference, the relevant SIDRA analysis from the Ason RFI – prepared for the original development application – is provided as <b>Appendix A</b> . This analysis included the GFA associated with the whole of the Concept Masterplan.  Further, it is noted that, based on operational information provided by the Warehouse 9 Tenant, the traffic generation of the Proposal in the peak hours is anticipated to be 31-74% less than that forecast under the MOD-3 Masterplan. Therefore, it is concluded that the development remains supportable on traffic planning grounds  See <b>Section 6</b> for more detail.
Details of access to the site from the road network including driveway locations, design, sight distance, and impacts on the efficient and safe operation of access roads within the Aspect Industrial Estate;	Refer to plan set, <b>Section 7</b> and <b>Appendix C</b> .  All access points have been designed in accordance with the requirements of MRP DCP, AS2890.1:2004 and AS2890.2:2018.
Details and plans of loading dock servicing and provisions, on-site parking provisions, and sufficient pedestrian and cyclist facilities, in accordance with the relevant Australian Standards;	Refer to the architectural plan set provided separately.  Refer to section 5 for parking requirements.  It is noted that a Framework Sustainable Travel Plan has been prepared and is provided as <b>Appendix E</b> .
Details of the largest vehicle anticipated to access and move within the site, including swept path analysis which depict vehicles entering, exiting and manoeuvring throughout the site;	Swept path analysis is provided as <b>Appendix C</b> .

<p><b>Demonstration that the Mamre Road/Access Road 1 intersection can accommodate operational traffic associated with the development;</b></p>	<p>The Ason TMAP provided for a detailed assessment of the traffic impacts associated with the whole Masterplan, and were mitigated accordingly through the provision of a signalised access at the intersection of Road 01 and Mamre Road.</p> <p>The Ason TMAP and Ason RFI found that the key intersection of Mamre Road / Road 01 would operate at satisfactory levels of service under the approved development.</p> <p>The Warehouse 9 Proposal is entirely consistent with that of the current Masterplan, which presents a minor decrease the GFA previously approved and considered acceptable.</p>
<p><b>if upgrades to the Mamre Road/Access Road 1 intersection is required, provide details of the upgrades including but not limited to consultation with TfNSW and Penrith City Council, timing and delivery (construction and operation) of the upgrade.</b></p>	<p>As above, the GFA associated with the overall Masterplan is consistent with that previously approved and considered acceptable. Therefore no further upgrades are required to the intersection.</p> <p>It is critical to note that the capacity of the Road 01 leg of the intersection is being delivered to the ultimate width. Therefore no further capacity is expected to be delivered by 2036 (being the ultimate year assessed). Therefore any additional capacity at the intersection will relate to the addition of the western leg, as well through lanes on Mamre Road, which are required to accommodate growth in background traffic flows.</p>

It is understood that the input to the SEARs for TfNSW had not been received at the time of issue by DPE. Further, it is noted that that a consultation package was sent by Mirvac to TfNSW on 14 July 2022. Again, it is understood that no response is yet to be received (see **Appendix F**).

# 2 Summary of Previous Approvals

## 2.1 Summary of Original Development (SSD 10448)

The AIE was originally granted development consent under SSD 10448 in May 2022 and provided for the following:

- A Concept Masterplan for the site comprising 11 industrial buildings for warehousing, distribution centre and general industrial uses, internal road network layout, building locations, gross floor area (GFA), car parking, concept landscaping, building heights, setbacks and built form parameters with the following GFAs:
  - Warehouse: 236,510m<sup>2</sup>;
  - Office: 10,080m<sup>2</sup>
  - Dock Office: 1,400m<sup>2</sup>
  - Café: 122m<sup>2</sup>.
- A Stage 1 development including:
  - Warehouse 1: A total of 36,722m<sup>2</sup> GFA, including 34,970m<sup>2</sup> of warehouse GFA, 1,430m<sup>2</sup> of ancillary office GFA, 200m<sup>2</sup> of dock office and a 122m<sup>2</sup> café.
  - Warehouse 3: A total of 21,535m<sup>2</sup> GFA, including 20,735m<sup>2</sup> of warehouse GFA, 800m<sup>2</sup> of ancillary office GFA and 100m<sup>2</sup> of dock office GFA.
- A new signalised intersection to Mamre Road to accommodate Stage 1 traffic.

The Stage 1 and Concept Masterplan approved under SSD 10448 is reproduced as **Figure 2** and **Figure 3**.



Figure 2: SSD 10448 Approved Architectural Stage 1 Plan



Figure 3: SSD 10448 Approved Architectural Masterplan

With reference to the original approval under SSD 10448, the Ason TMAP forecast that the Site would, once fully operational, generate:

- 570 vehicle trips per hour (vph) in the AM peak hour
- 595 vph in the PM peak hour
- 7,218 vehicles per day.

## 2.2 MOD 3 Development (SSD-10448-Mod-3)

Subsequent to the approval of the Concept Masterplan, SSD-10448 is currently the subject to modifications. DPE has requested an administrative change to the Condition of Consent, which is now MOD-1. A second modification (MOD-2) relates to the relocation of access Road 2, and the redesign of Stage 1 and the concept for Warehouse 2.

The third modification (MOD-3) provides for the required redesign of the approved Concept Masterplan to accommodate the requirements for Warehouse 9. MOD-3 redesigns the concept warehouses south of Road 1. The MOD-3 development provides for the following:

- A Concept Masterplan for the Site comprising 9 industrial buildings, internal road network layout, building locations, car parking, concept landscaping, building heights, setbacks and built form parameters with the following GFAs:
  - Total Building Area: 247,637m<sup>2</sup>
  - Warehouse: 237,796m<sup>2</sup>;
  - Office: 8,350m<sup>2</sup>
  - Dock Office: 1,366m<sup>2</sup>
  - Café: 125m<sup>2</sup>
- A Stage 1 development including:
  - Warehouse 1: A total of 33,886 m<sup>2</sup> GFA, including 32,686m<sup>2</sup> of warehouse GFA, 900m<sup>2</sup> of ancillary office GFA, 300m<sup>2</sup> of dock office
  - Warehouse 3: A total of 21,535m<sup>2</sup> GFA, including 20,735m<sup>2</sup> of warehouse GFA, 700m<sup>2</sup> of ancillary office GFA and 100m<sup>2</sup> of dock office GFA
- Car parking areas providing a total of 1,146 car spaces.
- A new signalised intersection to Mamre Road.

The Ason MOD-3 TS, which this TS accompanies, was prepared to support MOD 3. The primary parking and traffic conclusions achieved within the Ason TMAP, Ason RFI and Ason MOD-3 TS now form the basis of this assessment.

The MOD 3 Masterplan is presented in **Figure 4**.



Figure 4: SSD 10448 MOD 3 Architectural Masterplan

# 3 Infrastructure Review

## 3.1 SSD-10448 Condition A14

Conditions A14 of the Conditions of Consent associated with the approved SSD requires the following:

*A14. The Applicant must prepare an Infrastructure Review to support each future stage of the Concept Proposal. The Infrastructure Review must demonstrate the surrounding road infrastructure can accommodate the relevant stage and other approved developments in the MRP. The Infrastructure Review must:*

- (a) detail traffic volumes from all operating stages of the Concept Proposal;*
- (b) include background traffic volumes from key roads within the MRP, including Mamre Road; (c) assess the operating performance of key intersections in the MRP, including Mamre Road and Access Road 1;*
- (d) detail the current level of approved development within the MRP, including total approved GFA;*
- (e) consider consistency with the latest approved Concept Proposal traffic volumes;*
- (f) demonstrate the road network has sufficient capacity to accommodate the proposed stage of the Concept Proposal, and if the proposed stage would trigger the need for any road upgrades, including those identified in the traffic modelling for the MRP;*
- (g) if road upgrades are required to support the proposed stage, identify the timing and mechanisms to contribute to the delivery of the required road upgrades.*

Table 2 details the response to each of the requirements.

TABLE 2: INFRASTRUCTURE REVIEW														
Item	Condition	Response												
(a)	detail traffic volumes from all operating stages of the Concept Proposal	There are no stages currently operational and therefore no operational volumes are currently generated by the Site.												
(b)	include background traffic volumes from key roads within the MRP, including Mamre Road; (c) assess the operating performance of key intersections in the MRP, including Mamre Road and Access Road 1	<p>A recent traffic survey of the Mamre Road / Bakers Lane intersection (undertaken in August 2022) found the following traffic flows:</p> <table border="1"> <thead> <tr> <th colspan="3">August 2022 Traffic Volumes</th> </tr> <tr> <th>Direction</th> <th>AM</th> <th>PM</th> </tr> </thead> <tbody> <tr> <td>Mamre Road Northbound</td> <td>643</td> <td>867</td> </tr> <tr> <td>Mamre Road Southbound</td> <td>791</td> <td>710</td> </tr> </tbody> </table> <p>Note that the above includes construction traffic generated by SSD-9522.</p> <p>The modelling assessment detailed in the Ason RFI adopted May 2018 traffic flows and applied a 3% growth rate per year to establish baseline flows (noting the COVID-19 pandemic restrictions to movement of people), as requested by TfNSW. The flows recorded in 2018 were as follows:</p>	August 2022 Traffic Volumes			Direction	AM	PM	Mamre Road Northbound	643	867	Mamre Road Southbound	791	710
August 2022 Traffic Volumes														
Direction	AM	PM												
Mamre Road Northbound	643	867												
Mamre Road Southbound	791	710												

		<table border="1" data-bbox="855 226 1406 376"> <thead> <tr> <th colspan="3">May 2018 Traffic Volumes</th> </tr> <tr> <th>Direction</th> <th>AM</th> <th>PM</th> </tr> </thead> <tbody> <tr> <td>Mamre Road Northbound</td> <td>609</td> <td>865</td> </tr> <tr> <td>Mamre Road Southbound</td> <td>782</td> <td>678</td> </tr> </tbody> </table> <p>Therefore, on the basis of actual survey data, the resulting growth rates are as follows:</p> <table border="1" data-bbox="855 483 1406 633"> <thead> <tr> <th colspan="3">% Change per Year</th> </tr> <tr> <th>Direction</th> <th>AM</th> <th>PM</th> </tr> </thead> <tbody> <tr> <td>Mamre Road Northbound</td> <td>+1.4%</td> <td>+0.1%</td> </tr> <tr> <td>Mamre Road Southbound</td> <td>+0.3%</td> <td>+1.2%</td> </tr> </tbody> </table> <p>As shown by the current survey data, despite construction commencing on other development projects, the increase in traffic flows over the past 4 years is actually less than the growth rate requested for use by TfNSW in the Ason RFI modelling assessment. Therefore, the modelling assessment already undertaken is expected to be conservative.</p>	May 2018 Traffic Volumes			Direction	AM	PM	Mamre Road Northbound	609	865	Mamre Road Southbound	782	678	% Change per Year			Direction	AM	PM	Mamre Road Northbound	+1.4%	+0.1%	Mamre Road Southbound	+0.3%	+1.2%
May 2018 Traffic Volumes																										
Direction	AM	PM																								
Mamre Road Northbound	609	865																								
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Direction	AM	PM																								
Mamre Road Northbound	+1.4%	+0.1%																								
Mamre Road Southbound	+0.3%	+1.2%																								
(c)	<p>assess the operating performance of key intersections in the MRP, including Mamre Road and Access Road 1</p>	<p>There have been no changes in the MRP that would change the modelling assessment already undertaken (i.e. such as additional approved developments) and documented in the Ason TMAP and Ason RFI. Note that the relevant sections of the Ason RFI have been provided as <b>Appendix A</b>. All conditions within the MRP remain the same as when this assessment was undertaken.</p> <p>Therefore the expected intersection performance will remain consistent with the level already considered acceptable.</p>																								
(d)	<p>detail the current level of approved development within the MRP, including total approved GFA</p>	<p>No further developments have been approved since consent was provided for SSD-10448. Therefore, the approved developments are:</p> <ul style="list-style-type: none"> <li>SSD-9522-Mod-2, located at 657-703 Mamre Road (north west of the AIE) which provides for 187,378m<sup>2</sup> of industrial warehouse GFA<sup>2</sup>; and</li> <li>A place of worship at 230-242 Aldington Road (DA17/1247) which provides for a GFA of 3,821m<sup>2</sup>. Note that no traffic from this development is expected to actually travel past the Site.</li> </ul>																								
(e)	<p>consider consistency with the latest approved Concept Proposal traffic volumes</p>	<p>As per the MOD report which this TA accompanies, the modification will result in a GFA for the overall Concept Masterplan consistent with that originally approved (it will decrease it by approximately 300m<sup>2</sup>). Therefore, on adoption of the generic trip rate assessment, the traffic generation of the development will be consistent to the approved Concept Masterplan.</p> <p>Further, as detailed in Section 6.3.2, based on the intended tenant operational information, it is expected</p>																								

<sup>2</sup> <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-9522-MOD-2%2120220412T002309.267%20GMT>

		<p>that the traffic generation could be lower than that forecasted by adoption of a generic trip rate.</p> <p>As such, it is evident that the traffic volumes associated with the Proposal would be consistent with that envisaged under the Concept Masterplan.</p>
<b>(f)</b>	demonstrate the road network has sufficient capacity to accommodate the proposed stage of the Concept Proposal, and if the proposed stage would trigger the need for any road upgrades, including those identified in the traffic modelling for the MRP	<p>As detailed above, the conditions have not changed in the MRP that would require revision of the modelling assessment already undertaken for the approved Concept Masterplan (detailed in the Ason TMAP and the Ason RFI). Therefore, there would be no change in the expected operation of the road network.</p>
<b>(g)</b>	if road upgrades are required to support the proposed stage, identify the timing and mechanisms to contribute to the delivery of the required road upgrades	<p>As detailed in Section 6, no further upgrades are required to support the Proposal.</p> <p>It is critical to recognise that the Proponent is offsetting the impacts of the whole Concept Masterplan approved by delivery of the signalised access intersection; rather payment of contributions that would otherwise contribute to upgrades of the wider road network required to support the whole MRP.</p>

# 4 Proposal Summary

The application seeks consent for earthworks, infrastructure and roads, and the construction, fit out and operation of the warehouse and logistic facility with associated car parking for Lot / Warehouse 9 of the AIE.

In summary, the Proposal provides for:

- A total of 66,341m<sup>2</sup> GFA, including:
  - 64,725m<sup>2</sup> of Warehouse GFA
  - 1,350m<sup>2</sup> of office GFA
  - 266m<sup>2</sup> of dock office GFA
- 266 parking spaces
- Light vehicle access and heavy vehicle exit, via Road 04, with heavy vehicle entry via Access Road 03.

A reduced copy of Site plan, prepared by SBA Architects, is presented in **Figure 5**.

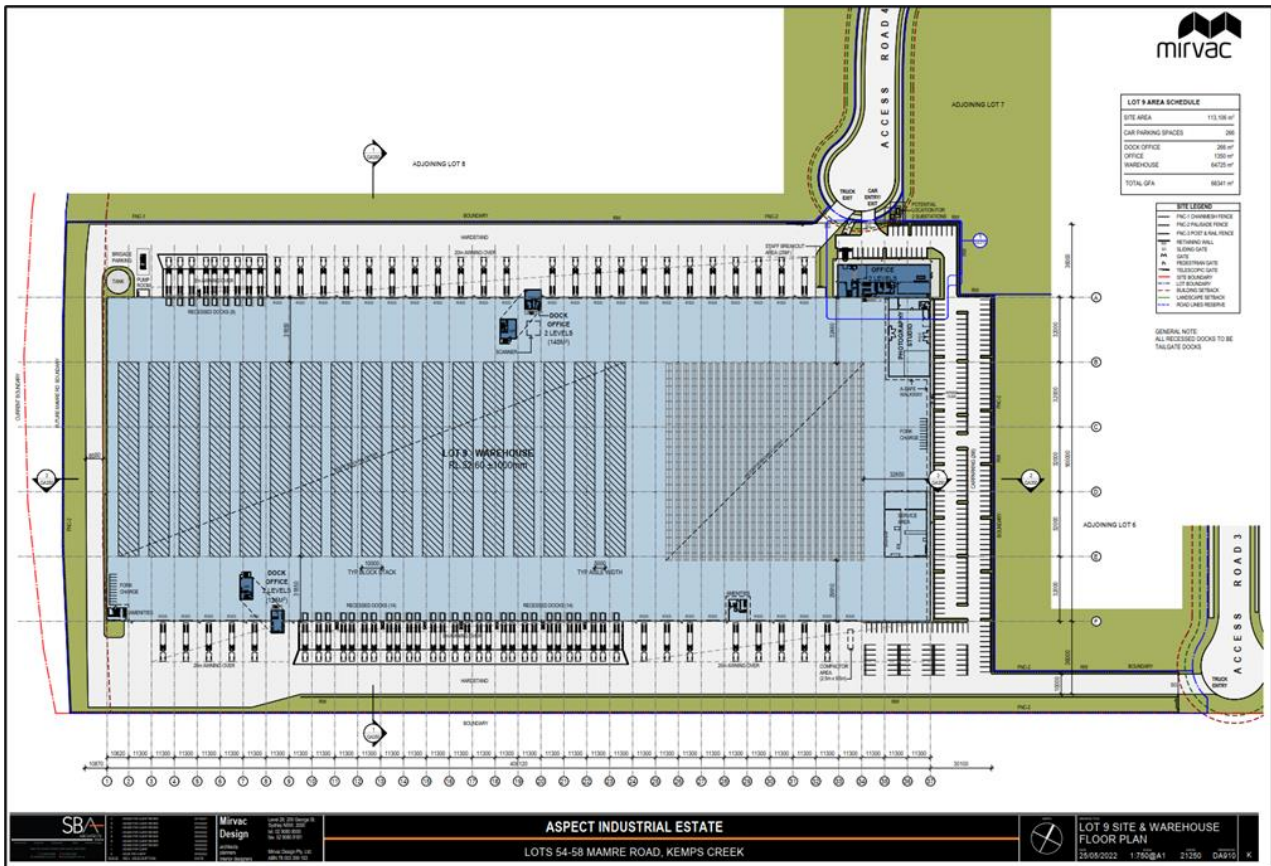


Figure 5: Proposed Warehouse 9 Site Plan

# 5 Parking Requirements

## 5.1 Car Parking

The Ason TMAP adopted rates which were consistent with the MRP DCP and the AIE DCP. In this regard, the rates applicable to the proposed development are as follows:

- Warehouse: 1 space per 300m<sup>2</sup>
- Office: 1 space per 40m<sup>2</sup>
- Café: 1 space per 10m<sup>2</sup>

With reference to the parking rates provided in the MRP DCP, **Table 3** details the parking requirement of the overall Proposal.

<b>TABLE 3: PARKING REQUIREMENTS</b>			
Use	Gross Floor Area	MRP DCP Requirement	Provision
Warehouse GFA (m <sup>2</sup> )	64,725	216	266
Office GFA (m <sup>2</sup> )	1,350	34	
Dock Office GFA (m <sup>2</sup> )	266	7	
<b>Total</b>	<b>66,610</b>	<b>257</b>	<b>266</b>

As shown in Table 3, the car parking provision for the Proposal complies with the requirements of the MRP DCP.

## 5.2 Accessible Parking

The AIE DCP provides the following in regard to accessible parking:

*Disability (Access to Premises – Buildings) Standards 2010, Building Code of Australia.*

Accessible parking for industrial developments is to be provided at a rate of:

- 1 space for every 100 car parking spaces or part thereof

In this regard, 1 accessible parking space are to be provided per every 100 carparking spaces; therefore, providing compliance with the Disability (Access to Premises – Buildings) Standards 2010 from the BCA, as well as the accessible parking requirements provided in Appendix B of AS 2890.6.

Therefore, 3 accessible parking spaces are to be provided for the Proposal. It is expected that this would form a Condition of Consent relating to any approval.

## 5.3 Electric Vehicle parking

Section 4.6.1(8) of the MRP DCP notes the following:

---

*Parking areas should incorporate dedicated parking bays for electric vehicle charging*

---

However, it does not provide for guidance on the specific number of bays. Therefore, it is proposed to provide 2 electric vehicle charging bays.

## 5.4 Bicycle Parking and End of Trip Facilities

Bicycle parking rates from the MRP DCP have been adopted to assess the parking requirements of the Proposal. The AIE DCP provides the following in regard to bicycle parking:

---

*8. Consideration is to be given to the delivery of infrastructure and / or the implementation of management measures that encourage the use of alternative forms of transport, which could include:*

- a. Safe storage/parking areas for bicycle facilities.*
  - b. Shower and change room facilities for staff.*
- 

In this regard, the MRP DCP provides for the following requirements.

**TABLE 4: BICYCLE PARKING & EOTF REQUIREMENTS**

Type	Land Use	Requirements
Bicycle Parking	Warehouse	1 space per 1000m <sup>2</sup> of gross floor area of industrial activities (over 2000m <sup>2</sup> gross floor area)
	Office	1 space per 600m <sup>2</sup> of gross floor area of office and retail space (over 1200m <sup>2</sup> gross floor area)
End of Trip Facilities	Warehouse	For industrial activities with a gross floor area over 4000m <sup>2</sup> , at least 1 shower cubicle with ancillary change rooms
	Office	For ancillary office and retail space with a gross floor area over 2500m <sup>2</sup> , at least 1 shower cubicle with ancillary change rooms

Based on the above, the Proposal provides for at least:

- 67 bicycle spaces; and
- Shower room, with change facilities.

# 6 Traffic Impact Assessment

## 6.1 Trip Rates

To determine the traffic generation potential of the Proposal, reference is made to the traffic generation rates adopted in the Ason TMAP under the approved development (SSD 10448). In this regard, the relevant rates, are as follows:

- AM Road Network Peak 0.23 vph per 100m<sup>2</sup> GFA
- PM Road Network Peak 0.24 vph per 100m<sup>2</sup> GFA
- Daily: 2.91 daily vehicle trips per 100m<sup>2</sup> GFA

## 6.2 Concept Masterplan Traffic Generation

The traffic generation assessed as part of the originally approved Concept Masterplan, as well as the most recently assessed MOD-3 Proposal is provided below. As shown, the forecast traffic generation is expected to decrease from that originally assessed by the Ason TMAP and the Ason RFI.

Note that this is a direct result of the known tenant information for Warehouse 1 (assessed under SSD-10448-MOD-2) being less than application of the above trip rates would suggest. Recognising only a minor change in the GFA between the original approval and MOD-3, application of the above trip rate would result in almost identical traffic generation.

TABLE 5: MASTERPLAN TRAFFIC GENERATION			
Masterplan	SSD-10448	MOD-3	Difference
GFA	248,112	247,844	-268
Morning Peak Hour Trips (veh/ hr)	570	509 <sup>Note 2</sup>	-61
Evening Peak Hour Trips (veh/ hr)	595	531 <sup>Note 2</sup>	-64
Daily trips (veh)	7,217	6,603	-614

Note 1: Inclusive of dock office GFA

Note 2: Includes Warehouse 1 generation on the basis of the first principles assessment, with the remainder of the Site adopting the approved trip rates for SSD 10448 as per the Ason TMAP

In regard to Warehouse 9, the MOD-3 Masterplan provides for a GFA of 66,341m<sup>2</sup> GFA. This equates to the following vehicle trips:

- 153 vph in the AM peak
- 160 vph in PM peak; and
- 1,931 vehicles per day.

The above vehicle trips establishes the acceptable traffic generation threshold in which to assess the detailed Proposal against.

## 6.3 Warehouse 9 Traffic Generation

### 6.3.1 Comparative Assessment – Approved Concept Masterplan

The Proposal provides for a GFA consistent with the GFA under the MOD-3 Masterplan and, as such, the traffic generation will remain consistent. The daily break of this operational traffic generation associated with the Proposal is provided in **Appendix B**.

The Ason TMAP provided for a detailed assessment of the traffic impacts associated with the whole Masterplan, and were mitigated accordingly through the provision of a signalised access at the intersection of Road 01 and Mamre Road.

The Ason TMAP and Ason RFI found that the key intersection of Mamre Road / Road 01 would operate at satisfactory levels of service under the approved development. The relevant SIDRA analysis detailed in the Ason RFI is provided as Appendix A.

Noting that the Proposal is entirely consistent with the approved MOD-3 Masterplan; no further assessment or mitigation is required to be necessary. As such, it is concluded that the development is acceptable from a traffic impact perspective.

Finally, as already noted, the traffic generation assessed for the originally approved Concept Masterplan forms the acceptable traffic generation threshold for the AIE. On the basis of the current development proposal, **Table 6** provides the remaining traffic generation balance for future developments.

<b>TABLE 6: TRAFFIC GENERATION COMPARISON</b>				
<b>Development</b>	<b>GFA <sup>Note 2</sup></b>	<b>AM Peak</b>	<b>PM Peak</b>	<b>Daily</b>
<b>Approved Masterplan (SSD-10448)</b>	247,990	570	595	7,217
<b>Stage 1 <sup>Note 1</sup></b>	(-) 55,421	(-) 67	(-) 69	(-) 707
<b>Warehouse 9</b>	(-) 66,341	(-)153	(-) 160	(-) 1,931
<b>Remaining Balance</b>	<b>126,228</b>	<b>350</b>	<b>366</b>	<b>4,579</b>

*Note 1: Assessed as part of SSD-10448-MOD-2*

*Note 2: Excludes GFA associated with café as it is anticipated trips would be linked to warehouse uses*

Excluding the Stage 1 development, as well as the Proposal, 50% of the overall GFA remains within the level approved under SSD-10448. However, 60% of the overall traffic generation balance remains once the Stage 1 and Proposal have been considered.

### 6.3.2 First Principles Assessment

Regardless of the above, it is noted that the end occupier for the Proposal is currently known. As such, more detailed assessment of the traffic generation has been undertaken on the basis of the information provided by the occupier.

The following information and assumptions for the operation of the Proposal have been adopted in the first principles trip generation assessment. The following information has been provided by the tenant who currently operates other sites and is based on their specific operational requirements:

- Warehouse hours: 24 hours, 7 days a week. Warehouse staff and shifts are to be as follows:
  - Shift 1 – 6:00am - 2:00pm, with 50 warehouse staff and 100 drivers (working between 5:00am and 8:00am)
  - Shift 2 – 2:00pm - 10:00pm, with 2 warehouse staff
  - Shift 3 – 10:00pm - 6:00am, with 5 warehouse staff
  - Shift 1 would be slightly staggered, so not all staff arrive / depart in the 10-15 minutes before and after shift.
  - As such, it is evident that the warehouse staff travelling during the road network peak hours relate to the on-site drivers departing after 8:00am (being 100 trips).
- Office hours: 8:00am - 6:00pm, with 35 staff and 6:00pm - 3:00am, with 5 staff. It is noted that the peak hour travel for office staff (being before 8:00am) would not coincide with the peak for warehouse staff.

As such, the light vehicle traffic generation associated with the Proposal would be **100 veh/hr** in the AM road network peak and **35 veh/hr** in the PM road network peak.

- The end occupier requires a total of 30 heavy vehicles per day, with 3 b-doubles and the remainder being vehicle smaller than a 20m Articulated Vehicle.
- Assuming a conservative scenario where the 30 trucks travel to and from the Site during a 10-hour period, the Proposal could generate 6 veh/ hr (being 3 inbound and 3 outbound movements).

As such, there would be a **maximum of 6 heavy vehicle movements** during the morning and afternoon peak hours.

Based on the above, the trip generation based on the prospective occupancy yields the following:

- AM Peak Hour                                    106 veh/hr (100 light vehicles and 6 heavy vehicles);
- PM Peak Hour                                    41 veh/hr (35 light vehicles and 6 heavy vehicles; and
- Daily                                                490 vehicle trips (430 light vehicle trips and 60 heavy vehicle trips).

**Table 7** summarises the traffic generation for Proposal on the basis of the occupier operational information and compares it against the traffic generation on the basis of the trip rate adopted; as well as that assumed for the approved MOD-3 Concept Plan. As shown, on the basis of the operational information, it is anticipated that the traffic associated with Warehouse 9 is anticipated to be significantly less than envisaged by the MOD-2 assessment.

TABLE 7: TRAFFIC GENERATION COMPARISON				
Scenario		AM Peak	PM Peak	Daily
WH9 Modification 3	66,341	153	160	1,931
WH9 Proposal – MRP Trip Rates		153	160	1,931
WH9 Proposal – First Principles Assessment		106	41	490

## 6.4 Traffic Impact Summary

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The Ason TMAP and Ason RFI found that the key intersection of Mamre Road / Road 01 would operate at satisfactory levels of service under the approved development. Further, the Ason MOD-3 TS found that the modified MOD-3 Masterplan was consistent with the traffic impacts of the approved Concept Masterplan.

The GFA for the Warehouse 9 Proposal is entirely consistent with that envisaged under the approved Concept Masterplan, as such the traffic generation assessed and accepted under the MOD-3 Masterplan also remains consistent (when considered against adoption of the trip rates detailed in the Ason TMAP).

Further, on the basis of the operational requirements of the future occupier, the traffic generation of the Proposal in the peak hours is anticipated to be 31-74% less than that forecast under the approved MOD-3 Masterplan. Therefore, it is concluded that the development remains supportable on traffic planning grounds.

# 7 Design Review

## 7.1 Relevant Design Standards

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The Site's access, car park and service areas should be designed to comply with the following relevant Australian Standards:

- AS2890.1:2004 for Car parking areas;
- AS2890.2:2018 for Commercial vehicle loading areas;
- AS2890.6:2009 for Accessible (disabled) parking.

It is expected that any detailed construction drawings in relation to the car park or site access would comply with these standards and would form a standard Condition of Consent further to approval.

## 7.2 Design Vehicle

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A 30m A-double (i.e., 30m Performance Based Standards (PBS) Level 2 Type B vehicle) has been adopted as the design vehicle for site access and circulation. 20m Articulated Vehicles are generally adopted for loading dock parking, with smaller vehicles identified as required.

## 7.3 Vehicle Access, Internal Circulation, and Parking

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In regard to the proposed design, the following is notable:

- All access driveways (to the internal road network) are to be designed with reference to AS2890.1:2004, AS2890.2:2018 and the MRP DCP, with service driveways to provide for vehicles up to and including a 30m PBS 2B vehicle.
- Swept path analysis demonstrates that the necessary manoeuvres can be accommodated by the design. The circulation areas for commercial (heavy) vehicles have been designed having regard for the requirements of AS2890.2:2018 (see **Appendix C**).
- Any minor modifications conducted at the detailed design stage, prior to Construction Certificate works, will need to be in compliance with AS2890.1:2004, AS2890.2:2018 and the MRP DCP.
- All staff and employee parking access and modules are generally provided in accordance with AS2890.1:2004 for Class 1A users, which requires a minimum space length of 5.4m, a minimum width of 2.4m and a minimum aisle width of 5.8m. Accessible parking space are to be designed in accordance with AS2890.6:2009.

# 8 Summary and Conclusions

## 8.1 Summary

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In summary:

- The Proposal generally seeks a detailed development approval for Warehouse 9 of the approved Aspect Industrial Estate (AIE) Concept Masterplan.
- The AIE Site is currently subject to an approved Concept Masterplan by way of State Significant Development 10448, with the GFA of the Proposal consistent with this Concept Masterplan approval.
- The car parking provision for the Proposal complies with the accepted methodology detailed in the Ason TMAP, which requires a total of 257 spaces to service Warehouse 9.
- The Proposal provides for 266 parking spaces and therefore exceeds these requirements. As such, the development remains supportable on parking grounds and would satisfy the parking demands of Warehouse 9.
- Application of the traffic generation rates detailed in the Ason TMAP to the Proposal results in a traffic generation potential of 153 veh/hr and 160 veh/hr in the AM and PM Peak hours respectively. This traffic generation is entirely consistent with the permissible threshold set by the Ason MOD-3 TS, which supported the approved MOD-3 Masterplan under SSD-10448.

It is therefore concluded that the development is acceptable on traffic planning grounds.

- In relation to the internal configuration of the Site which includes light, heavy and emergency vehicular access, car parking and servicing areas will be designed in accordance with the relevant Australian Standards series.
- It is expected that any detailed construction drawings in relation to any modified areas of the car park or site access would comply with the relevant standards.
- Furthermore, compliance with the above standards would be expected to form a standard condition of consent to any development approval.

## 8.2 Conclusions

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With regard for the above key findings, the Proposal is supportable on traffic and transport planning grounds; with no material impacts to the external road network expected over and above the previously approved development. Accordingly, it is concluded that the design is supported, and the Proposal remains consistent with parking, traffic, and design conclusions of the Concept Masterplan.

# Appendix A. Ason RFI Modelling Assessment

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Sydney, NSW 2000  
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## RE: Aspect Industrial Estate, Mamre Road – Request for Further Information

Dear Russell,

The modelling assessment as requested by Transport for New South Wales (TfNSW) in relation to SSD-10448 has been undertaken, with the results summarised below. Further, the Transport & Accessibility Plan has also been updated and is attached to this letter.

The modelling assessment to be undertaken, as requested by TfNSW is as follows:

1. *Revised SIDRA intersection modelling for the Mamre Road / Aspect Access Road intersection for the 2026, 2031 and 2036 horizon year assuming:*
  - a. *Stage 1 DA (Lots 1 & 3)*
  - b. *Full masterplan for Aspect Industrial Estate*
2. *Only approved developments are to be included in the model.*

### Modelling Assessment

The following baseline information has been included in the assessment:

- Noting the current restrictions placed on movement of people as a result of the COVID-19 pandemic, 2018 survey data has been referred to.
- A growth rate of 3% has been applied to the baseline traffic flows to establish the future years.
- The only approved development which would impact flows through the intersection relate to the Kemps Creek Warehouse, Logistics and Industrial Facilities Hub (SSD-9522), which has detailed approval for 166,225m<sup>2</sup> GFA, and a traffic generation of 411 veh/hr in the AM peak and 303 veh/hr in the PM peak.
- Noting that the intersection will ultimately be subject to future capacity to accommodate the traffic associated with growth and the wider MRP itself, the interim intersection to be delivered by Mirvac has been adopted for all assessment years.
- The current Concept Plan has a GFA of 246,625m<sup>2</sup>. This GFA, has been adopted for assessment of all years, noting the Stage 1 has a GFA of 59,640m<sup>2</sup>.
- All other assumptions remain as previously documented (trips rates, distribution, etc.).

The results are summarised in Table 1, with the SIDRA outputs provided as **Attachment 1**.

**TABLE 1: MAMRE ROAD & AIE ACCESS INTERSECTION OPERATIONS**

Heading	Peak Period	Delay (s)	Level of Service	Degree of Saturation
2026	AM	17.8	B	0.57
	PM	17.2	B	0.63
2031	AM	18.5	B	0.62
	PM	18.3	B	0.68
2036	AM	18.6	B	0.65
	PM	23.8	B	0.75

With reference to the above, the SIDRA analysis indicates that the proposed intersection can accommodate the traffic generation associated with 100% of the traffic associated with Masterplan

### Other Comments

Further to the above, TfNSW also provided the following in regard to the TMAP:

*It is noted that in the Interim drawing Turning path plans for the test vehicle of 36.5m PBS Level 3 type A vehicles are provided but TMAP report doesn't have any turning path for the test vehicle accessing the warehouse to and from the access road 1.*

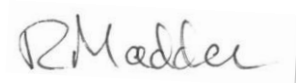
The warehouse developments have been designed to accommodate 26m b-double vehicles. The roads have been tested with a 36.5m PBS Level 3 type as this is the requirement provided within Section 3.4 of the Draft Mamre Road Precinct Development Control Plan (DCP). Driveways are only to be designed for sites that specifically need to accommodate a 36.5m PBS Level 3 type vehicle (as per 4.7.3 of the Draft DCP).

Further, Table 13 of the Draft DCP requires a design vehicle of up to a 26m b-double vehicle for industrial developments. The assessment of the 30m A-double has been undertaken in response to comments received.

As there is no current requirement operationally to accommodate a PBS Level 3 type vehicle within the Site, it has not been designed as such. Nevertheless, swept paths for Stage 1 (**Attachment 2**) have been undertaken to demonstrate that, should a future tenant require larger vehicles, they could be accommodated by the driveways, subject to some minor modifications. Any detailed requirements such as this would be subject to a different assessment process.

I trust this satisfies your requirements at this stage. Should you have any queries, please contact the undersigned.

Yours sincerely,



**Rebecca Butler-Madden**

Senior Transport Planner

E: [rebecca.bmadden@asongroup.com.au](mailto:rebecca.bmadden@asongroup.com.au)

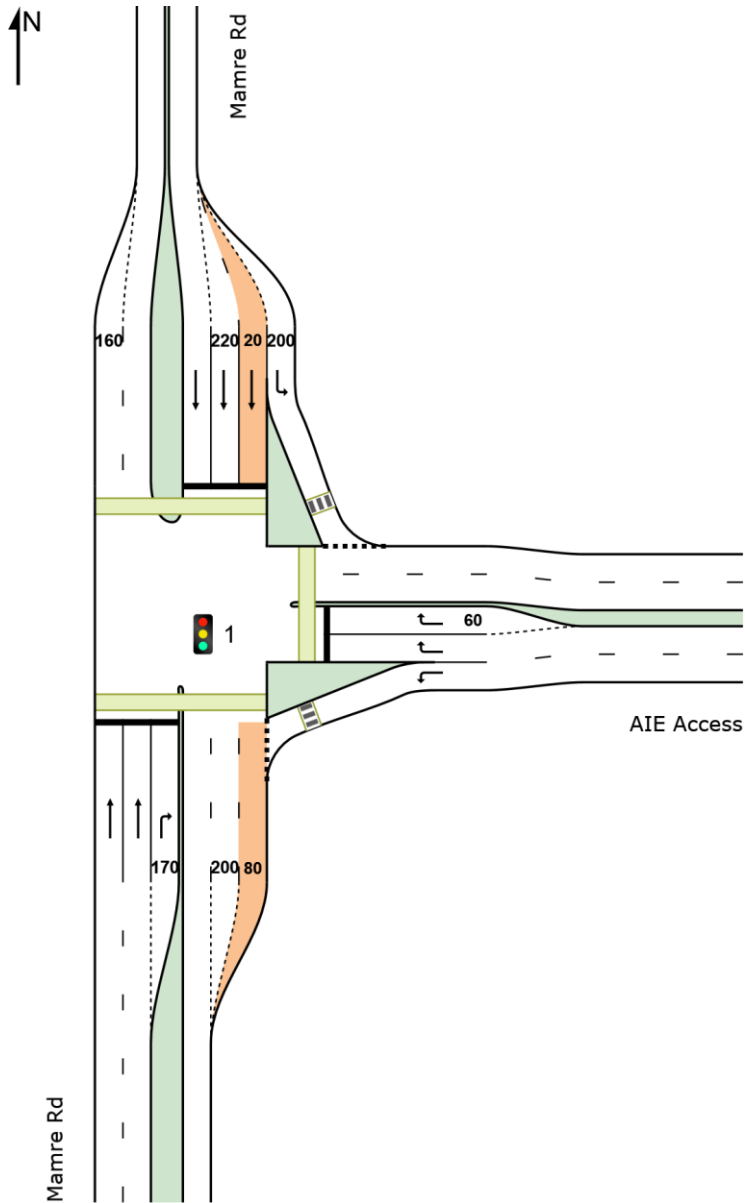
# Attachment 1

# SITE LAYOUT

## Site: 1 Mamre x AIE

Mamre Road x Aspect Industrial Estate Access  
Site Category: Proposed Interim  
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



# MOVEMENT SUMMARY

## Site: 1 [Mamre x AIE - 2026 AM (Site Folder: 2026 Base + Dev)]

Mamre Road x Aspect Industrial Estate Access

Site Category: Proposed Interim

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site Optimum Cycle Time - Minimum Delay)

### Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h ]	[ HV veh/h ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist m ]				
South: Mamre Rd														
2	T1	1078	143	1135	13.3	0.459	7.6	LOS A	12.0	93.9	0.44	0.40	0.44	62.8
3	R2	199	60	209	30.2	* 0.565	43.8	LOS D	9.2	81.1	0.93	0.82	0.93	34.4
Approach		1277	203	1344	15.9	0.565	13.2	LOS A	12.0	93.9	0.52	0.46	0.52	55.6
East: AIE Access														
4	L2	86	26	91	30.2	0.113	10.9	LOS A	1.2	10.3	0.34	0.60	0.34	44.7
6	R2	86	26	91	30.2	* 0.237	49.9	LOS D	2.2	19.1	0.93	0.74	0.93	30.1
Approach		172	52	181	30.2	0.237	30.4	LOS C	2.2	19.1	0.64	0.67	0.64	36.0
North: Mamre Rd														
7	L2	199	60	209	30.2	0.183	9.2	LOS A	2.1	18.5	0.29	0.65	0.29	51.1
8	T1	803	148	845	18.4	* 0.570	24.5	LOS B	15.7	127.0	0.82	0.72	0.82	48.2
Approach		1002	208	1055	20.8	0.570	21.5	LOS B	15.7	127.0	0.71	0.70	0.71	48.7
All Vehicles		2451	463	2580	18.9	0.570	17.8	LOS B	15.7	127.0	0.61	0.58	0.61	50.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

\* Critical Movement (Signal Timing)

### Pedestrian Movement Performance

Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[ Ped ped ]	[ Dist m ]					
South: Mamre Rd												
P1	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	216.2	223.5	1.03
East: AIE Access												
P2	Full	50	53	23.9	LOS C	0.1	0.1	0.69	0.69	190.4	216.5	1.14
North: Mamre Rd												
P3	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	216.2	223.5	1.03
All Pedestrians		150	158	37.5	LOS D	0.1	0.1	0.86	0.86	207.6	221.2	1.07

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

# MOVEMENT SUMMARY

**Site: 1 [Mamre x AIE - 2026 PM (Site Folder: 2026 Base + Dev)]**

Mamre Road x Aspect Industrial Estate Access

Site Category: Proposed Interim

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Optimum Cycle Time - Minimum Delay)

## Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h	HV ] veh/h	[ Total veh/h	HV ] %				[ Veh. veh	Dist ] m				
South: Mamre Rd														
2	T1	877	114	923	13.0	0.383	7.0	LOS A	8.7	67.4	0.43	0.38	0.43	63.1
3	R2	89	27	94	30.3	* 0.607	52.2	LOS D	4.3	37.6	1.00	0.81	1.07	31.9
Approach		966	141	1017	14.6	0.607	11.2	LOS A	8.7	67.4	0.49	0.42	0.49	57.9
East: AIE Access														
4	L2	207	62	218	30.0	0.347	17.6	LOS B	4.1	36.4	0.53	0.68	0.53	43.2
6	R2	207	62	218	30.0	* 0.513	46.1	LOS D	4.9	42.9	0.97	0.78	0.97	31.0
Approach		414	124	436	30.0	0.513	31.8	LOS C	4.9	42.9	0.75	0.73	0.75	36.1
North: Mamre Rd														
7	L2	89	27	94	30.3	0.074	8.1	LOS A	0.5	4.8	0.21	0.62	0.21	51.9
8	T1	1154	160	1215	13.9	* 0.628	18.1	LOS B	18.6	145.8	0.76	0.68	0.76	53.8
Approach		1243	187	1308	15.0	0.628	17.3	LOS B	18.6	145.8	0.72	0.67	0.72	53.7
All Vehicles		2623	452	2761	17.2	0.628	17.4	LOS B	18.6	145.8	0.64	0.59	0.64	51.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

\* Critical Movement (Signal Timing)

## Pedestrian Movement Performance

Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[ Ped ped	Dist ] m					
South: Mamre Rd												
P1	Full	50	53	39.3	LOS D	0.1	0.1	0.94	0.94	211.2	223.5	1.06
East: AIE Access												
P2	Full	50	53	15.6	LOS B	0.1	0.1	0.59	0.59	182.2	216.5	1.19
North: Mamre Rd												
P3	Full	50	53	39.3	LOS D	0.1	0.1	0.94	0.94	211.2	223.5	1.06
All Pedestrians		150	158	31.4	LOS D	0.1	0.1	0.82	0.82	201.5	221.2	1.10

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

# MOVEMENT SUMMARY

**Site: 1 [Mamre x AIE - 2031 AM (Site Folder: 2031 Base + Dev)]**

Mamre Road x Aspect Industrial Estate Access

Site Category: Proposed Interim

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site Optimum Cycle Time - Minimum Delay)

## Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h	HV ] veh/h	[ Total veh/h	HV ] %				[ Veh. veh	Dist ] m				
South: Mamre Rd														
2	T1	1248	208	1314	16.7	0.542	9.0	LOS A	15.3	122.7	0.48	0.44	0.48	62.2
3	R2	214	60	225	28.0	0.626*	45.2	LOS D	10.1	88.1	0.95	0.83	0.95	34.0
Approach		1462	268	1539	18.3	0.626	14.3	LOS A	15.3	122.7	0.55	0.50	0.55	55.4
East: AIE Access														
4	L2	86	26	91	30.2	0.118	12.1	LOS A	1.3	11.2	0.37	0.60	0.37	44.4
6	R2	86	26	91	30.2	0.237*	50.8	LOS D	2.2	19.1	0.93	0.74	0.93	30.1
Approach		172	52	181	30.2	0.237	31.4	LOS C	2.2	19.1	0.65	0.67	0.65	35.8
North: Mamre Rd														
7	L2	199	60	209	30.2	0.184	9.5	LOS A	2.2	19.6	0.30	0.66	0.30	50.9
8	T1	895	165	942	18.4	0.621*	24.8	LOS B	17.8	144.3	0.83	0.74	0.83	48.1
Approach		1094	225	1152	20.6	0.621	22.0	LOS B	17.8	144.3	0.74	0.72	0.74	48.6
All Vehicles		2728	545	2872	20.0	0.626	18.5	LOS B	17.8	144.3	0.63	0.60	0.63	50.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

\* Critical Movement (Signal Timing)

## Pedestrian Movement Performance

Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[ Ped ped	Dist ] m					
South: Mamre Rd												
P1	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	216.2	223.5	1.03
East: AIE Access												
P2	Full	50	53	23.2	LOS C	0.1	0.1	0.68	0.68	189.7	216.5	1.14
North: Mamre Rd												
P3	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	216.2	223.5	1.03
All Pedestrians		150	158	37.2	LOS D	0.1	0.1	0.86	0.86	207.4	221.2	1.07

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

# MOVEMENT SUMMARY

**Site: 1 [Mamre x AIE - 2031 PM (Site Folder: 2031 Base + Dev)]**

Mamre Road x Aspect Industrial Estate Access

Site Category: Proposed Interim

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Optimum Cycle Time - Minimum Delay)

## Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h ]	[ HV veh/h ]	[ Total veh/h ]	[ HV % ]				[ Veh. veh ]	[ Dist m ]				
South: Mamre Rd														
2	T1	978	126	1029	12.9	0.427	7.6	LOS A	10.1	78.5	0.45	0.40	0.45	62.8
3	R2	89	27	94	30.3	* 0.683	54.4	LOS D	4.4	38.8	1.00	0.84	1.16	31.3
Approach		1067	153	1123	14.3	0.683	11.5	LOS A	10.1	78.5	0.50	0.44	0.51	57.9
East: AIE Access														
4	L2	207	62	218	30.0	0.368	22.2	LOS B	4.7	41.1	0.58	0.70	0.58	42.4
6	R2	207	62	218	30.0	* 0.513	46.4	LOS D	4.9	42.9	0.97	0.78	0.97	31.0
Approach		414	124	436	30.0	0.513	34.3	LOS C	4.9	42.9	0.77	0.74	0.77	35.8
North: Mamre Rd														
7	L2	89	27	94	30.3	0.074	8.1	LOS A	0.5	4.8	0.21	0.62	0.21	51.9
8	T1	1284	176	1352	13.7	* 0.684	19.6	LOS B	21.5	167.6	0.78	0.71	0.78	53.7
Approach		1373	203	1445	14.8	0.684	18.8	LOS B	21.5	167.6	0.75	0.70	0.75	53.6
All Vehicles		2854	480	3004	16.8	0.684	18.3	LOS B	21.5	167.6	0.66	0.61	0.66	51.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

\* Critical Movement (Signal Timing)

## Pedestrian Movement Performance

Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[ Ped ped ]	[ Dist m ]					
South: Mamre Rd												
P1	Full	50	53	39.3	LOS D	0.1	0.1	0.94	0.94	211.2	223.5	1.06
East: AIE Access												
P2	Full	50	53	15.1	LOS B	0.1	0.1	0.58	0.58	181.6	216.5	1.19
North: Mamre Rd												
P3	Full	50	53	39.3	LOS D	0.1	0.1	0.94	0.94	211.2	223.5	1.06
All Pedestrians		150	158	31.2	LOS D	0.1	0.1	0.82	0.82	201.3	221.2	1.10

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

# MOVEMENT SUMMARY

 **Site: 1 [Mamre x AIE - 2036 AM (Site Folder: 2036 Base + Dev)]**

Mamre Road x Aspect Industrial Estate Access

Site Category: Proposed Interim

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site Optimum Cycle Time - Minimum Delay)

## Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h	HV ] veh/h	[ Total veh/h	HV ] %				[ Veh. veh	Dist ] m				
South: Mamre Rd														
2	T1	1314	170	1383	12.9	0.558	9.5	LOS A	16.5	127.9	0.49	0.45	0.49	62.0
3	R2	199	60	209	30.2	0.646*	47.3	LOS D	9.7	85.3	0.97	0.83	0.99	33.3
Approach		1513	230	1593	15.2	0.646	14.5	LOS A	16.5	127.9	0.55	0.50	0.56	55.7
East: AIE Access														
4	L2	86	26	91	30.2	0.124	13.4	LOS A	1.4	12.1	0.39	0.61	0.39	44.0
6	R2	86	26	91	30.2	0.237*	51.2	LOS D	2.2	19.1	0.93	0.74	0.93	30.1
Approach		172	52	181	30.2	0.237	32.3	LOS C	2.2	19.1	0.66	0.67	0.66	35.7
North: Mamre Rd														
7	L2	199	60	209	30.2	0.181	9.5	LOS A	2.2	19.5	0.30	0.66	0.30	50.9
8	T1	986	181	1038	18.4	0.653*	24.2	LOS B	19.7	159.1	0.84	0.74	0.84	48.7
Approach		1185	241	1247	20.3	0.653	21.7	LOS B	19.7	159.1	0.75	0.73	0.75	49.0
All Vehicles		2870	523	3021	18.2	0.653	18.6	LOS B	19.7	159.1	0.64	0.60	0.64	51.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

\* Critical Movement (Signal Timing)

## Pedestrian Movement Performance

Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[ Ped ped	Dist ] m					
South: Mamre Rd												
P1	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	216.2	223.5	1.03
East: AIE Access												
P2	Full	50	53	21.8	LOS C	0.1	0.1	0.66	0.66	188.4	216.5	1.15
North: Mamre Rd												
P3	Full	50	53	44.3	LOS E	0.1	0.1	0.94	0.94	216.2	223.5	1.03
All Pedestrians		150	158	36.8	LOS D	0.1	0.1	0.85	0.85	206.9	221.2	1.07

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

# MOVEMENT SUMMARY

**Site: 1 [Mamre x AIE - 2036 PM (Site Folder: 2036 Base + Dev)]**

Mamre Road x Aspect Industrial Estate Access

Site Category: Proposed Interim

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Optimum Cycle Time - Minimum Delay)

## Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[ Total veh/h	HV ] veh/h	[ Total veh/h	HV ] %				[ Veh. veh	Dist ] m				
South: Mamre Rd														
2	T1	1080	138	1137	12.8	0.472	8.3	LOS A	11.7	90.6	0.47	0.42	0.47	62.5
3	R2	89	27	94	30.3	* 0.683	54.4	LOS D	4.4	38.8	1.00	0.84	1.16	31.3
Approach		1169	165	1231	14.1	0.683	11.8	LOS A	11.7	90.6	0.51	0.46	0.52	58.1
East: AIE Access														
4	L2	207	62	218	30.0	0.381	41.0	LOS C	5.2	46.0	0.64	0.72	0.64	41.4
6	R2	207	62	218	30.0	* 0.513	46.9	LOS D	4.9	42.9	0.97	0.78	0.97	31.0
Approach		414	124	436	30.0	0.513	43.9	LOS D	5.2	46.0	0.80	0.75	0.80	35.5
North: Mamre Rd														
7	L2	89	27	94	30.3	0.074	8.1	LOS A	0.5	4.8	0.21	0.62	0.21	51.9
8	T1	1413	192	1487	13.6	* 0.753	28.8	LOS C	25.1	196.1	0.83	0.76	0.83	52.9
Approach		1502	219	1581	14.6	0.753	27.5	LOS B	25.1	196.1	0.80	0.75	0.80	52.8
All Vehicles		3085	508	3247	16.5	0.753	23.8	LOS B	25.1	196.1	0.69	0.64	0.69	51.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

\* Critical Movement (Signal Timing)

## Pedestrian Movement Performance

Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[ Ped ped	Dist ] m					
South: Mamre Rd												
P1	Full	50	53	39.3	LOS D	0.1	0.1	0.94	0.94	211.2	223.5	1.06
East: AIE Access												
P2	Full	50	53	15.1	LOS B	0.1	0.1	0.58	0.58	181.6	216.5	1.19
North: Mamre Rd												
P3	Full	50	53	39.3	LOS D	0.1	0.1	0.94	0.94	211.2	223.5	1.06
All Pedestrians		150	158	31.2	LOS D	0.1	0.1	0.82	0.82	201.3	221.2	1.10

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

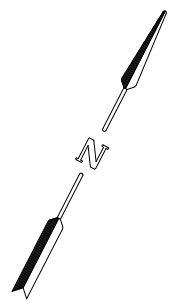
# Appendix B. Operational Traffic Flows

Warehouse 9 Traffic Generation Traffic Profile (Generic Assessment)							
Start Time	All Vehicle	Light Vehicle	Heavy Vehicle	Rigid	Semi-trailer	B-double	A-double
0:00	16	11	5	3	0	0	1
1:00	14	9	5	3	0	0	1
2:00	15	10	5	3	0	0	1
3:00	17	13	4	3	0	0	1
4:00	54	45	9	6	1	0	2
5:00	104	83	21	14	1	0	5
6:00	141	112	29	19	2	0	7
7:00	140	105	35	23	2	1	9
8:00	129	89	40	26	3	1	10
9:00	112	68	44	29	3	1	11
10:00	105	63	42	28	3	1	11
11:00	110	67	43	28	3	1	11
12:00	120	81	39	26	3	1	10
13:00	144	105	39	26	3	1	10
14:00	157	122	35	23	2	1	9
15:00	135	104	31	20	2	1	8
16:00	112	87	25	16	2	0	6
17:00	92	71	21	14	1	0	5
18:00	55	40	15	10	1	0	4
19:00	33	24	9	6	1	0	2
20:00	24	17	7	5	0	0	2
21:00	32	26	5	4	0	0	1
22:00	40	34	6	4	0	0	2
23:00	28	23	6	4	0	0	1
<b>Total</b>	<b>1,931</b>	<b>1,411</b>	<b>519</b>	<b>344</b>	<b>35</b>	<b>9</b>	<b>132</b>

Note: Minor discrepancies between sum numbers due to 'rounding'.

# Appendix C. Swept Path Analysis

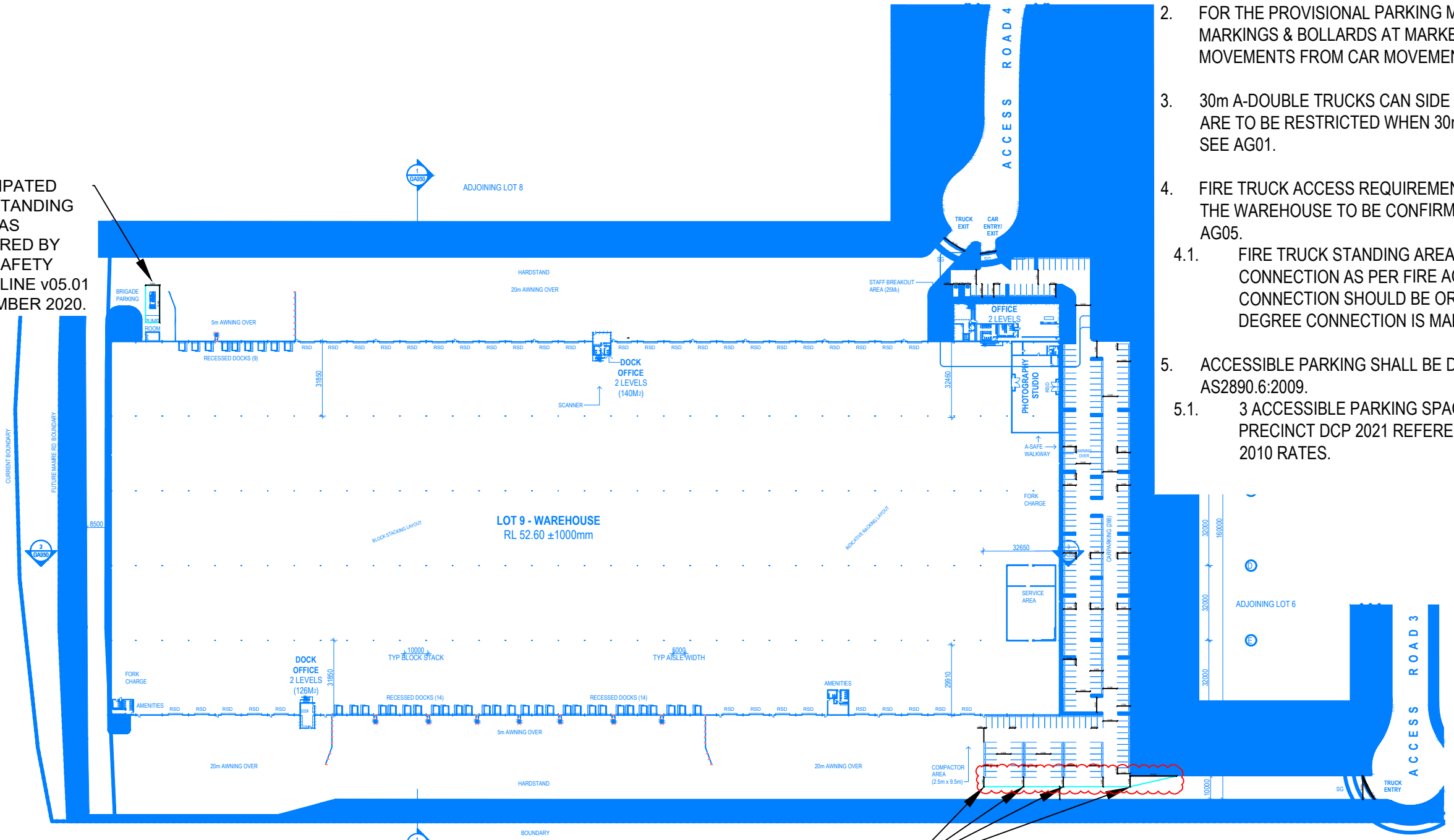
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**ANTICIPATED FIRE STANDING AREA AS REQUIRED BY FIRE SAFETY GUIDELINE v05.01 NOVEMBER 2020.**

**GENERAL NOTES:**

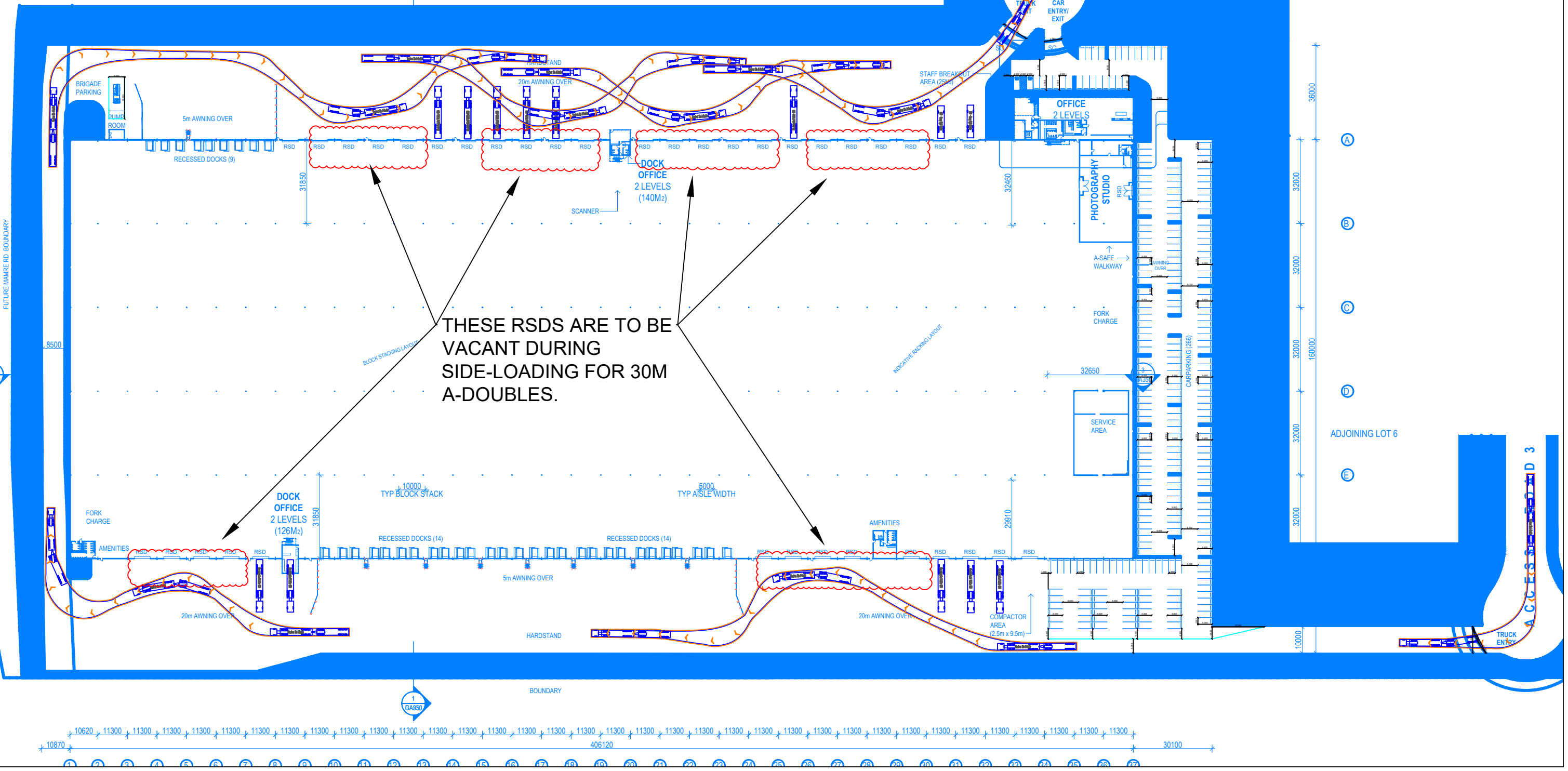
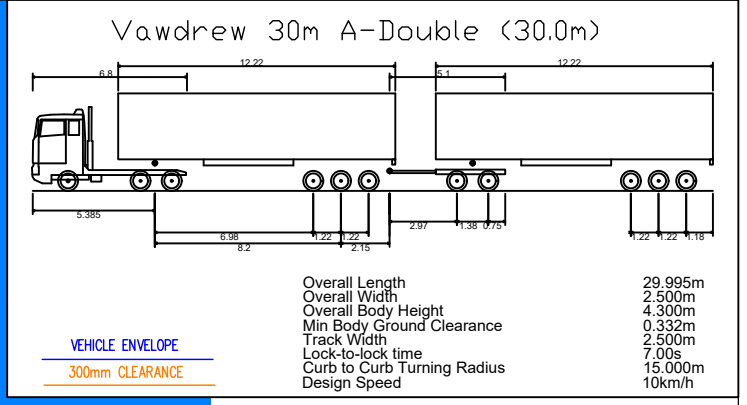
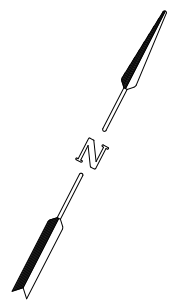
1. THE CLASS OF CAR PARKING SPACES HAS BEEN ASSESSED HAVING REGARD FOR USER CLASS 1/1A PARKING AS REQUIRED BY AS2890.1:2004.
2. FOR THE PROVISIONAL PARKING MODULE TO THE SOUTH, PROVIDE LINE MARKINGS & BOLLARDS AT MARKED POSITIONS TO SEPARATE TRUCK MOVEMENTS FROM CAR MOVEMENTS.
3. 30m A-DOUBLE TRUCKS CAN SIDE LOAD ON BOTH HARDSTANDS. SOME RSDs ARE TO BE RESTRICTED WHEN 30m A-DOUBLE TRUCKS ARE SIDE LOADING. SEE AG01.
4. FIRE TRUCK ACCESS REQUIREMENTS AROUND THE EAST PERIMETER OF THE WAREHOUSE TO BE CONFIRMED BY FIRE CONSULTANT. SEE AG04 AND AG05.
  - 4.1. FIRE TRUCK STANDING AREA NEEDS TO DETAIL BOOSTER OUTLET CONNECTION AS PER FIRE ACCESS GUIDELINES v5.01 2020. THE CONNECTION SHOULD BE ORIENTED SUCH THAT A MAXIMUM OF A 45 DEGREE CONNECTION IS MADE TO THE REAR OF THE TRUCK.
5. ACCESSIBLE PARKING SHALL BE DESIGNED IN ACCORDANCE WITH AS2890.6:2009.
  - 5.1. 3 ACCESSIBLE PARKING SPACES ARE REQUIRED AS PER MAMRE ROAD PRECINCT DCP 2021 REFERENCING ACCESS TO PREMISES STANDARDS 2010 RATES.



**LINE MARKING AND BOLLARD DETAIL TO BE CONFIRMED DURING DETAILED DESIGN STAGE PRIOR TO CONSTRUCTION CERTIFICATE.**

<b>GENERAL NOTES</b>  This drawing is provided for information purposes only and should not be used for construction. Base Plan prepared by SBA Architects, received 03.08.2022. Swept path assessments completed at 10 km/h and 300mm clearance.	DESIGNED AngelaJi	PAPER SIZE A3	CLIENT Mirvac	<b>DOCUMENT INFORMATION</b>	
	APPROVED BY R. Bulter-Madden	DATE 05.08.2022	PROJECT 1901	GENERAL ASSESSMENT  DESIGN ASSESSMENT	SHEET AG00
	SCALE 1:2000	NTS	Aspect Industrial Estate, Mamre Road Precinct	FILE NAME AG1901-01-v04 - Detailed Design.dwg	

ASION ACCEPTS NO RESPONSIBILITY FOR THE USE OF THIS DRAWING FOR ANY PURPOSES OTHER THAN THAT FOR WHICH IT WAS PREPARED. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THIS DRAWING IS PROVIDED FOR INFORMATION PURPOSES ONLY AND SHOULD NOT BE USED FOR CONSTRUCTION. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THIS DRAWING IS PROVIDED FOR INFORMATION PURPOSES ONLY AND SHOULD NOT BE USED FOR CONSTRUCTION. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.



**GENERAL NOTES**

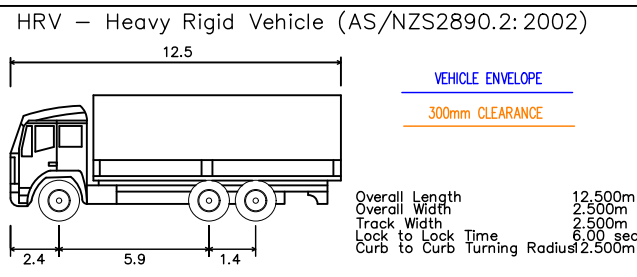
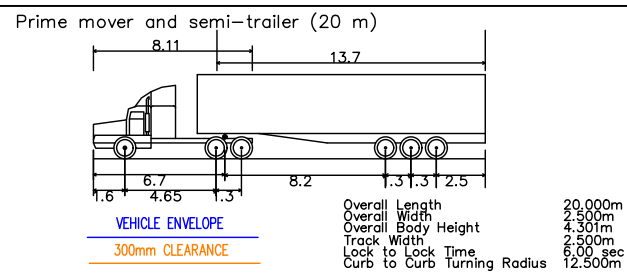
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APPROVED BY R. Bulter-Madden	DATE 05.08.2022	PROJECT 1901
SCALE 1:1500	NTS	Aspect Industrial Estate, Mamre Road Precinct

<b>DOCUMENT INFORMATION</b>	
SWEPT PATH ASSESSMENT	
30m A-DOUBLE	
FILE NAME AG1901-01-v04 - Detailed Design.dwg	SHEET AG01

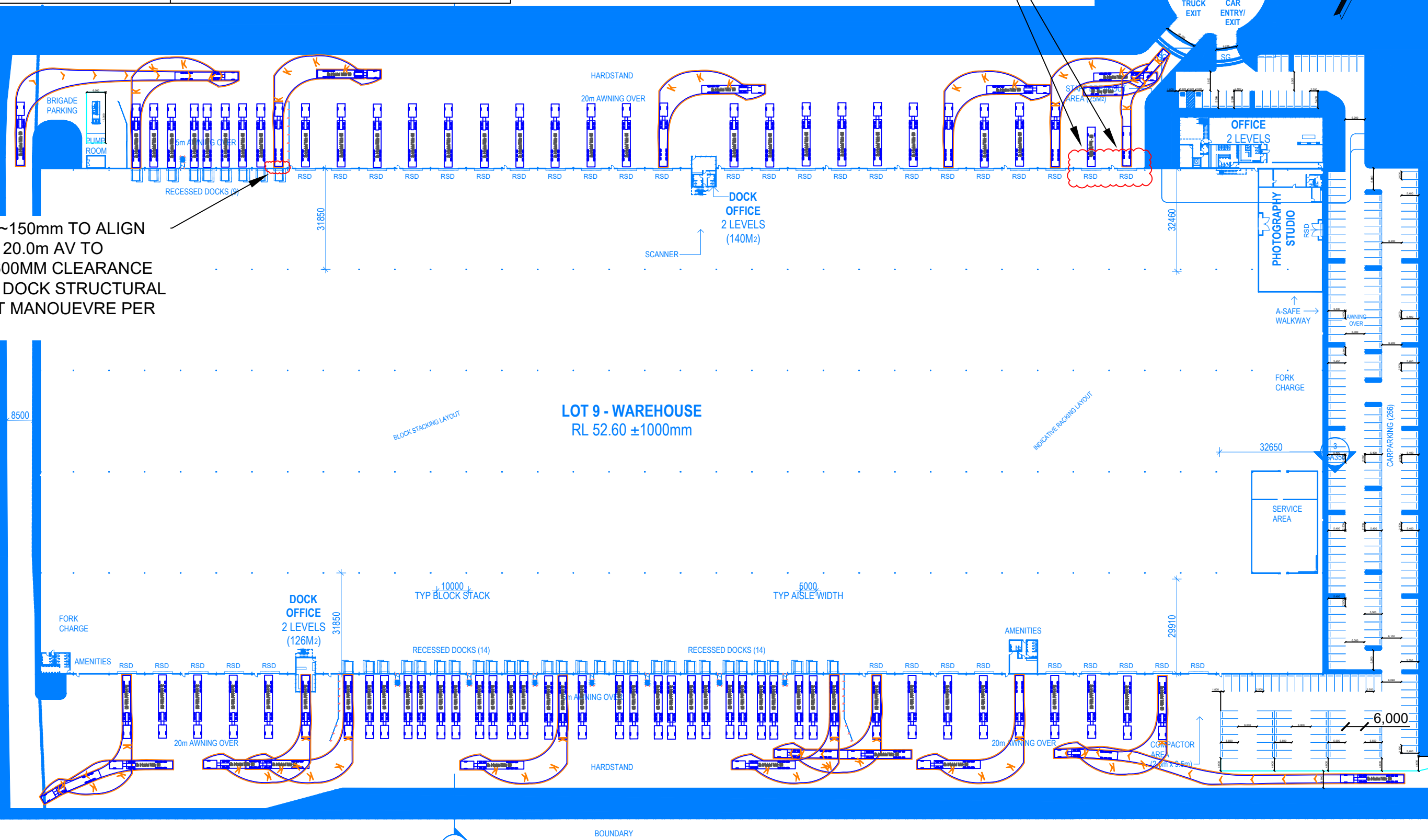
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 Sydney NSW 2000  
 info@asongroup.com.au



2 END RSDS TO BE SERVICED BY 12.5M HRVS OR SMALLER.

SHIFT RSD WEST ~150mm TO ALIGN CENTRALLY WITH 20.0m AV TO ACCOMMODATE 600MM CLEARANCE FROM RECESSED DOCK STRUCTURAL ELEMENTS IN EXIT MANOEUVRE PER AG03.



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Base Plan prepared by SBA Architects, received 03.08.2022.  
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED AngelaJi	PAPER SIZE A3	CLIENT Mirvac
APPROVED BY R. Bulter-Madden	DATE 05.08.2022	PROJECT 1901
SCALE 1:1250	NTS	Aspect Industrial Estate, Mamre Road Precinct

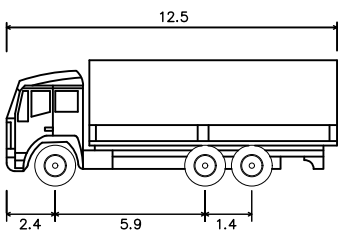
<b>DOCUMENT INFORMATION</b>	
WAREHOUSE 9 SWEEP PATH ASSESSMENT	
INTERNAL LOADING ENTRY MOVEMENT	
FILE NAME AG1901-01-v04 - Detailed Design.dwg	SHEET AG02

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HRV - Heavy Rigid Vehicle (AS/NZS2890.2:2002)

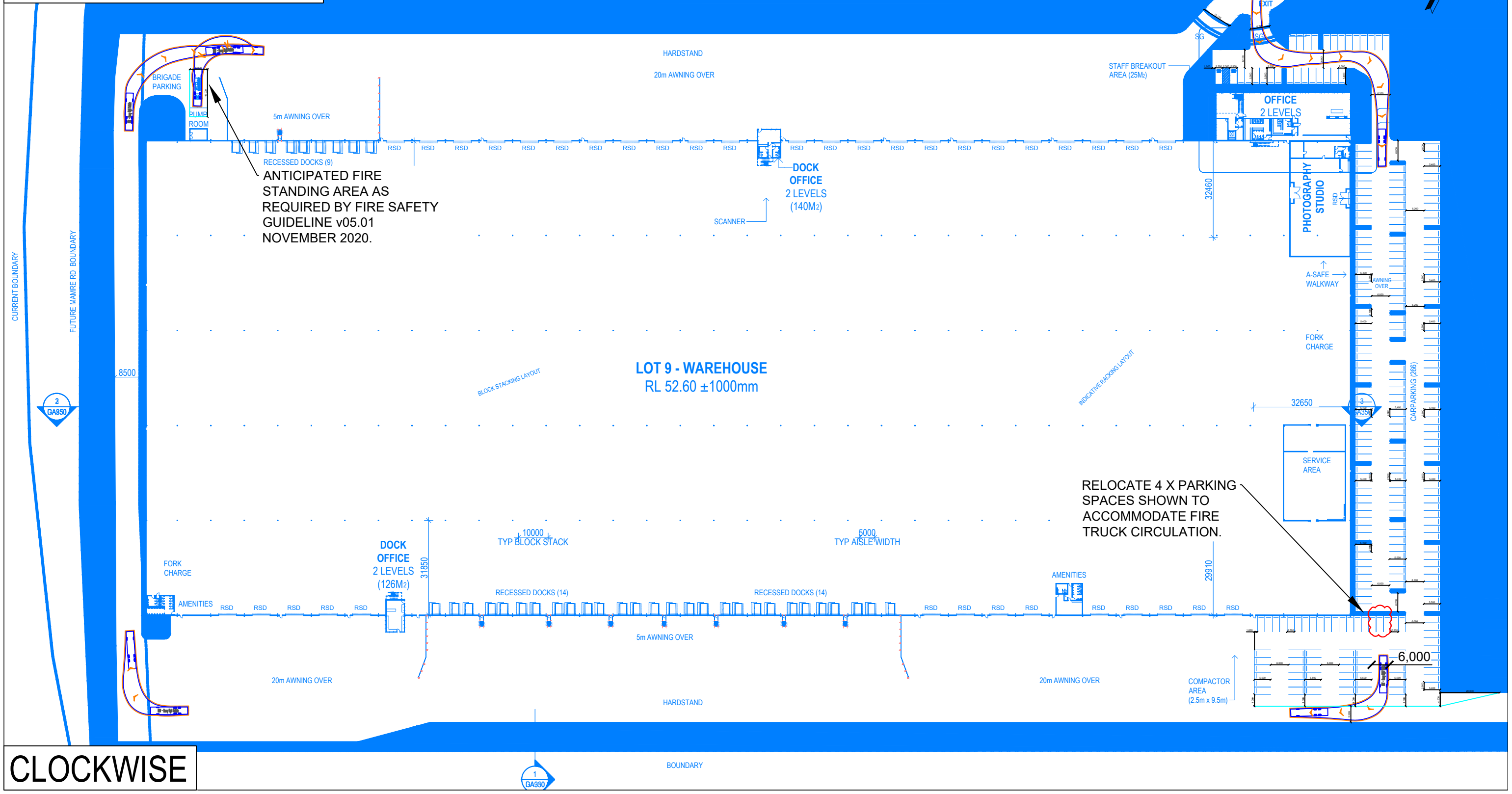


**VEHICLE ENVELOPE**  
300mm CLEARANCE

Overall Length 12.500m  
Overall Width 2.500m  
Track Width 2.500m  
Lock to Lock Time 6.00 sec  
Curb to Curb Turning Radius 2.500m



ADJOINING LOT 8



**CLOCKWISE**

**GENERAL NOTES**

This drawing is provided for information purposes only and should not be used for construction.  
Base Plan prepared by SBA Architects, received 03.08.2022.  
Swept path assessments completed at 10 km/h and 300mm clearance.

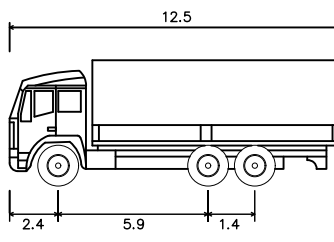
DESIGNED AngelaJi	PAPER SIZE A3	CLIENT Mirvac
APPROVED BY R. Bulter-Madden	DATE 05.08.2022	PROJECT 1901
SCALE 1:1250	NTS	Aspect Industrial Estate, Mamre Road Precinct

<b>DOCUMENT INFORMATION</b>	
FIRE TRUCK SWEEP PATH ASSESSMENT	
12.5m HRV	
FILE NAME AG1901-01-v04 - Detailed Design.dwg	SHEET AG04

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HRV - Heavy Rigid Vehicle (AS/NZS2890.2:2002)



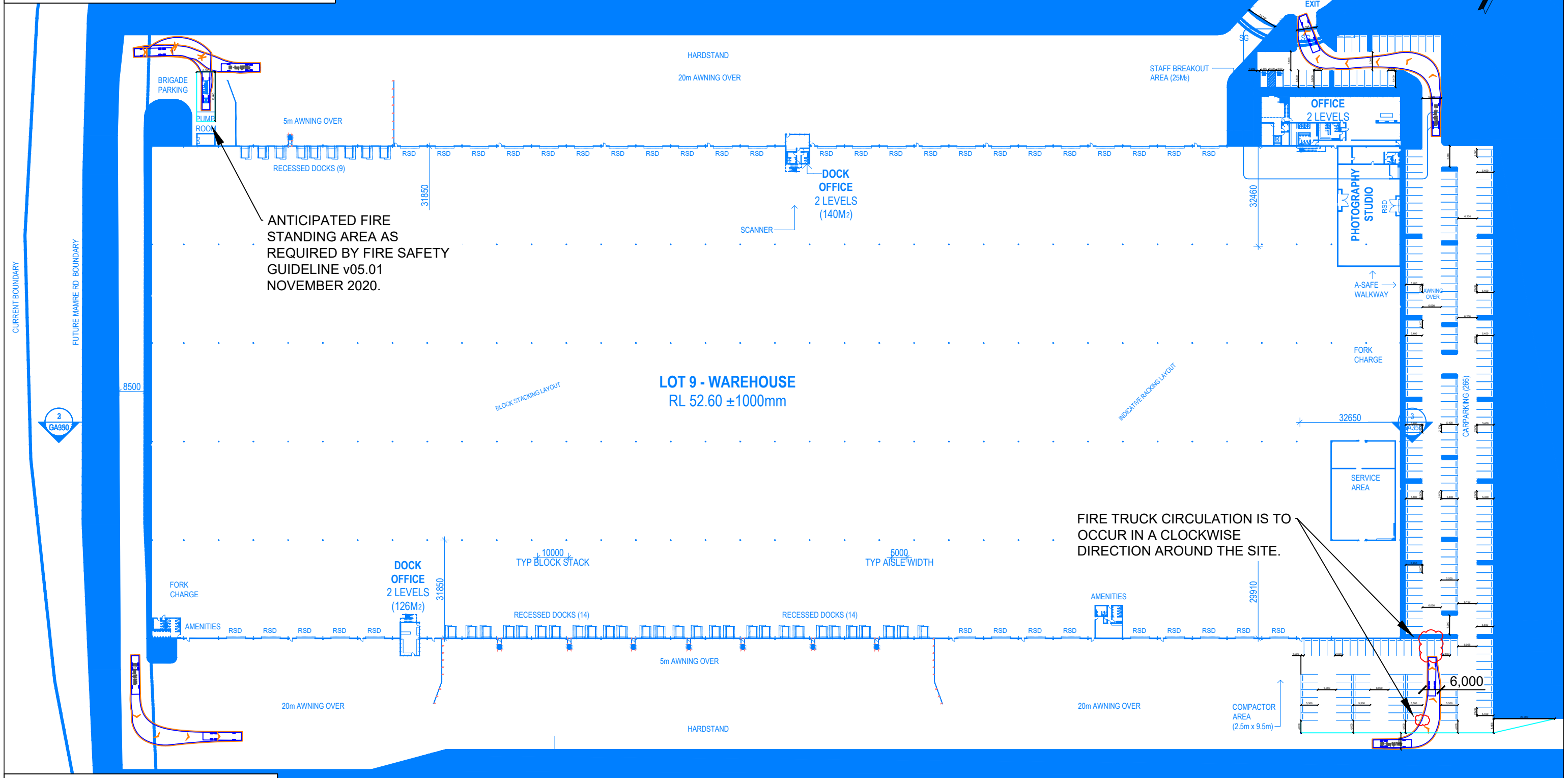
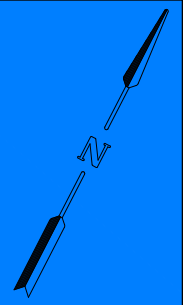
**VEHICLE ENVELOPE**  
**300mm CLEARANCE**

Overall Length 12.500m  
 Overall Width 2.500m  
 Track Width 2.500m  
 Lock to Lock Time 6.00 sec  
 Curb to Curb Turning Radius 2.500m



ADJOINING LOT 8

ACCE



ANTICIPATED FIRE STANDING AREA AS REQUIRED BY FIRE SAFETY GUIDELINE v05.01 NOVEMBER 2020.

FIRE TRUCK CIRCULATION IS TO OCCUR IN A CLOCKWISE DIRECTION AROUND THE SITE.

**ANTI-CLOCKWISE**

GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.  
 Base Plan prepared by SBA Architects, received 03.08.2022.  
 Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED AngelaJi	PAPER SIZE A3	CLIENT Mirvac
APPROVED BY R. Bulter-Madden	DATE 05.08.2022	PROJECT 1901
SCALE 1:1250	NTS	Aspect Industrial Estate, Mamre Road Precinct

DOCUMENT INFORMATION	
FIRE TRUCK SWEEP PATH ASSESSMENT	
12.5m HRV	
FILE NAME AG1901-01-v04 - Detailed Design.dwg	SHEET AG05

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# Appendix D. Preliminary CTMP

# Preliminary Construction Traffic Management Plan

Lot 54 – 58 Mamre Road, Kemps Creek

Ref: 1029r03v1  
30/07/2020

## Document Control

**Project No:** 1029

**Project:** Lot 54 – 58 Mamre Road, Kemps Creek

**Client:** Mirvac Projects Pty Ltd

**File Reference:** 1029r03v1 Draft CTMP\_Mamre Road

## Revision History

Revision	Date	Details	Author	Approved by
-	15/05/2020	Draft	V. Cheng	A. Reisch
I	29/05/2020	Final	V. Cheng A. Reisch	A. Reisch

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## Appendices

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# 1 Introduction

## 1.1 Overview

Ason Group has been engaged by Mirvac Projects (Mircac) to prepare a Draft Construction Traffic Management Plan (CTMP) in regard to the future construction of the Aspect Industrial Estate (AIE) at Lots 54 – 58 Mamre Road, Kemps Creek (the Site).

This CTMP details the proposed construction management strategies which would provide for the safe and efficient completion of the proposed works while minimising construction traffic impacts on the surrounding road network and public road network users.

From the outset, it is noted that the this CTMP is designed to be updated over time as additional details in regard to the construction proposal are revised / finalised as is standard in any major construction project, noting that all such updates would be completed in consultation with Penrith City Council (Council) in whose Local Government Area (LGA) the Site lies; and / or with the relevant authorities such as Transport for NSW (TfNSW) where special road occupancy or the like are required.

Importantly, Ason Group has been responsible for the preparation of this CTMP, which has been prepared with reference to all available information in regard to the construction program, and all relevant CTMP preparation guidelines. The implementation of the recommendations and strategies detailed in this CTMP are the strict responsibility of Mirvac and / or Mirvac's designated construction Project Manager.

## 1.2 Secretary's Environmental Assessment Requirements

Secretary's Environmental Assessment Requirements (SEARs, dated 30 April 2020) have been received from the Department of Planning, Industry & Environment (DPIE); these include general SEARs provided by DPIE, as well as more detailed SEARs provided by TfNSW, a number of which speak directly to the scope of work required in this CTMP.

A summary of the TfNSW SEARs is provided in Table 1 below; where relevant, Ason Group has provided a summary response to each SEAR, and reference to the section of this CTMP providing a more detailed assessment of each SEAR.

**Table 1: TfNSW Requirements Compliance Table**

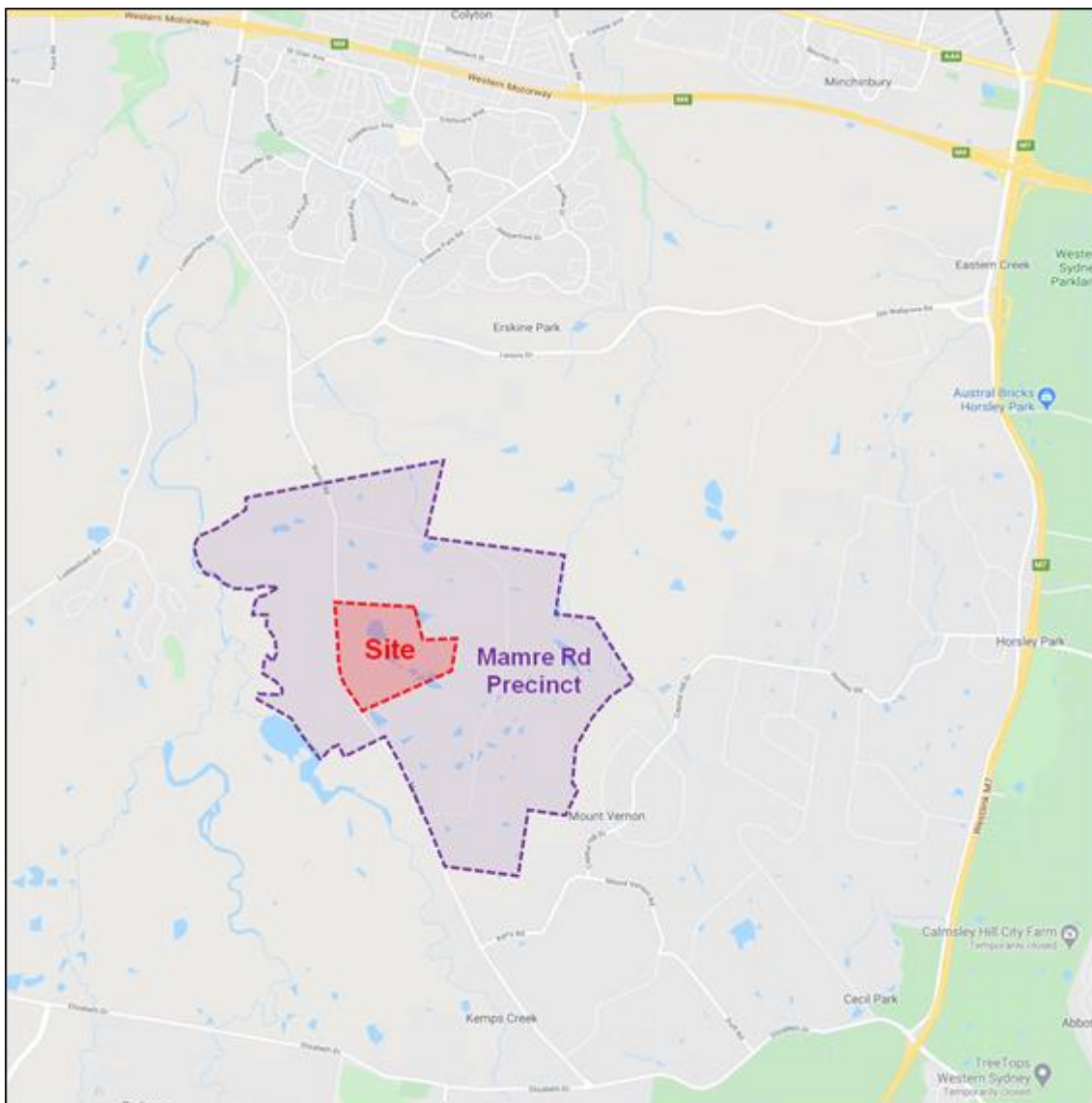
Reference	Requirement	Response
1.11	The preparation of a preliminary Construction Pedestrian and Traffic Management Plan (CPTMP) to demonstrate the proposed management of the impact in relation to construction traffic addressing the following:	
1.11.1	assessment of cumulative impacts associated with other construction activities (if any);	<p>This preliminary CTMP has considered the cumulative construction impacts of future development across the Mamre Road Precinct, including the Mamre Road Upgrade and key connections to the existing and future regional road network. This is discussed further in <b>Section 4.3</b>.</p> <p>Due to uncertainties in regard to the timing of development across the Mamre Road Precinct, the modelling of the Site access intersection includes background traffic growth to 2022, by which time it is expected that the construction task will be completed.</p> <p>It is noted that TfNSW has recently commenced a detailed traffic modelling assessment of the broader Mamre Road Precinct; the outcomes of this assessment will be instrumental to future revisions to this CTMP as required.</p>
1.11.2	an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity;	<p>An assessment of the existing crash data is provided in <b>Section 2.3</b>.</p> <p>An assessment of potential heavy vehicle impacts is provided in <b>Section 4.4</b>. As heavy vehicles will only utilise TfNSW Restricted Access Vehicle routes - routes which have little pedestrian activity – there is no expectation of any impacts on pedestrian safety.</p>
1.11.3	details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process;	See <b>Section 3.1</b> and <b>3.2</b> .
1.11.4	details of anticipated peak hour and daily construction vehicle movements to and from the site;	See <b>Section 4.1</b>
1.11.5	details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle;	See <b>Section 3.3</b> and <b>4.6</b> .
1.11.6	details of temporary cycling and pedestrian access during construction	See <b>Section 3.3.3</b> .

## 2 The Site

### 2.1 Site Location

The Site is legally described as Lots 54 – 58 in DP 259135, Mamre Road Kemps Creek, and has an area of approximately 56.3 hectares (ha). The Site is located approximately 6.5km north-east of the future Western Sydney International (Nancy-Bird Walton) Airport (WSA), 13.5km south-east of the Penrith CBD and 40km west of the Sydney CBD.

The Site in its sub-regional context is shown in **Figure 1**, as well as the broader Mamre Road Precinct as designated by DPIE.



**Figure 1: Site Location**

## 2.2 Road Network

Key roads in the vicinity of the Site are shown in **Figure 1**, and include:

- **Westlink M7 Motorway:** M7 Motorway is a high capacity road link of state significance and was built to accommodate future traffic growth in the Western Sydney region. It provides a key north-south link between the M2 Motorway to the north and the M5 Motorway to the south as part of the Sydney orbital road network. A major interchange between the M7 Motorway and M4 Western Motorway is located approximately 3.5 km north of the Site, which connects the Sydney CBD and western Sydney suburbs. The M7 Motorway provides 4 lanes (2 lanes per direction, divided carriageway) and has a posted speed limit of 100 km/h
- **(Future) M12 Motorway:** A proposed 16km motorway generally running in an east-west between the existing M7 motorway and the Northern Road. It is expected to run in parallel with Elizabeth Drive and is to have 2 lanes in each direction separated by a central median. Construction is expected to commence in 2020.
- **Wallgrove Road:** Wallgrove Road is an arterial road that runs in a north-south direction to the east of the Site and parallel (to the west of) the M7, functioning as a service road. The 2-lane, two-way road provides a link between the Great Western Highway to the north and Elizabeth Drive to the south. As with the M7, Wallgrove Road connects to the M4 motorway approximately 2.5 kilometres to the north of the Site.
- **Elizabeth Drive:** An TfNSW classified main road (MR 535) that runs in an east-west direction to the south of the site. Elizabeth Drive in the vicinity of the site generally provides 2 lanes (1 lane per direction) and has a posted speed limit of 80km/h. This road forms the Site's southern frontage and provides a vital link between Westlink M7 Motorway and The Northern Road.
- **The Northern Road:** The Northern Road is TfNSW classified main road (MR 154) that runs in a north-south direction to the west of the site. The Northern Road section near the vicinity of the site generally provides 3 lanes (1 to 2 lanes per direction) and has a posted speed limit of 80km/h. Currently, The Northern Road is undergoing multiple stages of road upgrades by RMS, including a realignment of the road in the south. The road upgrades between The Old Northern Road, Narellan and Peter Brock Drive, Oran Park, has been completed.
- **Mamre Road:** Mamre Road is an arterial road servicing traffic between the Great Western Highway and M4 to the north and Elizabeth Drive to the south. In the vicinity of the Site, Mamre Road generally provides 2 lanes for two-way traffic, with additional through movement and turning infrastructure at key intersections to the north through the Erskine Park and Mamre West industrial precincts, and at Elizabeth Drive to the south. Mamre Road has a posted speed limit of 80km/h in the vicinity of the Site. TfNSW has confirmed road upgrades will be undertaken for Mamre Road between Elizabeth Drive and Luddenham Road.

Further to the above, it is clear that the Site is well located in regard to immediate access to the local and sub-regional road network, as shown in **Figure 2** with specific reference to TfNSW Restricted Access Vehicle (RAV) routes, which allow for up to 25m/26m B-Double combinations.



**Figure 2: TfNSW Approved 25/26m B-Double Routes**

### 2.3 Crash Data at Key Intersections

Mamre Road will be the key road to access the Site for heavy vehicles. As such, a crash history of the road and nearby key intersections of Mamre Road / Bakers Lane and Mamre Road / Abbots Road have been reviewed using TfNSW Centre for Road Safety’s crash statistics between 2014 – 2018. **Figure 3** below details all crashes identified by TfNSW, while

Table 2 details the severity of each of these crashes.

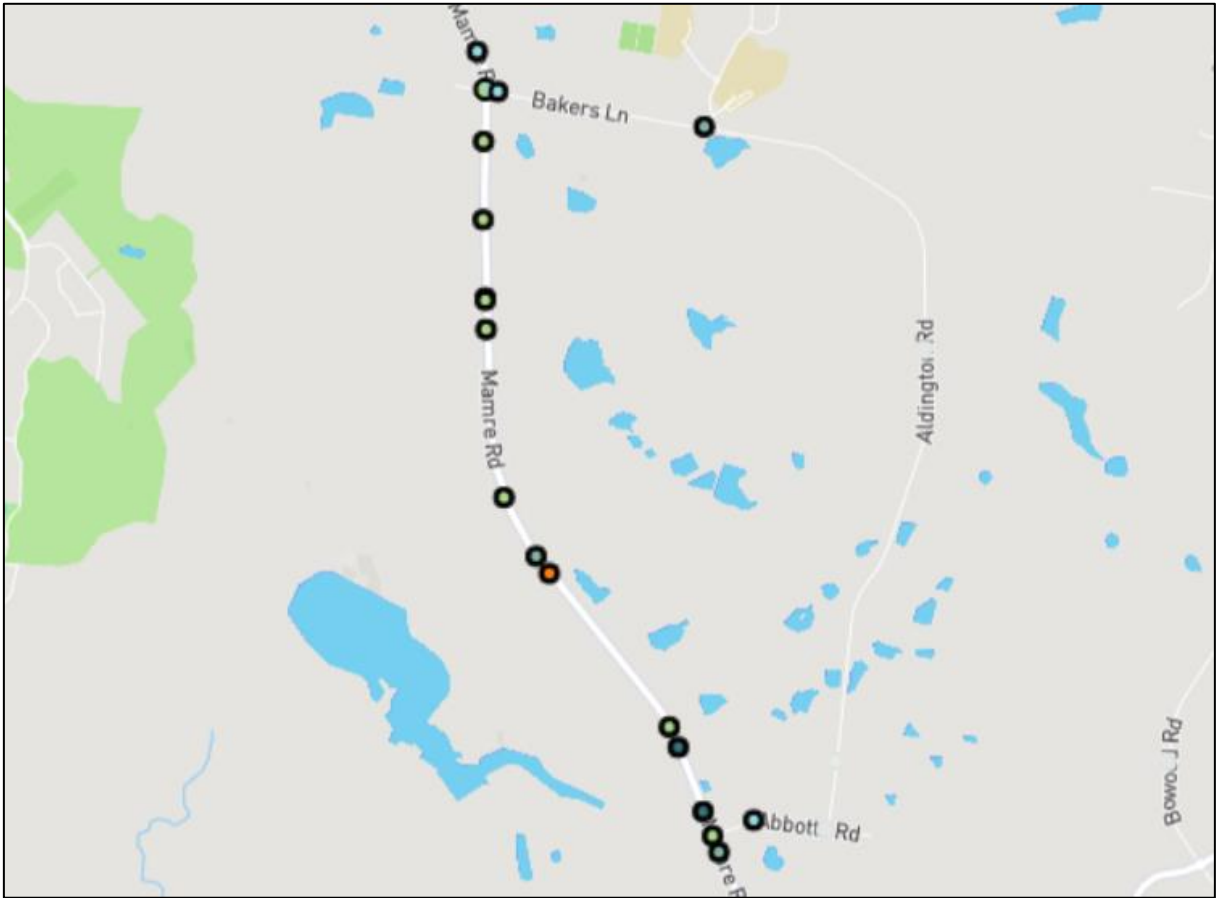


Figure 3: Crash History along Mamre Road

**Table 2: Historical Crash Data**

Year	Degree of Crash	RUM Code	RUM Description
<i>Mamre Road / Bakers Lane</i>			
2014	Minor/Other Injury	30	Rear end
2017	Non-casualty	19	Other adjacent
2017	Minor/Other Injury	39	Other same direction
<i>Mamre Road</i>			
2014	Minor/Other Injury	30	Rear end
2014	Non-casualty	71	Left off carriageway into object / parked vehicle
2014	Serious Injury	71	Left off carriageway into object / parked vehicle
2015	Moderate Injury	71	Left off carriageway into object / parked vehicle
2015	Non-casualty	83	Off carriageway right on right bend into object / parked vehicle
2016	Non-casualty	30	Rear end
2017	Non-casualty	39	Other same direction
2017	Non-casualty	32	Right rear
2017	Serious Injury	49	Other maneuvering
2017	Non-casualty	30	Rear end
2017	Fatal	20	Head on
<i>Mamre Road / Abbotts Road</i>			
2015	Moderate Injury	59	Other overtaking
2016	Non-Casualty	19	Other adjacent

As shown in **Table 2**, there has only been one fatality in the vicinity of the Site (2017) and no crashes are reported in the vicinity of the Site during 2018.

## 3 Overview of Construction Works

### 3.1 Staging and Duration of Works

Based on information provided to Ason Group by Mirvac, it is anticipated that construction works would commence in Start 2021 and be completed over a duration between 2-3 years, subject to authority approvals and inclement weather delays.

The following summarises key aspects of the construction stages:

- Demolition works are set to have a duration for 8-12 weeks commencing Start 2021.
- Excavation activities would continue for 12-18 months commencing Start 2021 finishing Mid-Late 2022.
- General Construction works are estimated to continue concurrently to excavation activities for 12-24 months commencing Mid-End 2021.

### 3.2 Construction Hours

The type of work being undertaken will remain consistent throughout the duration of construction and associated activities. All works will be undertaken within the following hours:

- Monday to Friday (other than Public Holidays): 7:00am – 6:00pm.
- Saturday: 8:00am – 1:00pm
- Sunday & Public Holidays: No works to be undertaken.

Any work to be undertaken outside of the standard construction hours will be required to obtain an Out of Hours (OOH) approval; any such works would necessarily be undertaken in accordance with the appropriate OOH protocols and approval processes.

### 3.3 Site Access

#### 3.3.1 Construction Vehicle Access

All construction vehicles will enter and depart the Site from / to Mamre Road via a temporary access driveway, which be constructed on the alignment of the future Access Road 1.

It is anticipated that the largest vehicle accessing the Site would be a 19.6m Truck & Dog combination, which the temporary access driveway will be designed for. It is expected that two-way heavy vehicle flow would be enabled along Mamre Road. Regardless, construction management protocols will require that the vehicle entering site access road will have right of way in order to ensure that there is no queueing on Mamre Road.

It is anticipated that for the first stages of construction (at least), access to and from the Site onto Mamre Road will be restricted to left-in and left-out movements; this is discussed further in **Section 4**. The following **Figure 4** shows the indicative Site access location.

Further to this restriction, **Figure 5** details the likely key access strategy into the routes between the Site and the regional road network.



**Figure 4: Indicative Vehicle Access Plan**

### 3.3.2 Emergency Vehicle Access

Emergency vehicle access to and from the Site will be available at all times while the Site is occupied by construction workers; emergency protocols during the works will be developed by the Project Manager for inclusion within the final CTMP.

### 3.3.3 Pedestrian Access

There are currently no pedestrian amenities or footpaths along Mamre Road adjacent to the Site. However, the grassed verge on both sides of the road remains usable for any pedestrian that may wish to walk along Mamre Road.

Further to the above, while there is no expectation of pedestrians crossing the future construction access road (at Mamre Road), pedestrian safety will be managed through the provision of appropriate signage and pedestrian barriers. Construction personnel will also be able to access the Site by foot via a secure access gate along the temporary access road, though with all construction staff (and vehicle) parking to be provided within the Site there is again little potential for such pedestrian demand.

### 3.4 Construction Vehicle Access Routes

As discussed, all construction vehicles will enter and exit the Site via Mamre Road.

It is anticipated that all heavy vehicles will access Site via the approved RAV routes shown in **Figure 2**, though the following routes are expected to provide for the majority of construction vehicle trips:

- Arrival Trips:
  - Route 1: From M4 Western Motorway, southbound along Mamre Road and left into the Site.
  - Route 2: From Westlink M7, westbound on Old Wallgrove Road, Lenore Drive and Erskine Park Road, then south along Mamre Road and left into the Site.
  
- Departure Trips:
  - Route 1: From the Site, left onto Mamre Road then south to Elizabeth Drive and left to the M7 Motorway and sub-regional routes to the east.
  - Route 2: From the Site, left onto Mamre Road then south to Elizabeth Drive and right to Badgerys Creek and The Northern Road to the west.

These routes are shown in **Figure 5**.

A copy of the approved routes will be distributed by the Project Manager to all drivers as part of their induction process.

In the event that an oversized or over-mass vehicles is required to travel to and / or from the Site, a permit from Roads and Maritime Services and / or the National Heavy Vehicle Register (NHVR) will be required prior to arrival to the site. Notwithstanding, this CTMP relates to general construction which does not seek the use of oversize vehicles; a separate application would be submitted if such access is required.

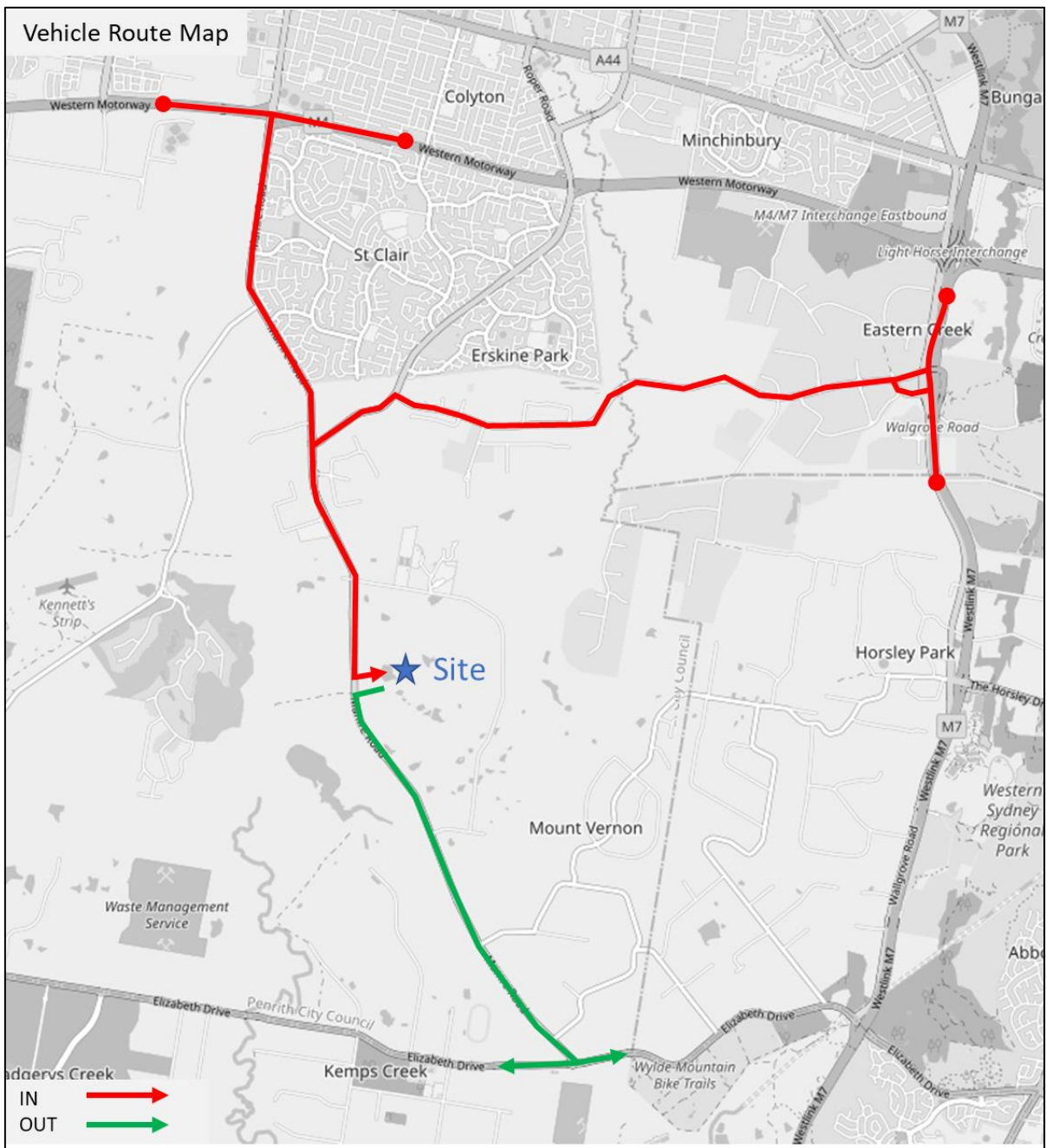


Figure 5: Construction Vehicle Routes

### 3.5 Fencing Requirements

Security fencing will be erected along the entire boundary of the Site and will be maintained for the duration of the construction works to ensure that unauthorised persons are kept out of the Site. The fencing will either be ATF or 2.4m chain wires.

Site access gates would be provided at the temporary driveway which would remain closed at all times outside of the permitted construction hours.

### 3.6 Materials Handling

All material loading will be undertaken wholly within the Site, and all construction equipment, materials and waste will similarly be strictly kept within the Site.

While not anticipated, should any materials handling (or other constructed related activity) be required from the public roadway (i.e. Mamre Road) then prior approval shall be sought and obtained from the appropriate authorities.

### 3.7 Additional Site Management

Although it is not expected, in the event that any Site construction traffic management outside of that described in this CTMP is required, the Project Manager will be required to notify adjacent properties of any temporary traffic restrictions (or the like) at least fourteen (14) days in advance.

### 3.8 Road Occupancy

The potential exists for future road occupancy requirements to facilitate the construction of the temporary driveway, and then any further upgrades to the intersection of Mamre Road. Road occupancy permits will necessarily be procured prior to starting intersection construction works, while a detailed intersection-specific CTMP would be prepared in consultation with Council and Roads & Maritime to ensure traffic along Mamre Road would continue to operate adequately during any such occupancy period.

### 3.9 CTMP – Monitoring & Review Process

This CTMP has been prepared referencing the existing Site conditions and information provided by Mirvac. Consultation with Council, Roads and Maritime and neighbouring developments will continue to be undertaken to ensure that the cumulative traffic impacts of construction within the area do not adversely impact the operations of the neighbouring developments or the local road network.

## 4 Assessment of Traffic & Transport Impacts

### 4.1 Construction Vehicle Traffic Generation

**Table 3** provides a breakdown of potential vehicle movements throughout the proposed works (as provided by Mirvac):

**Table 3: Movement Overview**

Stage	Demolition	Excavation	General Construction
Worker Numbers (Maximum on-site at any one time)	50 - 100	50 – 200	50 – 400
Truck Frequency (Maximum movements per day)	100 (50 in / 50 out)	600 (300 in / 300 out)	600 (300 in / 300 out)
Peak Hour Heavy Vehicle Movements	50 (25 in / 25 out)	120 (60 in / 60 out)	120 (60 in / 60 out)
Largest Vehicle Size	Truck & Dog	Truck & Dog	Truck & Dog

#### 4.1.1 Light Vehicle Movements

It is anticipated that a peak construction workforce of up to 400 workers on-site at any one time (based on the specific constructions tasks being undertaken). Light vehicle traffic generation would generally be associated with construction staff movements to and from the Site, including Project Managers, trade and general employees.

With respect to the potential impacts of light vehicle traffic, the overwhelming majority of trips would occur in the short workforce arrival and departure periods, being (based on the proposed construction hours) 6:30am – 7:00am and 6:00pm – 6:30pm respectively; as such, these movements would occur outside of the existing (commuter) peak periods in the local network.

#### 4.1.2 Heavy Vehicle Movements

As indicated in **Table 3**, the construction works are estimated to generate a peak demand for up to 600 truck movements per day (300 vehicles arriving / 300 vehicles departing). To provide a conservative assessment of intersection operations, a peak hour truck generation of up to 120 movements (60 vehicles arriving / 60 vehicles departing) has been assigned; on average, it is expected there would be approximately 60 truck movements per hour (30 vehicles arriving / 30 vehicles departing).

For modelling purposes, it is expected that there will be a 50% / 50% arrival and departure profile in the AM peak, and 50% / 50% arrival and departure profile in the PM peak.

## 4.2 Mamre Road & Site Access Road Geometry

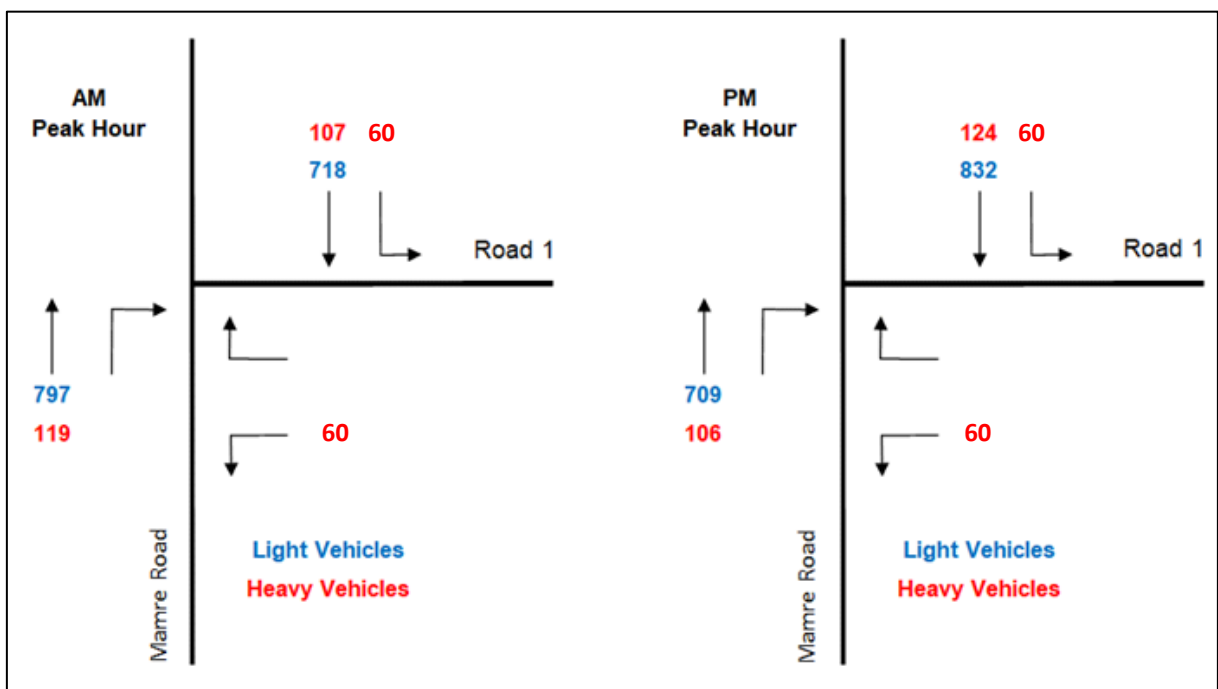
As discussed, all construction vehicles will use the temporary access road to Mamre Road for access to / from the Site, with movements restricted to left in / left out only. This access intersection will design such that arriving vehicles are able to immediately enter the Site so as to remove the potential for queuing back to Mamre Road.

## 4.3 Mamre Road & Site Access Road Operations

### 4.3.1 Future Intersection Volumes

For the assessment of the Mamre Road & Site Access Road operations, Mamre Road traffic volumes for a forecast year 2023 have been developed with reference to the Mamre Road Upgrade traffic assessments; these flows represent average annual growth of between 4% and 8% during the peak periods for northbound and southbound through movements.

As discussed previously, a peak of 120 truck trips per hour (60 arrivals and 60 departures) has then been assigned to provide a worst-case assessment. The resulting intersection volumes during the AM and PM peak hours are shown in **Figure 6**.



**Figure 6: Future Site Intersection Flows**

### 4.3.2 SIDRA Modelling

SIDRA intersection modelling has been undertaken to establish the existing performance of key intersections in the vicinity of the Site so as to provide an appropriate baseline against which the relative impacts of the works can be measured.

In this regard, SIDRA modelling outputs a range of performance measures relevant to this assessment, including:

- *Degree of Saturation (DOS)* – The DOS is used to measure the performance of intersections where a value of 1.0 represents an intersection at theoretical capacity. As the performance of an intersection approaches DOS of 1.0, queue lengths and delays increase rapidly. It is recommended that DOS to be less than 0.9, with satisfactory intersection operation generally achieved with a DOS below 0.8.
- *Average Vehicle Delay (AVD)* – The AVD (or average delay per vehicle in seconds) for intersections also provides a measure of the operational performance and is used to determine an intersection’s Level of Service (see below). For signalised intersections, the AVD reported relates to the average of all vehicle movements through the intersection. For priority (Give Way, Stop & Roundabout controlled) intersections, the AVD reported is that for the movement with the highest AVD.
- *Level of Service (LOS)* – This is a comparative measure that provides an indication of the operating performance, based on AVD.

**Table 4** below provides a summary of the RMS LOS criteria.

**Table 4: Level of Service Criteria for Intersections**

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode or major treatment.

### 4.3.3 Future Intersection Operation

Further to the above, the results of the SIDRA analysis of future operations are summarised in **Table 5** below.

**Table 5: Future Intersection Performance**

Intersection	Control Type	Period	Intersection Delay	Level of Service
Mamre Road & Site Access Road	Priority (Left-in & Left-out)	AM	25.0	B
		PM	54.7	D

With reference to **Table 5**, the SIDRA analysis indicates that the peak construction trip generation of the Site can be accommodated at the Mamre Road access intersection. Important, the reported delays primarily relate to vehicles departing the Site, not to Mamre Road [southbound] through movements.

### 4.4 Future Road Safety

It is noted that there will be an increased number of heavy vehicles along Mamre Road during the construction period. However, the heavy vehicles will be travelling along approved RAV routes which would mitigate road safety impacts along local roads and heavily pedestrianised areas. Traffic control plans at the Site's access will be designed to minimise pedestrian and cyclists impacts along Mamre Road.

### 4.5 Vehicle Management – Principles

In accordance with TfNSW requirements, all vehicles transporting loose materials would have the entire load covered and/or secured to prevent any large items, excess dust or dirt particles depositing onto the roadway during travel to and from the Site.

Further to covering/securing the load to prevent deposits onto the roadway, a Shaker Grid is proposed and installed at the point of vehicle egress to minimise the risk of dirt tracking out onto Mamre Road. The responsibility of the driver to ensure that the Shaker Grid is driven over would be included as part of the Driver Code of conduct; this requirement, and indeed all driver requirements, will be detailed during an induction process for all drivers prior to commencing work at the Site, and will be further detailed in the Driver Code of Conduct, a copy of which included in **Appendix A**.

### 4.6 Construction Staff Parking

All construction staff and contractors will be required to park wholly within the Site, noting that there will be significant area available (at all times) to meet the peak parking demand.

## 5 Traffic Control

### 5.1 Traffic Control

The RMS guide “Traffic Control at Worksites” (TCAW) manual contains standard traffic control plans (TCPs) for a range of work activities. The manual’s objective is to maximise safety by ensuring traffic control at worksites complies with best practice.

The RMS TCAW outlines the requirements for a Vehicle Movement Plan (VMP) for construction works such as proposed; a VMP is a diagram showing the preferred travel paths for vehicles associated with a work site entering, leaving or crossing the through traffic stream. A VMP should also show travel paths for trucks at key points on routes remote from the work site such as places to turn around, accesses, ramps and side roads.

Regarding construction work on roads with an average daily total (ADT) in excess of 1,500 vehicles, approach speeds of between 60 km/hr and 80 km/hr, with truck movements > 20 veh/shift, and sight distance is less than 2d, (where d equals the posted speed limit and in this instance the sight distance is required to be up to 120 metres), it would be expected for the following to be required by the RMS TCAW:

- A detailed Traffic Control Plan (TCP) with Traffic controllers
- A VMP.
- Warning Signs required during shifts.

With regard to the proposed temporary access road, a site-specific version of TCP 195 (as shown in **Appendix B**) would be implemented for the duration of the works.

### 5.2 Authorised Traffic Controller

An authorised Traffic Controller(s) is to be present on-site throughout the proposed works. Responsibilities of the Traffic Controller will include:

- The supervision of all construction vehicle movements into and out of site at all times,
- The supervision of all loading and unloading of construction materials during the deliveries in the construction phase of the project, and
- Pedestrian management, to ensure that adverse conflicts between vehicle movements and pedestrians do not occur, while maintaining radio communication with construction vehicles at all times.

## 6 Monitoring and Communication Strategies

### 6.1 Development of Monitoring Program

The development of a program to monitor the effectiveness of this CTMP shall be established by the Project Manager and should consider scheduled reviews as well as additional reviews should construction characteristics be substantially changed (from those outlined in the Final CTMP). All and any reviews of the CTMP should be documented, with key considerations expected to include:

- Tracking heavy vehicle movements against the estimated heavy vehicle flows during the Stage 1 works.
- The identification of any shortfalls in the CTMP, and the development of revised strategies / action plans to address such issues.
- Ensuring that all TCPs are updated (if necessary) by “Prepare a Work Zone Traffic Management Plan” card holders to ensure they remain consistent with the set-up on-site.
- Regular checks to ensure all loads are departing the Site covered as outlined within this CTMP.

### 6.2 Communications Strategy

A Communications Strategy shall be established by the Project Manager for implementation throughout the construction works; this strategy will outline the most effective communication methods to ensure adequate information within the community and assist the Project Team to ensure the construction works have minimal disruption on the road network. The Communications Strategy will include:

- The erection of appropriate signage providing advanced notice of works and any traffic control measures to be implemented.
- Written notices to surrounding landowners (and tenants) likely to be directly affected by the works, prior to commencement.

Ongoing communication is also required so that all stakeholders are kept up to date of works and potential impacts.

## 7 Summary

This CTMP has been prepared to ensure appropriate traffic management is undertaken during the proposed industrial development.

Ultimately, this CTMP report has been prepared with regard to the management principles outlined in the RMS Traffic Control at Worksites Manual (2018) and AS1742.3, and per the detailed strategies outlined in the CTMP is recommended for adoption at the Site.

In summary though – and further to a determination that the proposal's construction traffic will not impact the local road network - the following measures are recommended to minimise the potential traffic impacts associated with the proposal:

- Traffic control would be required to manage and regulate construction vehicle traffic movements to and from the Site during construction.
- All vehicles transporting loose materials will have the load covered and/or secured to prevent any items depositing onto the roadway during travel to and from the Site.
- All vehicles are to enter and depart the Site in a forward direction, with reverse movements to occur only within the Site boundary.
- All contractor parking is to be contained wholly within the Site, and.
- Pedestrian and cyclist traffic along the Site frontage will be managed appropriately at all times.

In summary, the CTMP report is proposed in accordance with the RMS TCAW.

# Appendix A

## Driver Code of Conduct

## - Driver Code of Conduct -

### Drivers Code of Conduct

Safe Driving Policy for the Lots 54 – 58 Mamre Road, Kemps Creek

### Objectives of the Drivers Code of conduct

- To minimise the impact of earthworks and construction on the local and regional road network;
- Minimise conflict with other road users;
- Minimise road traffic noise; and
- Ensure truck drivers use specified routes

### Code of Conduct

All vehicle operators accessing the site must:

- Take reasonable care for his or her own personal health and safety.
  - Not adversely, by way of actions or otherwise, impact on the health and safety of other persons.
  - Notify their employer if they are not fit for duty prior to commencing their shift.
  - Obey all applicable road rules and laws at all times.
  - In the event an emergency vehicle behind your vehicle, pull over and allow the emergency vehicle to pass immediately.
  - Obey the applicable driving hours in accordance with legislation and take all reasonable steps to manage their fatigue and not drive with high levels of drowsiness.
  - Obey all on-site signposted speed limits and comply with directions of traffic control supervisors in relation to movements in and around temporary or fixed work areas.
  - Ensure all loads are safely restrained, as necessary.
  - Drive over cattle grids – located at the Site's access – to vibrate off any loose material attached to construction vehicles.
  - Operate their vehicles in a safe and professional manner, with consideration for all other road users.
  - Hold a current Australian State or Territory issued driver's licence.
  - Notify their employer or operator immediately should the status or conditions of their driver's license change in any way.
-

- Comply with other applicable workplace policies, including a zero tolerance of driving while under the influence of alcohol and/or illicit drugs.
- Not use mobile phones when driving a vehicle or operating equipment. If the use of a mobile device is required, the driver shall pull over in a safe and legal location prior to the use of any mobile device.
- Advise management of any situations in which you know, or think may, present a threat to workplace health and safety.
- Drive according to prevailing conditions (such as during inclement weather) and reduce speed, if necessary.
- Have necessary identification documentation at hand and ready to present to security staff on entry and departure from the site, as necessary, to avoid unnecessary delays to other vehicles.

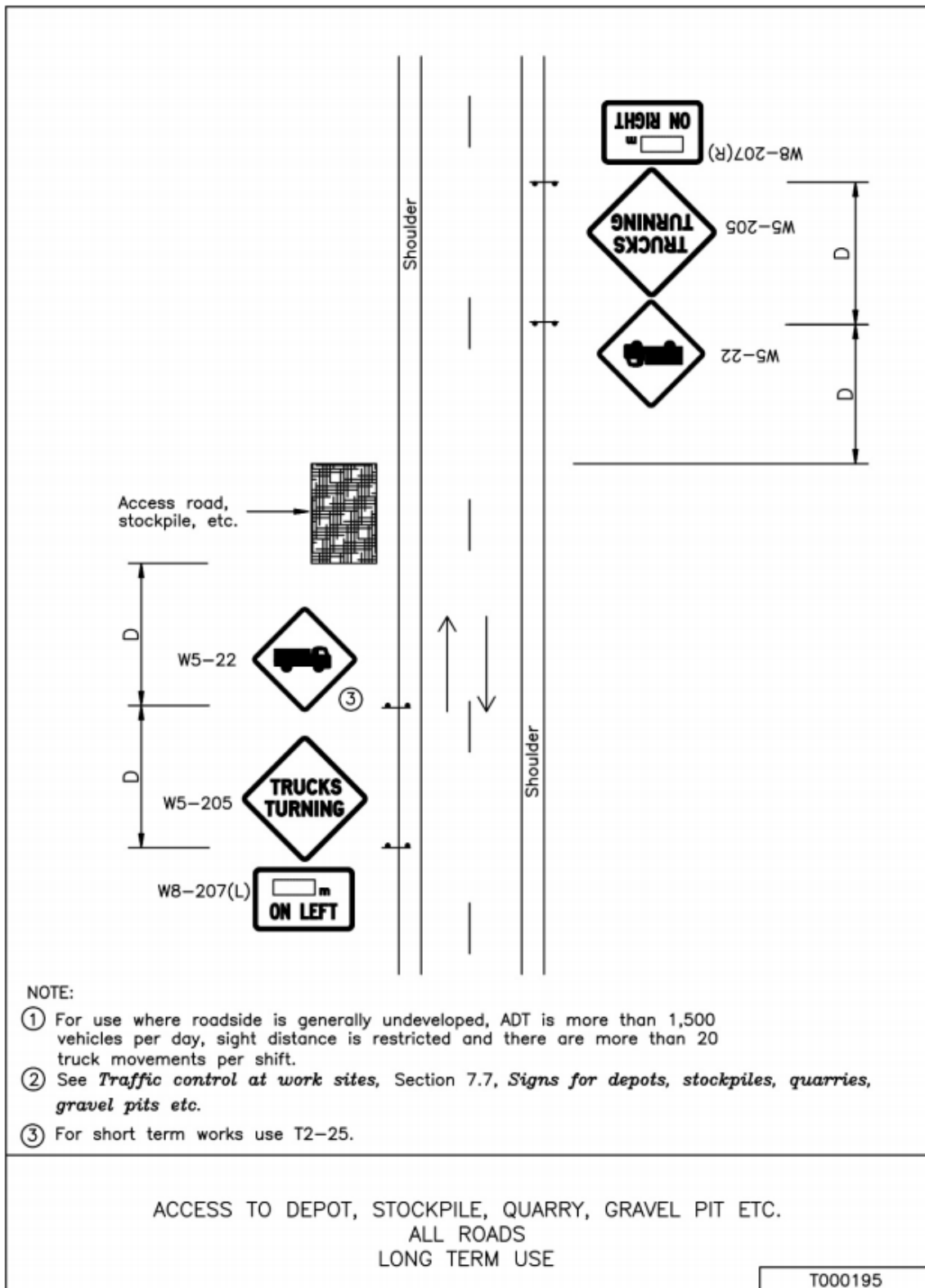
### Crash or incident Procedure

- Stop your vehicle as close to it as possible to the scene, making sure you are not hindering traffic. Ensure your own safety first, then help any injured people and seek assistance immediately if required.
  - Ensure the following information is noted:
    - Details of the other vehicles and registration numbers
    - Names and addresses of the other vehicle drivers
    - Names and addresses of witnesses
    - Insurers details
  - Give the following information to the involved parties:
    - Name, address and company details
  - If the damaged vehicle is not occupied, provide a note with your contact details for the owner to contact the company.
  - Ensure that the police are contacted should the following circumstances occur:
    - If there is a disagreement over the cause of the crash.
    - If there are injuries.
    - If you damage property other than your own.
  - As soon as reasonably practical, report all details gathered to your manager.
-

# Appendix B

Traffic Control Plan(s)

# TCP 195



# Appendix E. Framework Sustainable Travel Plan

asongroup



## **Framework Sustainable Travel Plan**

Warehouse 9, Aspect Industrial Estate

5/08/2022

P1901r01

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# 1 Introduction

## 1.1 Context

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Ason Group has been engaged by Mirvac Projects Pty Ltd to prepare a Framework Sustainable Travel Plan (FSTP) to support the State Significant Development (SSD-10448) Application for the development at Warehouse 9 (the Proposal) of the Aspect Industrial Estate (AIE), located on Lots 54-58, DP259135, Kemps Creek (the Site). The Site is located within the Penrith Local Government Area (LGA).

Furthermore, it is important to note that this FSTP has been prepared to address the following requirement within the Mamre Road Precinct DCP 2021, Section 3.4.1, Control 1:

- *“Development applications shall be accompanied by a Traffic and Transport Report. The Traffic and Transport Report shall include a Green Travel Plan and Travel Access Guide”*

The Site is located to the east of Mamre Road and lies within the Mamre Road Precinct (MRP). The Department of Planning and Environment (DPE) rezoned the MRP, in June 2020. As such, the Site is primarily zoned IN1 General Industrial.

The MRP Structure Plan was finalised in June 2020, followed by the release and finalisation of the MRP Development Control Plan (Mamre Road DCP) on 19 November 2021.

The land which forms the MRP is largely made up of rural residential properties, as well as small scale agricultural industry businesses, at present. Consequently, the Site itself is therefore not well connected by travel modes other than the private vehicle. However, the Mamre Road DCP outlines a number of objectives to ensure that, as the MRP develops, an integrated public and active transport network also develops to service future development such as the subject Site.

The purpose of this document is therefore to complement the intent of the DCP, by outlining the overarching requirements for a future Sustainable / Green Travel Plan package for the Estate. This FSTP will inform the future site-specific Plans, expected to be implemented as part of a Condition of Consent relating to any detailed development approval.

## 1.2 Background

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MRP forms one of the initial precincts of the broader Western Sydney Aerotropolis. However, as the land has already been rezoned and incorporated into the controls of the Western Sydney Employment Area (WSEA) SEPP, it is not covered by the State Environmental Planning Policy (Western Sydney Aerotropolis) 2020 or the background policy which establishes the strategic direction for the Aerotropolis.

Nevertheless, the background studies provide some context with regards to travel demand management, specifically the following report:

- *AECOM Western Sydney Aerotropolis Transport Planning and Modelling Stage 2 Report, October 2020 (AECOM Report).*

The AECOM Report is one of the technical reports supporting the delivery of the Draft Aerotropolis Precinct Plan (November 2020). One of the key “enablers” detailed in the AECOM Report includes *the implementation of transport policies and strategies which foster a mode shift to sustainable transport* and recommends the

inclusion of Travel Plans for new development applications within the future Aerotropolis Development Control Plan.

As detailed in the AECOM report, Travel Plans should include the following:

- Baseline travel data on the existing modal share;
- Targets;
- Action plan to achieve targets;
- Commitment to on-going review of the Travel Plan; and
- A monitoring and review strategy.

Of particular relevance to this FSTP are the mode share targets set by the AECOM Report for each of the Aerotropolis precincts with the most comparable precinct to the MRP being the Badgerys Creek and Agribusiness Precincts. Of the 5 Aerotropolis Precincts covered, Badgerys Creek and Agribusiness have the lowest sustainable mode share targets (by 2056) of 20% Active and Public Transport including 18% for Public Transport (the Badgerys Creek Precinct is shown by **Figure 1**).

This reflects the planned land uses, which are anticipated to support warehousing and logistic uses, as noted by the AECOM Report. Notably, the Agribusiness precinct will not be served by rail, but a number of bus services. These targets are long-term, with an intent to be ambitious but achievable based on the policy framework, actions, initiatives, infrastructure and services defined through the precinct planning process. On this basis, the targets of the Badgerys Creek Precinct have informed the targets for this FSTP.

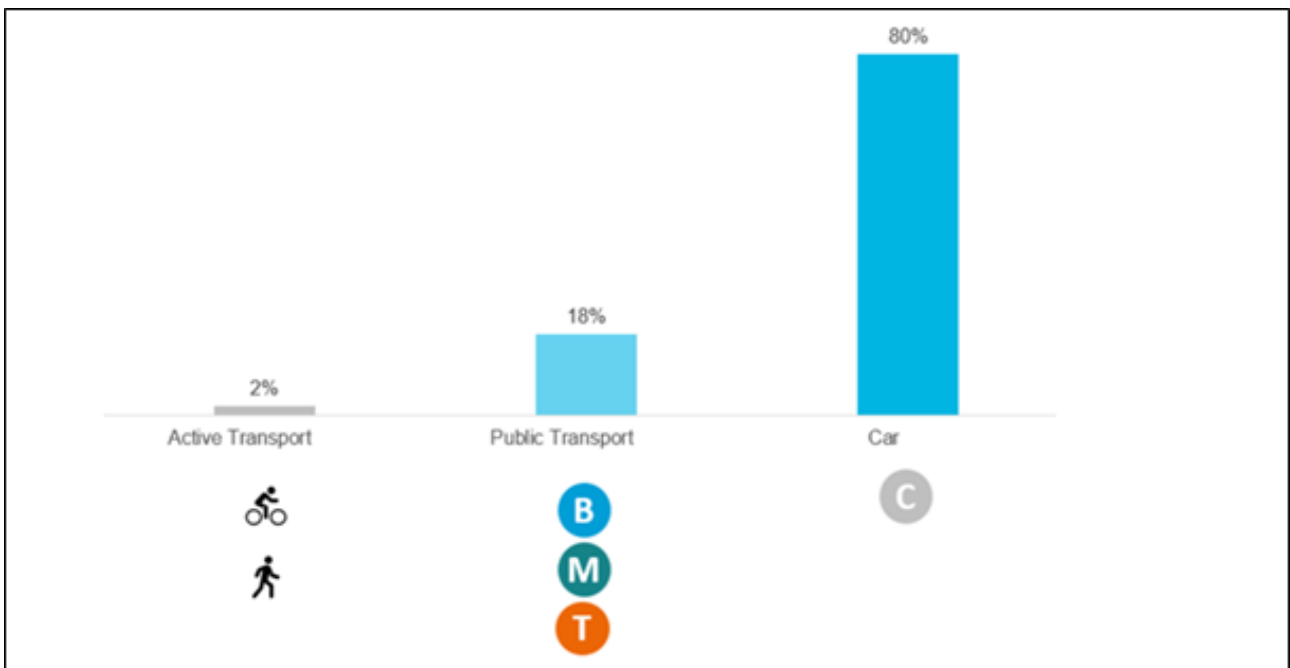


Figure 1: 2056 Badgerys Creek Mode Share Targets (Source: AECOM Report)

## 1.3 Goals

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This FSTP has specifically been prepared to achieve the following key goals:

1. Identify objectives and modes share targets (i.e., Site and land use specific, measurable and achievable timeframes for implementation) to define the direction and purpose of the future site-specific Plans;
2. Suggest specific tools and actions to help achieve the objectives and mode share targets;
3. Suggest measures to promote and support the implementation of the plan, including financial and human resource requirements, roles and responsibilities for relevant employees involved in the implementation of the future site-specific Plans; and
4. Suggest a methodology and monitoring/review program to measure the effectiveness of the objectives and mode share targets of the future STP, including the frequency of monitoring and the requirement for travel surveys to identify travel behaviours at appropriate times.

## 1.4 Objectives

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Underpinning this FSTP comprises a package of measures which could be adopted and designed to address the specific travel needs of the Site. In this regard, the overall intention is to encourage and facilitate the use of alternative and sustainable modes of transport and to reduce single-occupancy car travel for journeys to and from the Site.

The primary objectives of the FSTP will be to:

- Reduce the environmental footprint of the Site;
- Set future staff travel mode share targets;
- Improve access, amenity, convenience, and safety of sustainable transport modes to/from the Site;
- Promote the use of 'active transport' modes such as walking and cycling, particularly for short-medium distance journeys;
- Reduce reliance on the use of private vehicles for all journeys; and
- Encourage a healthier, happier and more active & public transport use culture.

# 2 Site Audit

## 2.1 Introduction

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An audit of the Site is required to determine the existing facilities in the area and review existing transport choices. This section will need to be updated prior to implementation of any site-specific Plan, and at appropriate times, as the MRP develops. The audit should consider the following:

- Site conditions;
- Public transport services in the area, including proximity to the Site, frequency of services and accessibility;
- Bicycle and pedestrian facilities, including accessibility, connectivity and safety; and
- Mode-split data for the Site and local area.

## 2.2 Development Site

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### 2.2.1 Location & Description

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The Proposal is located within Aspect Industrial Estate (AIE), located on Lots 54-58, DP259135, Kemps Creek (the Site). The AIE is legally described as Lots 54 – 58 in DP 259135, Mamre Road Kemps Creek, and has an area of approximately 56.3 hectares (ha). It has approximately 950m of direct frontage to Mamre Road with a proposed intersection providing vehicular access via Mamre Road to the M4 Motorway and Great Western Highway to the north the Elizabeth Drive to the south.

The Site is located approximately 4km north-west of the future Western Sydney International (Nancy-Bird Walton) Airport (WSA), 13km south-east of the Penrith CBD and 40km west of the Sydney CBD. Its sub-regional context is shown in **Figure 2** as well as the broader MR Precinct Structure Plan area in which the Site lies.

It currently provides for a single residential dwelling as well as a small-scale agricultural business.



Figure 2: Site Location

## 2.2.2 Proposed Development

The application seeks consent for earthworks, infrastructure and roads, and the construction, fit out and operation of the warehouse and logistic facility with associated car parking Lot / Warehouse 9 of the AIE.

In summary, the Proposal provides for:

- A total of 66,341m<sup>2</sup> GFA, including:
  - 64,725m<sup>2</sup> of Warehouse GFA
  - 1,350m<sup>2</sup> of office GFA
  - 266m<sup>2</sup> of dock office GFA
- 266 parking spaces
- Light vehicle access and heavy vehicle exit, via Road 04, with heavy vehicle entry via Access Road 03.

A reduced copy of Site plan, prepared by SBA Architects, is presented in **Figure 3**.





## 2.3.2 Bus Services

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The planning of bus services in Sydney is governed by the NSW Service Planning Guidelines, which aim to establish Strategic Transport Corridors and a hierarchy of bus route types that:

- Link to regional centres (such as Penrith and Mt Druitt);
- Pass through patronage generators such as district centres, TAFE colleges, hospitals and universities;
- Connect with other transport modes (trains, ferries and other buses);
- Are multifunctional (serving journeys to work, education, shopping and recreation);
- Are direct and frequent; and
- Meet the network planning principles.

It is also noted that the establishment of public transport services as early as possible in the development stages of the MRP is important to achieve a culture of public transport use from the outset. To make public transport a viable choice in the study area, the services will ideally:

- Integrate with existing bus services in the area;
- Connect to regional centres of Penrith, Mt Druitt and Blacktown; and
- In the long term, connect to areas such as Leppington in the South West Growth Centre, Prairiewood and the Liverpool to Parramatta T-Way.

While the internal MRP road network has yet to be finalised, it is clear from the intent of the objectives contained within the Mamre Road DCP that a connected bus network will be provided. As per the Mamre Road DCP, as all internal roads will accommodate heavy vehicles, they should also be capable of accommodating bus services (although no allowance has been provided at this time). Therefore, there are significant opportunities to provide sub-regional services along Mamre Road, as well as services within the internal MRP road network to maximise the number of sites that lie within 400m of a viable bus service.

Noting that TfNSW Guidelines state that bus services influence the travel mode choices of sites within 400m (approximately 5 minutes' walk) of a bus stop, access to bus services will be a key factor in influencing travel behaviour.

Key bus routes identified in the BWSEA Structure Plan are shown in **Figure 5**. It is acknowledged that these routes will require updates following finalisation of the MRP and network planning for the Aerotropolis Precincts.

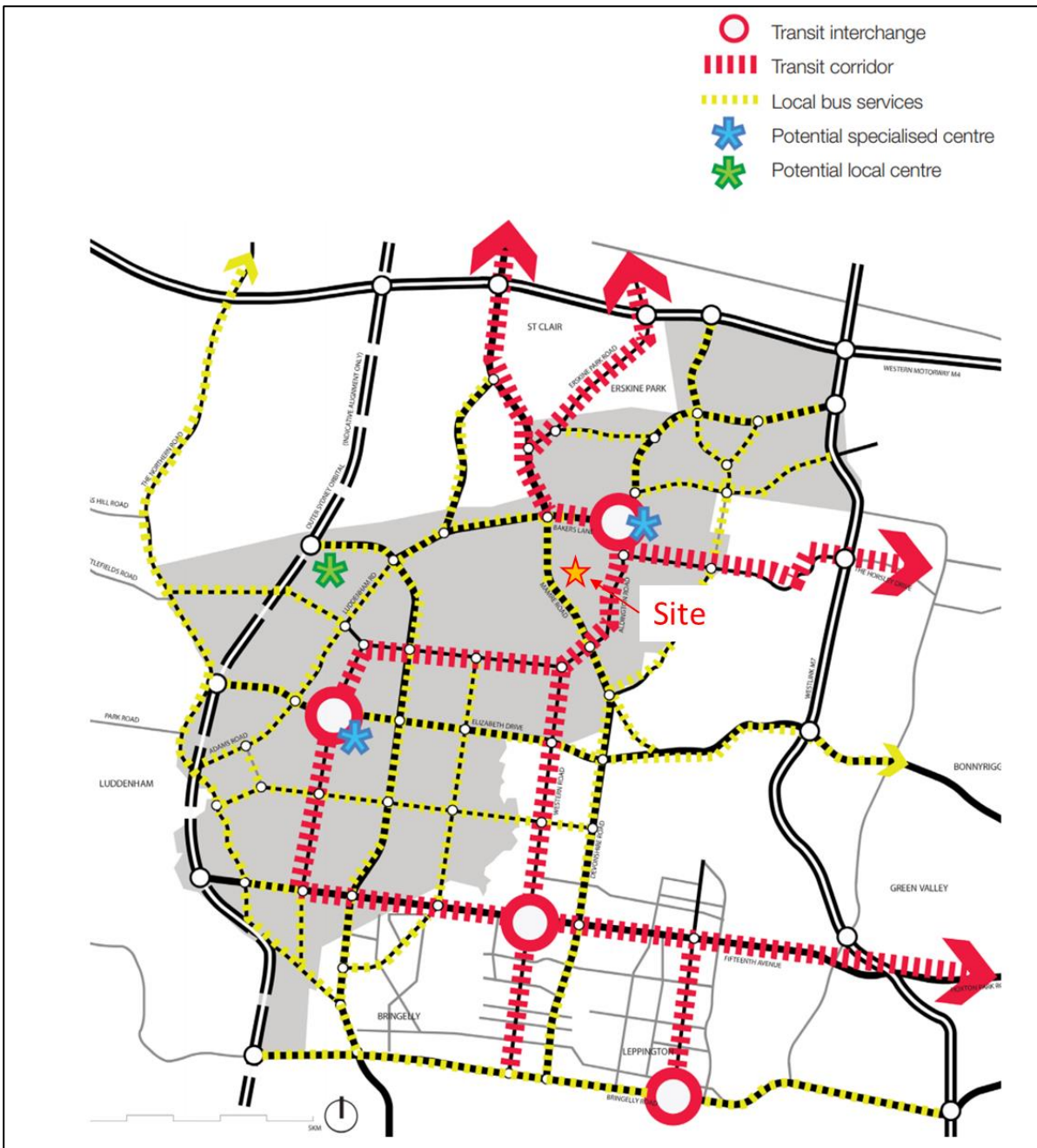


Figure 5: BWSEA Public Transport Structure (Source: BWSEA Structure Plan)

### 2.3.3 Train Services – Metro Western Sydney Airport

The closest train station to the Site is approximately 10 kilometres away. However, the Metro Western Sydney Airport will provide 23 kilometres of new railway to link residential areas with job hubs and the rest of Sydney’s public transport network.

The alignment of the Metro is shown below in **Figure 6**. While the closest station to the Site will likely be Luddenham Station, located approximately 4km (as the crow flies) to the west of the Site, it will undoubtedly improve public transport accessibility to the wider area along with the future bus services. This provides an opportunity for bus services to combine with the Metro to improve connectivity to/from the residential areas to the Site.



Figure 6: Metro Western Sydney Airport Alignment (Source: Sydney Metro)

### 2.3.4 Bicycle Network

At present, shared pedestrian and bicycle paths are generally provided along Erskine Park Road and sections of Mamre Road to the north of the Site, but there is little cycling (or pedestrian) infrastructure (at present) around the Site itself.

The BWSEA Structure Plan provides a detailed outline of future active transport objectives and strategies, acknowledging that the provision of such will be essential to encourage the use of active transport from the outset. In this regard, the BWSEA provides the following key objectives:

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- ⇒ *Provide quality pedestrian and cycling environments around transit corridors and facilities.*
  - ⇒ *Understand the key walking and cycling needs in the region and the need for the separation of pedestrians and cyclists from motor vehicle traffic.*
  - ⇒ *Recognise that all trips involve walking at either the beginning or end of the journey, resulting in the need for connections between parking and public transport areas and destinations.*
  - ⇒ *Recognise that walking and cycling paths can form key routes between destinations.*
  - ⇒ *Understand that walking and cycling trips perform a variety of functions, not only travel from an origin to a destination, but such trips are also undertaken for recreation and/or health benefits, which can be influenced by the amenity of the route.*
- 

Key active transport routes identified in the BWSEA Structure Plan are shown overleaf in **Figure 7**, noting again that the Mamre Road Upgrade project would provide shared paths along at least one side of the road for its entire length, once complete.



is shown by **Figure 8**, which provides context to the configuration of MRP roads and confirms a north-south connection through the Site as a local industrial road.

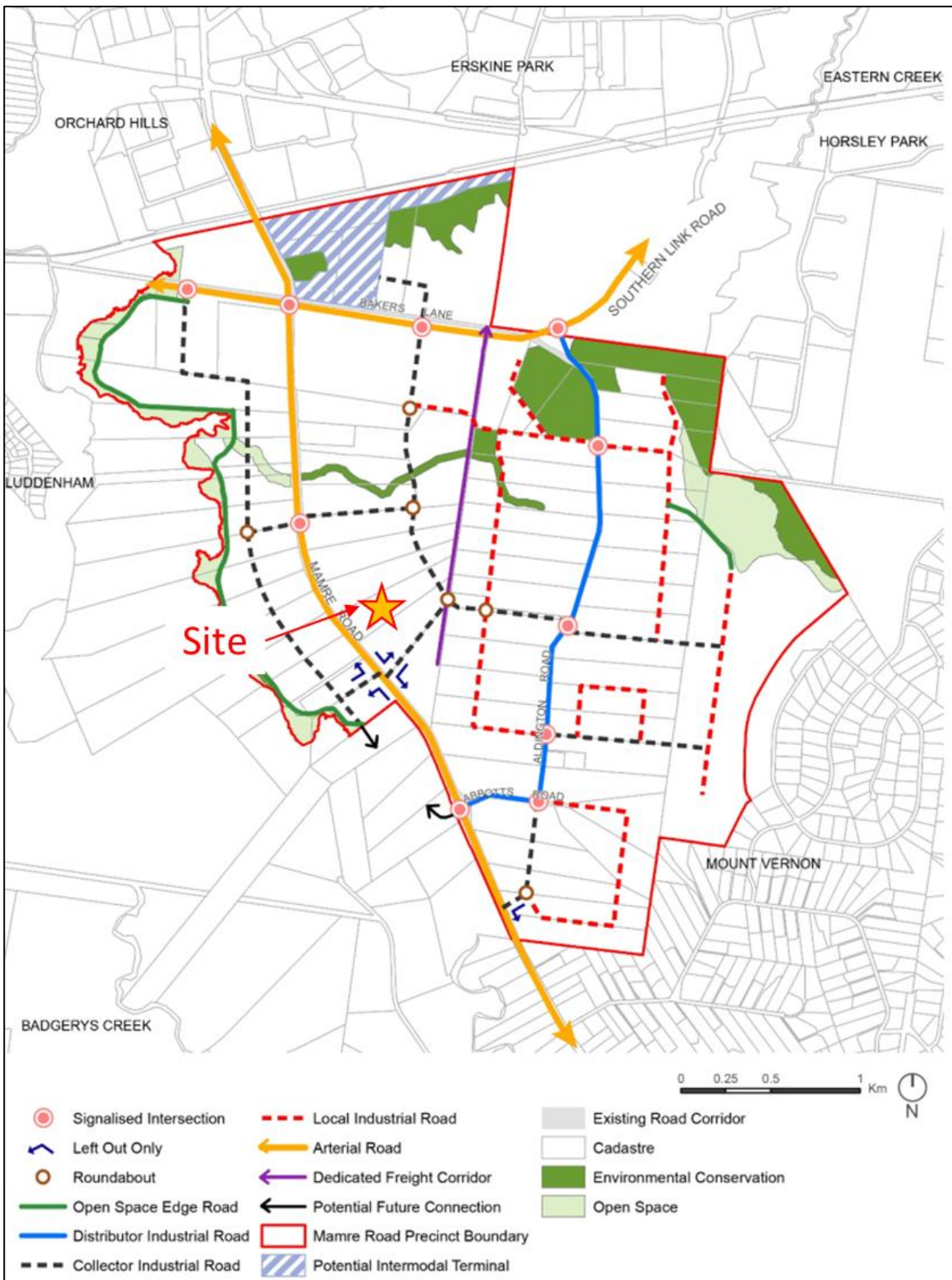


Figure 8: Indicative Road Network and Access Plan (Source: Mamre Road DCP 2021)

The requirements for the Industrial Local Road typology, as per the Mamre Road DCP, is shown within **Figure 9**.

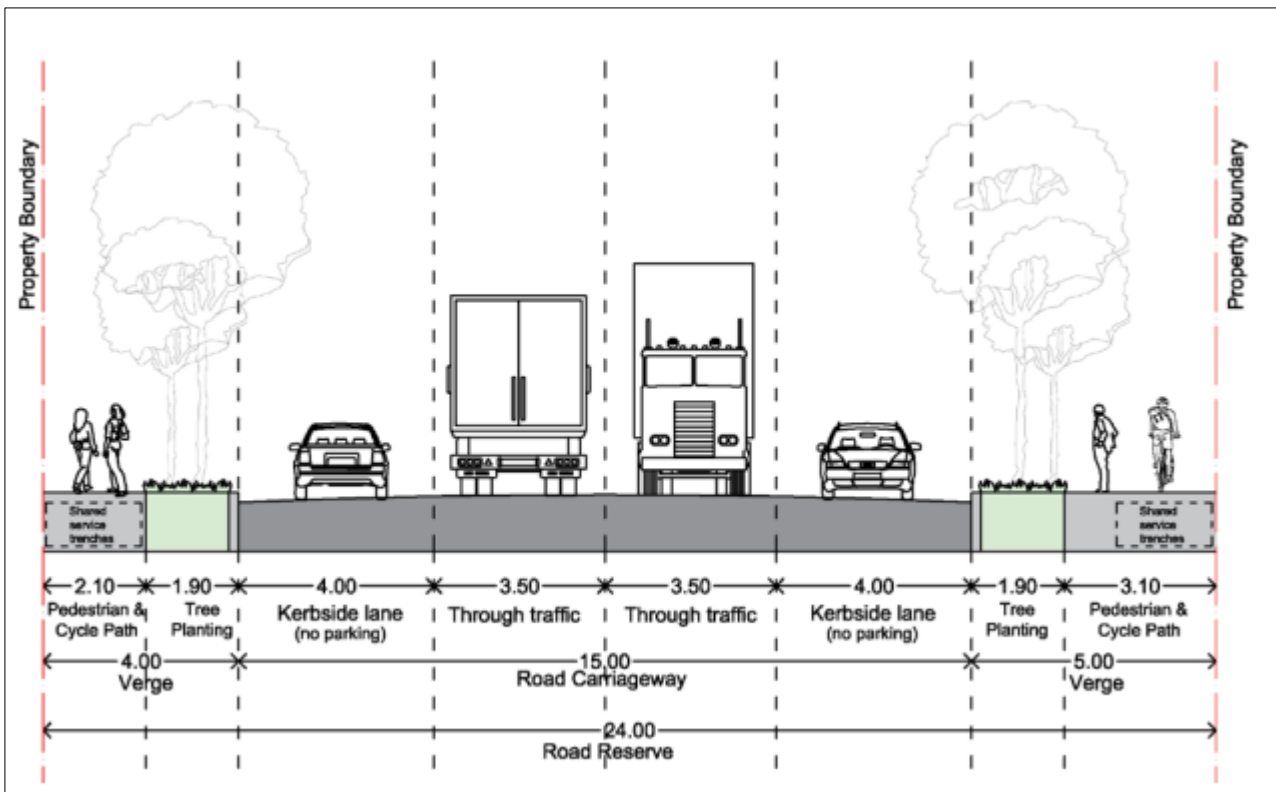


Figure 9: Mamre Road DCP Typical Industrial Local Road (Source: Mamre Road DCP 2021)

Furthermore, it is noted that the upgraded Mamre Road will include shared cycle and pedestrian pathways along its length. As shown in **Figure 9**, the Mamre Road DCP requires internal roads to provide a minimum footpath of 2.1m on one side and a minimum shared path of 3.1m on the opposing side of the road. It also requires roads to provide shared cycle and footpaths.

## 2.4 On Demand Services

### 2.4.1 Car Share

Car sharing has emerged as a cost effective, flexible alternative to private vehicle ownership. Provision of car share in the area could facilitate intermittent work trips that need to be made so that staff can commute by other modes.

As a future industrial area, it is not anticipated that car shares such would be particularly successful, particularly in the early stages of development. Nonetheless, given the benefits to reducing the need for a private vehicle, it will be worth considering its appropriateness as the area develops.

Prior to the commencement of car share providers, it is suggested to consider schemes such as provision of car share priority parking spaces, to actively encourage car sharing amongst staff.

## 2.5 Existing Travel Patterns

### 2.5.1 Journey to Work Data Analysis

Journey-to-Work (JTW) data from the Australian Bureau of Statistics (ABS) 2016 Census and specifically aggregated Destination Zones (DZ) have been referenced to understand the baseline travel characteristics of the Site. This data informs the initial targets and should be refined and updated as part of the monitoring process.

A summary of key travel modes for those travelling to the locality for work have been reviewed with regard for the surrounding Destination Zone 115184210, within the Horsley Park – Kemps Creek statistical area. The travel modes are presented in **Figure 10**.

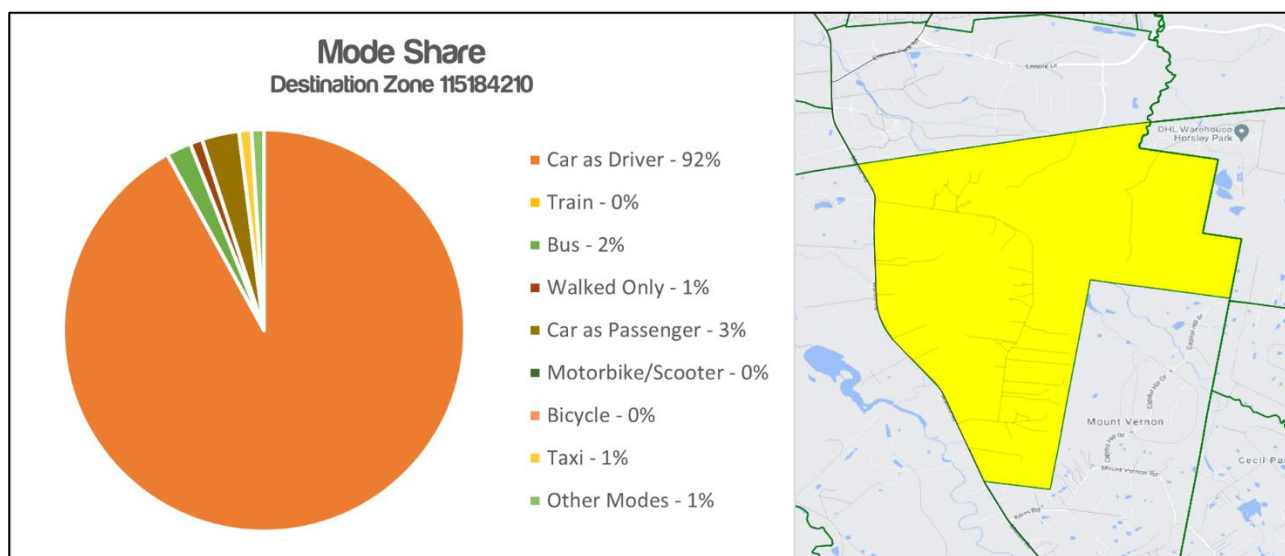


Figure 10: Travel Mode Share

It is evident that the private vehicle (car) is the overwhelming preferred mode of choice for commuters travelling to work in the area. The data indicates that 95% travel to work by car with 92% as the driver and 3% as passenger i.e. car-pooling.

This is reflective of the current nature of the area, which accommodates rural residential properties and agricultural businesses only. However, noting the future land use of the Site as industrial in nature, it is expected that the JTW data accurately reflects the current trends for travel to places of work at industrial sites.

The TfNSW (formerly Roads and Maritime Services) Guide to Traffic Generating Developments Updated Traffic Surveys, August 2013, provides details in relation to the principal mode of travel used by staff at the Erskine Park and Eastern Creek warehouses surveyed by TfNSW. These surveys indicate that 90% of all workers would travel via private vehicles, with 8% travelling as passengers. Therefore, the existing census data is reflective of existing travel of industrial development.

# 3 Development, Scope & Implementation of the Plan

## 3.1 Introduction

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This section sets out in broad terms how the FSTP will be developed and the scope of the FSTP.

## 3.2 Responsibility

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The responsibility for the future Travel Plans will lie with Site management and should form part of organisational policies. Future STPs should include a statement on company policy in relation to travel and should be endorsed by senior management.

## 3.3 Future STP Scope

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The future STP should address the following types of travel generated by the development:

- Commuter journeys by staff;
- Visitor journeys;
- Business travel; and
- Site related deliveries from contractors.

The future STPs are expected to have the most effect on commuter journeys by staff. While the operator will aim to encourage sustainable travel by visitors, ultimately staff travel is easier to influence.

The aim is to develop practical measures that are effective in reducing car use for all journeys to the Site.

## 3.4 Implementation

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A Travel Plan Coordinator (TPC) should be appointed to act as the primary point of contact for enquiries relating to the progress of the future Plans. It is recommended that a consistent TPC be appointed for the Site so as to achieve a coordinated approach. However, as the individual sites will be responsible for implementing their own STPs, this will be at the discretion of Site management. The TPC will manage all aspects of the STP, including the co-ordination and joint working practices between those on-site.

The TPC will promote participation in and commitment to the future STP from Site tenants and will work in partnership with all stakeholders to deliver the strategies and actions.

The TPC should be appointed before the Site becomes occupied, or within 1 month of the Site becoming occupied. Contact details for the TPC should be provided in the implemented Plan.

The main duties of the TPC are envisaged to be:

- Overseeing final development and implementation of the STP;
- Internal liaison to promote awareness of the STP amongst businesses and staff;
- Liaison with outside bodies, such as Penrith City Council (Council) and local bus operators, as required regarding the operation of the STP;
- Providing updated travel information to staff and visitors, as necessary; and
- Monitoring, reviewing and (if necessary) updating the STP.

## 3.5 Consultation

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It is essential that any parties that may play a part in the future of STPs have the opportunity to discuss further actions and solutions with one another. This would enable equitable input and feedback as well maximising their overall efficacy. For this reason, a coordinated approach to STPs should be implemented (subject to individual tenant participation) to assist in the consultation with the relevant parties, which could include the following:

- Council Traffic & Transport Department and Traffic Committee;
- Local Bus Operators; and
- TfNSW.

Other organisations may be added to this list as the Plans evolve.

## 3.6 Travel Mode Targets

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### 3.6.1 Introduction

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Based on the existing travel mode splits identified in **Section 2.5**, the Site and the surrounding areas are considered to have a low dependency on public and active transport. This is reflective of the current nature of the area.

However, noting the future land use of the Site as industrial in nature, it is expected that the JTW data accurately reflects the current trends for travel to places of work at industrial sites. The RMS Guide to Traffic Generating Developments – Updated Traffic Surveys itself provides details in relation to the principal mode of travel used by staff at the Erskine Park and Eastern Creek warehouses surveyed by TfNSW. These surveys indicate that 90% of all workers would travel via private vehicles with 8% travelling as passengers.

This section therefore sets out the targets for the reduction in car journeys associated with the Site, with consideration to the future land use in the area. Targets are the means of measuring the achievement of the objectives. They need to be clear, directly linked to the objectives, monitored and reviewed.

Questionnaire surveys will be conducted in the future that will form the updated travel mode baseline to further develop site-specific targets. The first surveys will be undertaken shortly after occupation. These surveys will be repeated at a suitable time to assess the effectiveness of the implemented STP; the targets are to be reviewed to align with the most up-to-date information.

The implemented STPs are to be in place for the lifetime of the development. The initial timeframe in which targets need to be monitored and reviewed will be reviewed every 1-2 years, for a minimum of 5 years.

### 3.6.2 Mode Share Targets

It is essential that mode share targets be achievable with consideration for the public transport, walking and cycling opportunities available within proximity to the Site. Targets should also be factoring in what future transport options could reasonably be used to access the Site, and also the nature of the development itself.

As per **Section 1.2**, the AECOM Report provides a mode share target for public & active transport of 20% and by car of 80% by 2056 for the nearby Badgerys Creek Precinct. Sites within the MRP should ideally reflect a similar target.

Further, it should be recognised that during the earlier stages in development of the MRP, it would be anticipated that change in travel behaviour will be slower than in other areas, while the public and active transport networks are still being integrated.

The targets should therefore be revisited and updated after the opening of the relevant development as part of the monitoring process. The preliminary targets are nominated in **Table 1**, which represents a 5-year target to coincide with the minimum 5 years of monitoring and review.

**TABLE 1: PRELIMINARY 2026 MODE SHARE TARGETS**

Travel Mode	Existing Mode Share of Employees	Proposed Targets	Relative Change
Car as driver	92%	88%	-4%
Car as passenger	3%	3%	-
Train	0%	0%	-
Bus	2%	4%	+2%
Walked only	1%	1%	-
Motorbike/Scooter	0%	1%	+1%
Bicycle	0%	1%	+1%
Taxi	1%	1%	-
Other Modes	1%	1%	-

# 4 Measures and Action Strategies

## 4.1 Measures

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Below is a range of measures that need to be implemented if the objectives of this FSTP are not met. It is critical to note that these are suggested measures and are not necessarily likely to be applicable in the early stages of development in the MRP.

This section needs to be reviewed and confirmed prior to implementation of any future Plan.

- An introduction to the FSTP for all staff, setting out its purpose and objectives.
- Provision of public transport travel information for staff, customers and visitors.
- Encouragement of car sharing, both amongst staff on site and in the wider context.
- Provision of car share spaces (future potential measure) and / or provision of a business “pool car” while public car share operators are limited in the area.
- Assisted cycle purchase schemes.
- Interest free loans to assist with cycle purchase, cycle equipment purchase etc.
- A transport section on the company website with links to local bus operator sites, to ensure that travel information is always up to date.
- The provision of transport information for visitors to the Site.

## 4.2 Strategies

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Seven (7) main strategies are identified, and the actions required for each are detailed in **Table 2**. The table details specific actions that could be implemented as part of a future site-specific STP (subject to tenant requirements) and the party responsible for implementing each action.

These actions must be reviewed at regular intervals to ensure that the mode split targets are being met. By that principle, this document is classed as a live document and subject to regular review. It is important to note, that the actions should not be taken as mandatory but rather potential options that should be investigated and implemented by future inhabitants of the development.

**TABLE 2: PROPOSED FSTP ACTION STRATEGIES**

STRATEGY	HOW IT WORKS	IMPLEMENTATION	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
<b>1 Travel Planning and Demand Management</b>					
1.1 Green Travel Plans	<ul style="list-style-type: none"> <li>Develop a STP to provide information for Travel Access Guide (TAG). Refer to <b>Appendix A</b>.</li> <li>Management of STPs.</li> <li>Promotion of STPs.</li> </ul>	<p>Provide information resources and implement a range of additional initiatives to reward and encourage those who travel actively to help develop a healthy, active culture and meet travel targets.</p> <p>Continued support of the person/organisation in charge of managing the STP. This would happen with the appointment of a TPC.</p> <ul style="list-style-type: none"> <li>Undertake a STP event annually.</li> <li>Promote the following initiatives via bulletins, web pages, social media:                             <ul style="list-style-type: none"> <li>Travel Survey Results; and</li> <li>Progress and update of STP.</li> </ul> </li> </ul> <p>Retain a current copy of the TAG to be relevant, useable, and accessible. TAG should be displayed in communal areas.</p>	<p>Building Manager to be responsible for overall implementation of final STP and providing annual reporting on STP outcomes to Council.</p> <p>Tenant to develop Company specific travel plan based on final STP prior to the commencement of a new lease/sale of property.</p> <p>Company/Staff/Visitors shall be responsible for ongoing implementation of Company assigned actions and participation in annual monitoring and reporting process to Council</p>	Upon completion of the development and ongoing annual STP events	Tenant / Business Owner
1.2 Travel Information Points	<ul style="list-style-type: none"> <li>Establish locations such as travel information points where staff and visitors and others can access travel information via interactive platforms.</li> <li>Promotion of STPs</li> <li>Provision of travel and transport information options</li> </ul>	Establish locations such as travel information points where staff, visitors and others can access travel information via interactive platforms. These can be similar to wayfinding kiosks provided at public transport stations, shopping centres etc. Information could include walking and cycling routes, bicycle parking, public transport availability,	Tenant / Business Owner	Subject to employer preference.	Tenant / Business Owner

STRATEGY	HOW IT WORKS	IMPLEMENTATION	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
		routes, real-time timetables and shared vehicles.			
1.3 Flexible Working Hours	Allow employees the flexibility to commute outside peak periods to reduce overall congestion and travel time.	Manage staff rosters where possible.	Tenant / Business Owner	Subject to employer preference. Action to be considered by employers / visitors as part of an employer specific STP to be developed and forwarded to Council prior to building occupation.	Tenant / Business Owner
1.4 Teleworking	Provide the option to work remotely (where possible) to reduce the number of vehicles travelling to the development and encourage teleconferencing rather than travelling to meetings.	Manage staff rosters and develop work-from-home policies and procedures, where possible.	Tenant / Business Owner	Subject to employer preference. Action to be considered by employers / visitors	Tenant / Business Owner
<b>2 Promoting Public Transport</b>					
2.1 Opal Card Loan Schemes / Subsidising Schemes for Public Transport Travel through Pre-paid Credit Cards	Company may consider subsidising staff public transport travel.  Alternatively, staff can pay for their own Opal Cards / pre-paid travel card through their salary, spreading the cost over the year to make it more affordable.	Subject to owner / User negotiations and incentives.	Tenant / Business Owner / TPC	Subject to employer. Can be implemented at building occupation	Tenant / Business Owner
2.2 Maximise Bus Service Frequency	Meet or exceed Transport NSW bus planning guidelines.	Decrease headway where possible, especially during peak periods. Report back to Transport for NSW on perception of bus service adequacy	TfNSW	Developer to hold on-going discussions with TfNSW after each annual review of STP and report on relevant findings	TfNSW
2.3 Provide Bus Stops with Shelter Facilities	Ensuring provision of bus stops suitable for waiting areas for commuters, the majority of which would likely be workers associated with the development.	Propose or recommend improvements to the proposed / implemented bus stops along Mamre Road to TfNSW.	TfNSW	Subject to discretion of TfNSW. Advisable to be prior to the opening of the development	TfNSW

STRATEGY	HOW IT WORKS	IMPLEMENTATION	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
2.4 Public Transport for Work Travel	The company and the TPC can promote public transport as one of the main preferences for work travel. This should be supported by all users and visitors to development having access to Opal Cards.	Subject to owner / User negotiations and incentives.	TPC	Subject to employer. Can be implemented at building occupation	Tenant / Business Owner
2.5 Lobby for Precinct Wide Shuttle Service	Shuttle service initiative that would transport staff to / from the MRP to the Railway Station.	Provision of bus shuttle service running between the development and either nearby homes or proposed Luddenham Station. Tenant / Business Owner on the Site would arrange for a bus shuttle service that would travel between the development / Site and the homes / Station at a dedicated time / interval.  Persons signing onto the program or service would be accountable for turning up at the appropriate times so as to not delay the service. This should be promoted as part of the STP and on communal locations such as main website or notice boards.	TPC to lobby Estate Manager / Owner	Ongoing in the workplace. Updates can be made to organisation as appropriate	Estate Owner / Manager
<b>3 Promoting Carpooling</b>					
3.1 Open Car Sharing	Where anyone in a defined geographical area can join a ride sharing scheme. This involves no input from the employer and should be on the onus of staff to schedule.	This can usually be accomplished by having notice boards in business premises which are a good place for employees to find colleagues looking to share journeys. Utilise car share spaces provided and actively promote on site to staff and visitors.	Staff	Ongoing in the workplace	Fuel costs can be arranged and split equitably by those involved
3.2 Closed Car Sharing	The company / department sets up an in-house car-matching scheme	The company / department sets up an in-house car-matching scheme and gets staff to participate. A points system can be setup to encourage friendly competition between staff and overall reduce carbon footprint from single car usage. Utilise car	Company, TPC	Ongoing in the workplace. Updates can be made to organisation as appropriate	Tenant / Business Owner

STRATEGY	HOW IT WORKS	IMPLEMENTATION	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
		share spaces provided and actively promote on Site to staff and visitors. Reward regular car sharers by providing gifts such as free car washes.			
3.3 Third-party Car Sharing Program	Companies such as Liftshare are an online service that facilitates journey sharing between individual users, as well as providing separate services for businesses, organisations and events.	They allow users to search for and post details online of journeys; by car, bike, taxi or walking, for which they wish to find someone else with which to share the journey with.  Users can search for people who have entered similar journeys and contact them, wait to be contacted by someone searching for a journey of their own.	Staff – encouraged by TPC	Ongoing in the workplace	Staff
3.4 Carpool Week	Arrange for a dedicated carpool campaign week to promote the benefits of carpooling.	One week of the year where a carpool theme is emphasised around the workplace including promotion such as a launch event. Intention is to show that carpooling is a real alternative to travel to work. Provide prize incentive as part of competition to promote raise awareness.	Tenant / Business Owner	One week per calendar year	Tenant / Business Owner
<b>4 Promoting Cycling</b>					
4.1 Create a Bicycle Users Group (BUG)	BUGs are local groups of like-minded bike riders who get together generally for social riding in their area. For the purposes of the workplace, this can be adapted as a way of creating as social and healthy aspect of travelling to work.  As a minimum, the establishment of the BUGs should be promoted as Precinct wide initiative.	The BUGs can set up amongst employees and arranged with the help of TPC. An online group such as an email thread, Teams Chat group would be the main channel where participants can communicate and organise rides, suggest areas for improvement. A designated leader would be appointed and ideally affiliated with Bicycle NSW who would manage queries and support in enabling a comfortable riding experience for all wishing to partake.	Tenant / Business Owner, TPC	Ongoing in the workplace	Tenant / Business Owner

STRATEGY	HOW IT WORKS	IMPLEMENTATION	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
		BUG would be made aware of the recent upgrades to cycling infrastructure in the area.			
4.2 Providing & Maintaining End of Trip Facilities	Providing facilities such as showers, change rooms, lockers. For the initial stages of development, it is recommended to provide facilities compliant with the relevant controls, and as the Site develops further, they should be reviewed as part of the STP monitoring process to meet any increase in demand.	<p>Bicycle parking spaces will be provided for residents and staff. Access to other facilities such as showers will also be made.</p> <p>Developer to provide bicycle parking spaces in the parking area together with male and female lockers, male and female showers and an accessible shower as per Building Plans.</p> <p>Accordingly, the following bicycle rates should be considered under the Mamre Road DCP:</p> <ul style="list-style-type: none"> <li>Office Bicycle Parking requirement: 1 space per 600m<sup>2</sup> GFA (over 1,200m<sup>2</sup> GFA); and</li> <li>Warehouse Bicycle Parking requirement: 1 space per 1,000m<sup>2</sup> GFA (over 2,000m<sup>2</sup> GFA).</li> </ul>	Developer / Estate &/or warehouse Owner / Manager	To be provided at sports complex completion	Developer / Estate &/or warehouse Owner / Manager
4.3 Promote Bicycle Initiatives	Promotion of bicycle initiatives – NSW bicycle week, Ride to Work etc.	Promote and encourage cycling in the precinct and should actively participate in recognised NSW government bicycle initiatives such as bicycle week and cycle to workday.	TPC	To be promoted annually	Developer / Estate &/or warehouse Owner / Manager
4.4 Advertise Bicycle Routes	Promotion of bike lanes through the TAG.	Prepare Site specific maps with guidance on the most optimal way of travelling to/from the Site by bicycle	TPC	To be promoted and provided at communal areas such as key information kiosks within facility	Tenant / Business Owner

STRATEGY	HOW IT WORKS	IMPLEMENTATION	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
<b>5 Promoting Walking</b>					
5.1 Providing End of Journey Facilities	Provision of sufficient end of trip facilities such as showers, change rooms, lockers etc to maximise pedestrian activity throughout the Site and the wider precinct.	Provide pedestrian facilities and amenities in close proximity in the Site and at the bus stops. Developers to provide male and female lockers, male and female showers and an accessible shower as per Building Plans.	Developer	To be provided at completion of development	Tenant / Business Owner
5.2 Walking Routes	Incentivise travelling by foot by highlighting possible routes particularly those to nearest bus stops	Prepare Site specific maps highlighting pedestrian desire lines and optimal routes to provide guidance to pedestrians to key public transport and car sharing locations.	Tenant / Business Owner	To be promoted and provided at communal areas such as key information kiosks within facility	Tenant / Business Owner
5.3 Promote Walking Initiatives	Promotion of walking initiatives: walk to game / training day, pedometers / step challenge / gamification of walking / reward programs based on steps to elevate pedestrian activity throughout the Site and to / from public transport points.	Promote and encourage walking in the complex and should actively participate in recognised NSW government initiatives such as walk to workday and pedometer / step challenges.  Friendly challenge competitions can be organised to incentivise and encourage increased walking activity amongst users and visitors to the facilities.	Tenant / Business Owner, TPC	To be implemented monthly or as appropriate throughout the calendar year.	Tenant / Business Owner
<b>6 Restraining Parking</b>					
6.1 Limited Parking Allocation On Site	Over-provision of parking spaces will inherently encourage travel by car. By restricting parking supply, you can discourage non-essential car use.	Consideration to reducing the number of car parking spaces either in actual terms or managing access via permit parking, paid parking or needs based parking policies, is one of the most direct and effective ways of reducing car use.	Lot Management	To be consider during the operation of the development; as public and active transport connections improve, Lot management can consider restricting parking availability.	Tenant / Business Owner

STRATEGY	HOW IT WORKS	IMPLEMENTATION	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
<b>7 Influencing Travel Behaviour</b>					
7.1 Provision of Sustainable Travel Packs to Employees and Visitors	Introduces employees and visitors alike to the STP and provides information on walking and cycling routes, and travel by bus & train, timetables, and access routes. This would include a TAG.	To be distributed to staff, visitors, and neighbouring properties. Contact details as to who is responsible for the STP will also be provided. This would include a TAG.	Tenant / Business Owner, TPC	Travel Packs to be provided upon occupancy of building to employees.	Tenant / Business Owner

## 4.3 Communications Strategy

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### 4.3.1 Welcome Packs

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New staff shall be provided with a 'welcome pack' as part of the on-site induction process which includes a STP Pamphlet and other information in relation to sustainable transport choices. This pack shall include a copy of the STP and a Travel Access guide (TAG) as provided in **Appendix A**. Furthermore, general information regarding the health and social benefits of active transport and advice on where to seek further information shall also be provided. It is recommended that an electric copy of the welcome pack be created and made available to staff.

### 4.3.2 Accurate Transport Information

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In addition to these 'welcome packs', a copy of the TAG (as shown in **Appendix A**) shall be clearly displayed in communal areas of the Site including (but not limited to):

- The staff lunch room;
- Lift lobby area and entrances to buildings; and
- Any marketing material associated with the Site, such as websites and newsletters.

# 5 Monitoring Strategy

## 5.1 Plan Maintenance

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This Plan shall be subject to ongoing reviews and will be updated accordingly. Regular reviews will be undertaken by the TPC. As a minimum, a review of the STP would occur every 1-2 years.

The key considerations when reviewing or monitoring the STP are as follows:

Update baseline conditions to reflect any changes to the transport environment in the vicinity of the Site such as changes to bus services, new cycle routes, etc. Furthermore, it is also important to:

- Track progress against target travel mode targets;
- Identify any shortfalls and develop an updated action plan to address issues; and
- Ensure travel modes targets are updated (if necessary) to ensure they are realistic and remain ambitious.

## 5.2 Monitoring

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To record the overall success, as well as the effectiveness of the individual measures, monitoring and reviewing the STP is to be conducted at regular intervals. The TPC will act as the primary point of contact for all enquiries relating to the STP's progress.

The STP will be monitored around every 1-2 years, with the first survey being carried out shortly after the first occupation of the Site. Travel mode surveys would determine the proportion of persons travelling to/from the Site by each transport mode. This will be in the form of annual travel mode questionnaire surveys to be completed by all persons attending the Site, as far as practicable. A sample of a typical travel mode questionnaire form is included in **Appendix B**.

If targets are not met at the end of the initial period of monitoring, the STP will be reviewed, new measures introduced and would be reassessed at the next monitoring stage.

# Appendix A. Travel Access Guide

# Travel Access Guide

Aspect Industrial Estate

Lots 54-58  
DP259135

Mamre Road

Kemps Creek  
2178

## Estate Detail



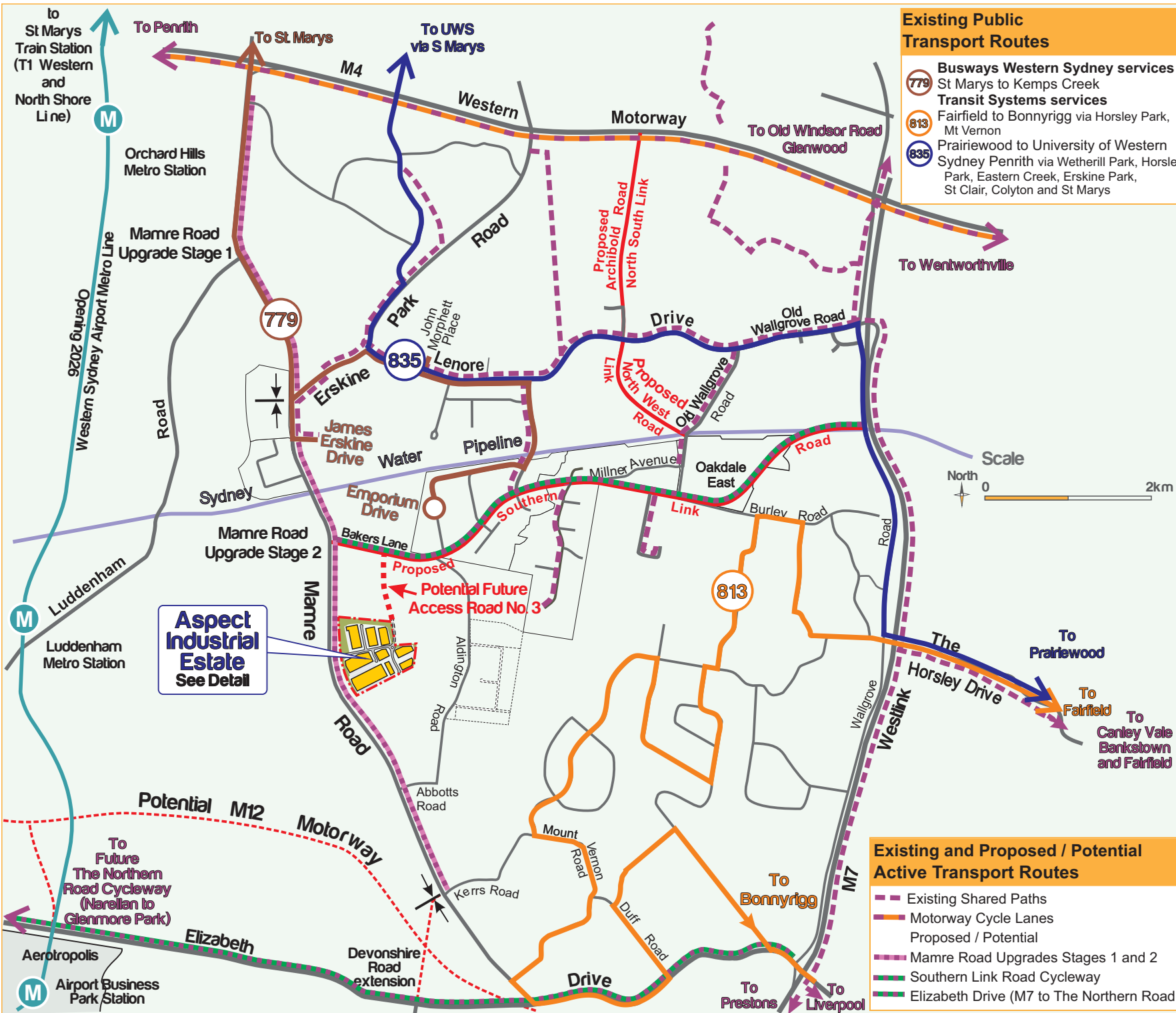
August 2022

## Existing Public Transport Routes

- Busways Western Sydney services**
- 779** St Marys to Kemps Creek
- Transit Systems services**
- 813** Fairfield to Bonnyrigg via Horsley Park, Mt Vernon
- 835** Prairiewood to University of Western Sydney Penrith via Wetherill Park, Horsley Park, Eastern Creek, Erskine Park, St Clair, Colyton and St Marys

## Existing and Proposed / Potential Active Transport Routes

- Existing Shared Paths
- Motorway Cycle Lanes
- Proposed / Potential
- Mamre Road Upgrades Stages 1 and 2
- Southern Link Road Cycleway
- Elizabeth Drive (M7 to The Northern Road)



**Aspect Industrial Estate**  
See Detail

# Appendix B. Sample Questionnaire

# Instructions for Surveyor(s)

1. The Survey Form (over page) should be completed by EVERY PERSON attending the site on a particular day.
2. This survey should be completed SEPARATELY for EACH TRIP undertaken

# Travel Mode Questionnaire Survey Form

Date:

Approximate Time:

**Q1. Are you one of the following?**

- |                                                    |                                                          |
|----------------------------------------------------|----------------------------------------------------------|
| <input type="checkbox"/> Warehouse staff           | <input type="checkbox"/> Casual contractor               |
| <input type="checkbox"/> Office staff              | <input type="checkbox"/> Company driver / sub-contractor |
| <input type="checkbox"/> Courier / office delivery | <input type="checkbox"/> Other (Please specify).....     |

**Q2. How did you travel to / from the site today?**

- |                                       |                                                      |
|---------------------------------------|------------------------------------------------------|
| <input type="checkbox"/> Walked only. | <input type="checkbox"/> Car share vehicle           |
| <input type="checkbox"/> Bicycle only | <input type="checkbox"/> Motorcycle / scooter        |
| <input type="checkbox"/> Train        | <input type="checkbox"/> Car (as passenger)          |
| <input type="checkbox"/> Bus          | <input type="checkbox"/> Car (as driver)             |
| <input type="checkbox"/> Taxi         | <input type="checkbox"/> Other (Please specify)..... |

**Q3. If you drove to the site, where did you park?**

- Not applicable – did not drive.
- On-site car park
- On-site within truck hardstand
- Other (Please specify).....

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# Appendix F. Correspondence to TfNSW

Rebecca Butler-Madden

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From: Russell Hogan <russell.hogan@mirvac.com>  
Sent: Thursday, 14 July 2022 11:21 AM  
To: Laura Van putten; Development Sydney; development.sydney@rms.nsw.gov.au  
Cc: Daniel Brook; Kym Dracopoulos; Alexandra Chung; Adam Heinrich; Jacqueline Parker  
Subject: AIE - SSD-10448 - Mod 2 - Lot 9 - TfNSW Consultation  
Attachments: 21250\_AIE\_MOD 2 - MP2-02\_H\_SSDA Estate Masterplan.pdf; 21250\_DA910\_K\_LOT 9 SITE & WAREHOUSE FLOOR PLAN.pdf

Dear TfNSW,

**RE: AIE - SSD-10448 - Mod 2 - Lot 9 - TfNSW Consultation**

We would like to provide TfNSW with opportunity to comment on an SSD DA application Mirvac is preparing for Warehouse 9 at Aspect Industrial Estate prior to formal referral from the Department of Planning as well as other upcoming modifications.

The Warehouse 9 SSD DA seeks consent for minor amendments to lot earthworks and infrastructure from the initial SSD, the construction, fit out and operation of the warehouse and logistic facility with associated car parking for Lot / Warehouse 9. Separately Modification Application 2 (MOD 2) will seek to change the Concept Plan associated with SSD-10448. MOD 2 relates to Warehouse/Lot 6, 7, 8, 9, 10 and 11 area and Access Road 4, located at the south western portion of the AIE. Find a copy of the MOD 2 Estate Masterplan attached.

The customer in the warehouse is Winning Services, a company that includes three of Australia's leading appliance retailers: Winning Appliances, Appliances Online, and Home Clearance (<https://www.winningservices.com.au/>).

Specifically, the SSD DA will seek consent for:

- Construction of new 65,000sqm building for use as 'warehouse & distribution'.
- The following works are proposed in support of the warehouse building operations:
  - 256 parking spaces across the lot's north-and eastern frontages with driveway access to/from Access Road 4.
  - Appropriate hardstand areas, 36m wide north and 36m south of Warehouse 9.
  - Internal truck access roads with access from Access Road 3 to the east and egress to Access Road 4 to the north.
  - Appropriate loading dock areas at the north and south elevations.
  - 150sqm Dock Office at the north elevation
  - 60sqm Dock Office at the south elevation
  - 1,400sqm Main Office at the eastern elevation.
- Fit-out of the warehouse for the proposed use.
- Construction of vehicular crossovers to Access Road 4 (egress) and Access Road 3 (ingress).
- On lot landscaping.
- On lot stormwater management.
- On lot infrastructure servicing.
- Operation of the warehouse & distribution facility 24 hours a day 7 days a week.

An Architectural Plan of the intended lot and building layout is attached.

We respectfully request that TfNSW provide any comments relating to the Warehouse 9 SSD DA within 14 days of this email, being **28 July 2022**. We note that the SSD DA will be formally referred to TfNSW by the Department as part of the SSD DA application process.

**As mentioned, we believe it would be beneficial to arrange a meeting to step through the proposal and any questions you may have. Is this something we can set up on a monthly basis?**

Should you have any questions or require any more information, please do not hesitate to contact us.

Kind Regards,

**Russell Hogan**

Senior Development Manager  
Integrated Investment Portfolio

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Level 28, 200 George Street Sydney NSW 2000 Australia

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Mirvac acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Owners of the lands and waters of Australia and respects their connection to the land and water. We pay our respect to their Elders.