



Transport Assessment

Proposal Planning, National Storage

11-11a Edinburgh Road, Marrickville NSW 2204

31/10/2024

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APPENDICES

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Appendix B. SIDRA Modelling Results

Glossary

Acronym	Description
AGRD	Austroads Guide to Road Design
AGTM	Austroads Guide to Traffic Management
CC	Construction Certificate
Council	Inner West Council
DA	Development Application
DCP	Development Control Plan
DoS	Degree of Saturation
FSR	Floor space ratio
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	Section 4.55 Modification (also referred as a S4.55)
MRV	Medium Rigid Vehicle (as defined by AS2890.2:2018)
NHVR	National Heavy Vehicle Regulator
OC	Occupation Certificate
RMS Guide	Transport for NSW (formerly Roads and Traffic Authority), Guide to Traffic Generating Developments, 2002
S4.55	Section 4.55 Modification (also referenced as MOD)
S96	Section 96 Modification (former process terminology for an S4.55)
SRV	Small Rigid Vehicle (as defined by AS2890.2:2018)
TfNSW	Transport for New South Wales
TIA	Transport Impact Assessment
TIS	Transport Impact Statement
veh/hr	Vehicle movements per hour (1 vehicle in & out = 2 movements)

1 Introduction

1.1 Overview

Ason Group has been engaged by National Storage to prepare a Transport Assessment (TA) report to support a Pre-Gateway Planning Proposal (PP) at 11-11a Edinburgh Road, Marrickville (the Site). The PP is required to facilitate National Storage's proposed extension of the existing facility on the Site.

A detailed development proposal has already been developed to ensure that the Site can address National Storage's requirements for the Site which will include a consolidation of storage facilities in the area, as well as the provision of a Wine Ark Facility. The proposal developed includes an extension of an existing self-storage warehouse (2 Storey) as well as a proposed multi-storey (7 Storey) self-storage buildings.

The Site is located within the Inner West Council (LGA) and therefore consultation has already been undertaken with Council to inform the final Pre-Gateway PP submission. This Transport Assessment has been prepared with consideration to the feedback provided by Council during this process.

1.2 Transport Assessment Objectives

The broad objective of this Study is to carry out preliminary investigations into the traffic and transport impacts of the PP. As discussed, consultation and an assessment of the PP has already been conducted, and formal comments have been received from both Council and Transport for New South Wales (TfNSW). As such, a key purpose of this TA is to provide for an assessment which responds to the specific requests received and discussions held.

More precisely, the investigations undertaken include:

- Review of existing and future conditions and road network of the study area;
- Collation and analysis of traffic data / information;
- Prediction of future trips associated with the intended use;
- Evaluation of key intersections;
- Assessment of on-site parking provision, and
- Confirming that the proposal can provide a design compliant with the relevant Australian Standards (subject to further assessment at Development Application stage).

1.3 Reference Documents

In preparing this TA, Ason Group has referenced the following key planning documents:

- Marrickville Development Control Plan (DCP) 2011
- Inner West Local Environmental Plan (LEP) 2022

Ason Group has also referenced the following policies and guidelines relevant to the assessment:

- Australian Standard 2890.1:2004 Parking Facilities – Off-Street Car Parking (AS2890.1:2004);

- Australian Standard 2890.2:2018 Parking Facilities – Off-Street Commercial Vehicle Facilities (AS2890.2:2018);
- Australian Standard 2890.3:2015 Parking Facilities – Bicycle Parking (AS2890.3:2015);
- Australian Standard 2890.6:2009 Parking Facilities – Off-Street Parking for People with a Disability (AS 2890.6:2009);
- Roads and Maritime (now TfNSW) Guide to Traffic Generating Developments Updated Traffic Surveys, August 2013 (RMS Guide Update);
- Road Traffic Authority (now TfNSW) Guide to Traffic Generating Developments, October 2002 (RTA Guide); and
- Disability (Access to Premises – Buildings) Standards 2010 (Access to Premises Standards).
- Aurecon Self-Storage Facility Traffic and Parking Study 2009.
- San Diego Municipal Code- Trip Generation Manual 2003

The other document referenced in the development of this TA is:

- Colston Budd Rogers & Kafes Pty Ltd, Traffic and Access Report for Proposed Warehouse, Distribution Centre and Office Development, 74 Edinburgh Road, Marrickville, October 2020 (Woolworths Report)

2 The Proposal

2.1 Overview

A detailed proposal has been developed for the Site, with the PP required to amend the Floor Space Ratio (FSR) control of the LEP. The Proposal will provide for the expansion of the existing National Storage facility alongside provision of a Wine Ark facility and will consolidate existing facilities within wider area.

Note that Wine Ark provides for temperature-controlled storage of wines. The facility serves customers who collect wine and require specialist long-term storage of wine. Therefore, from a traffic and parking consideration, the impacts will be very low.

In summary, the Proposal relates to:

- Multi-story (7 Storey) self-storage building envelopes, comprising:
 - Ground floor with a total GFA of 4,954m²
 - Level 1 with a total GFA of 5,111m²
 - Level 2 with a total GFA of 2,498m²
 - Levels 3 to level 6, each with a GFA of 2,546m²

In summary, the total proposed GFA, including the existing self-storage warehouse, is equal to 22,745m²

Reduced copies of the site plan, prepared by HAL are provided in below.

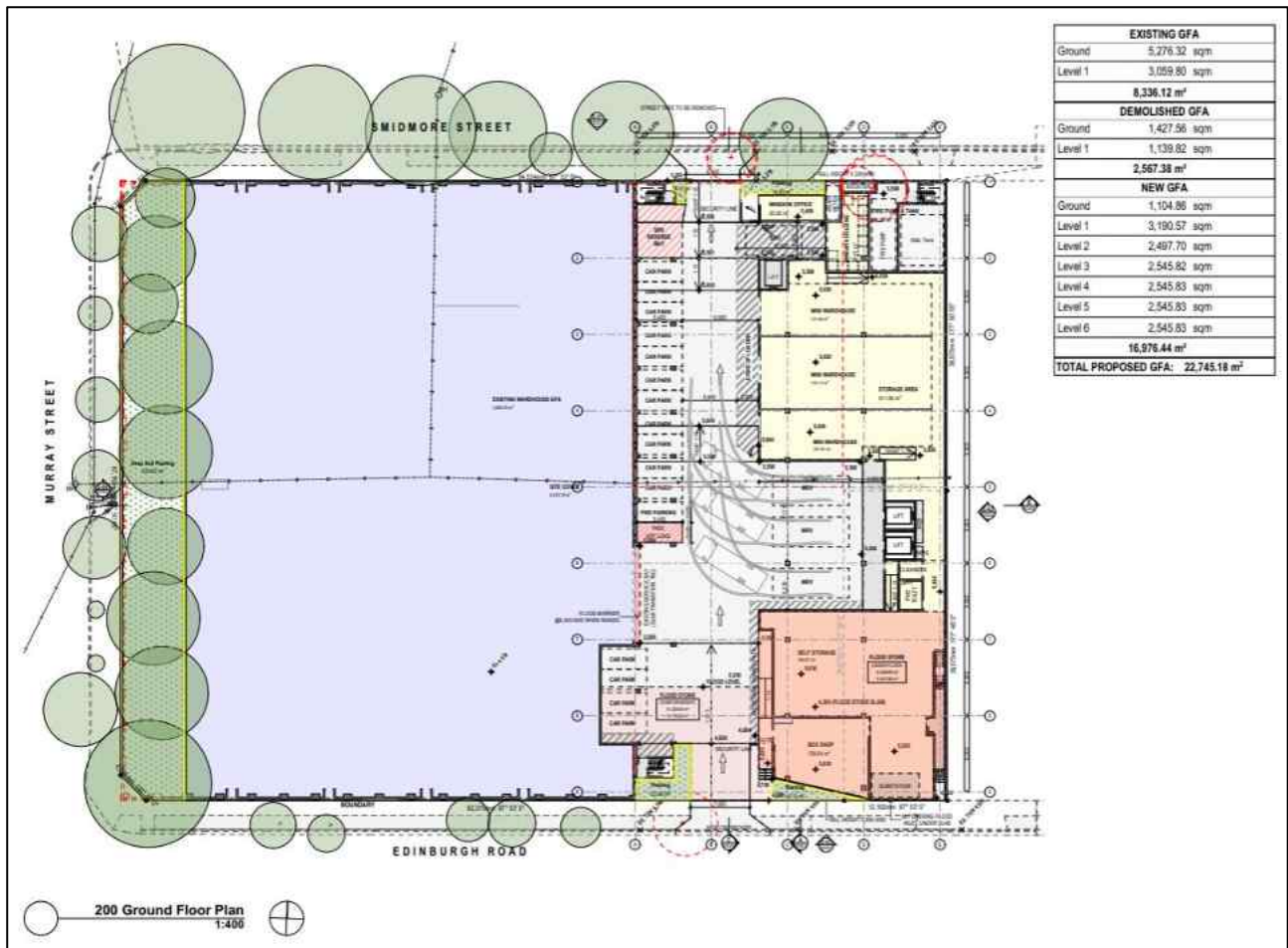


Figure 1: Ground Floor Plan

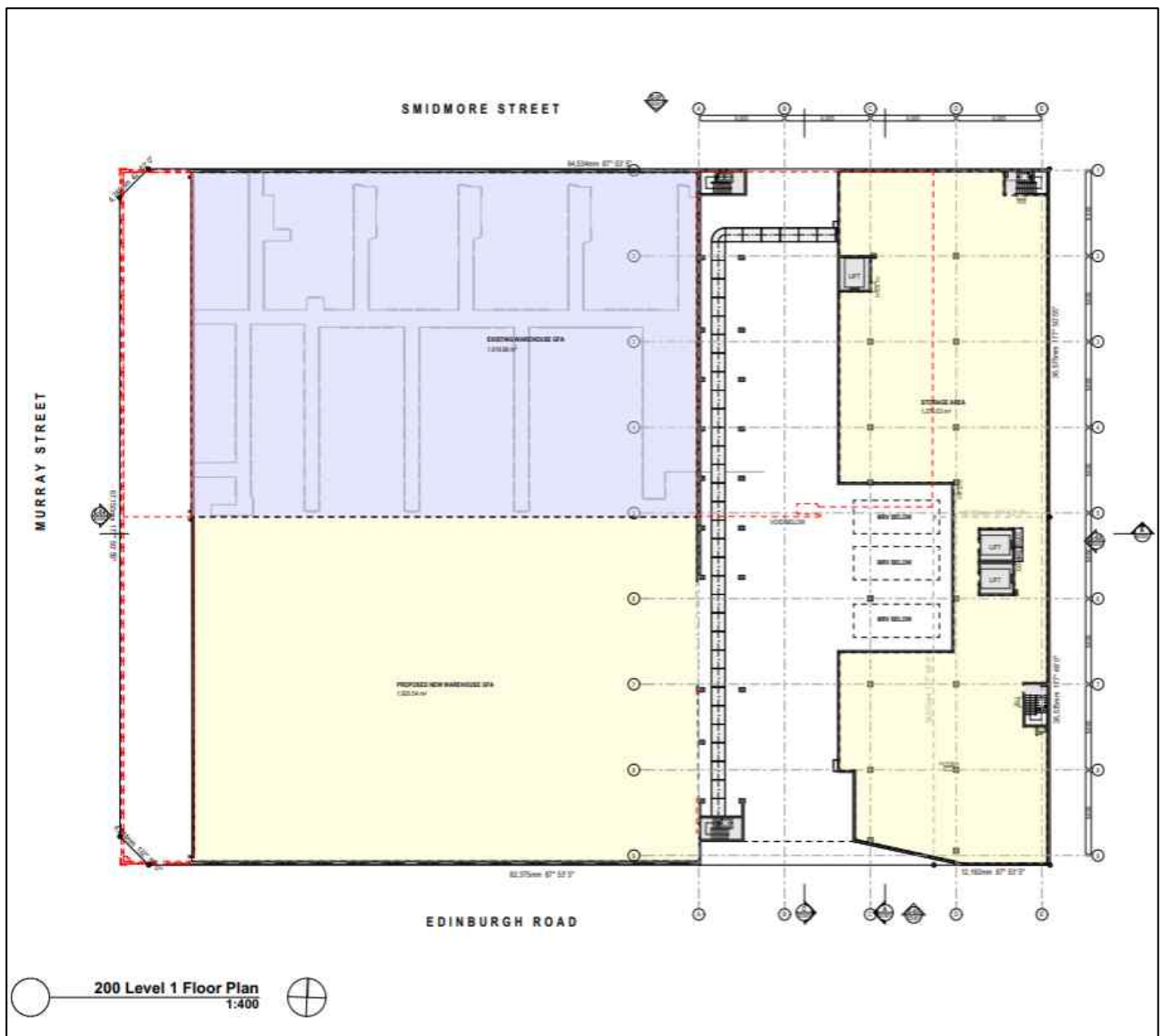


Figure 2: Level 1 Plan

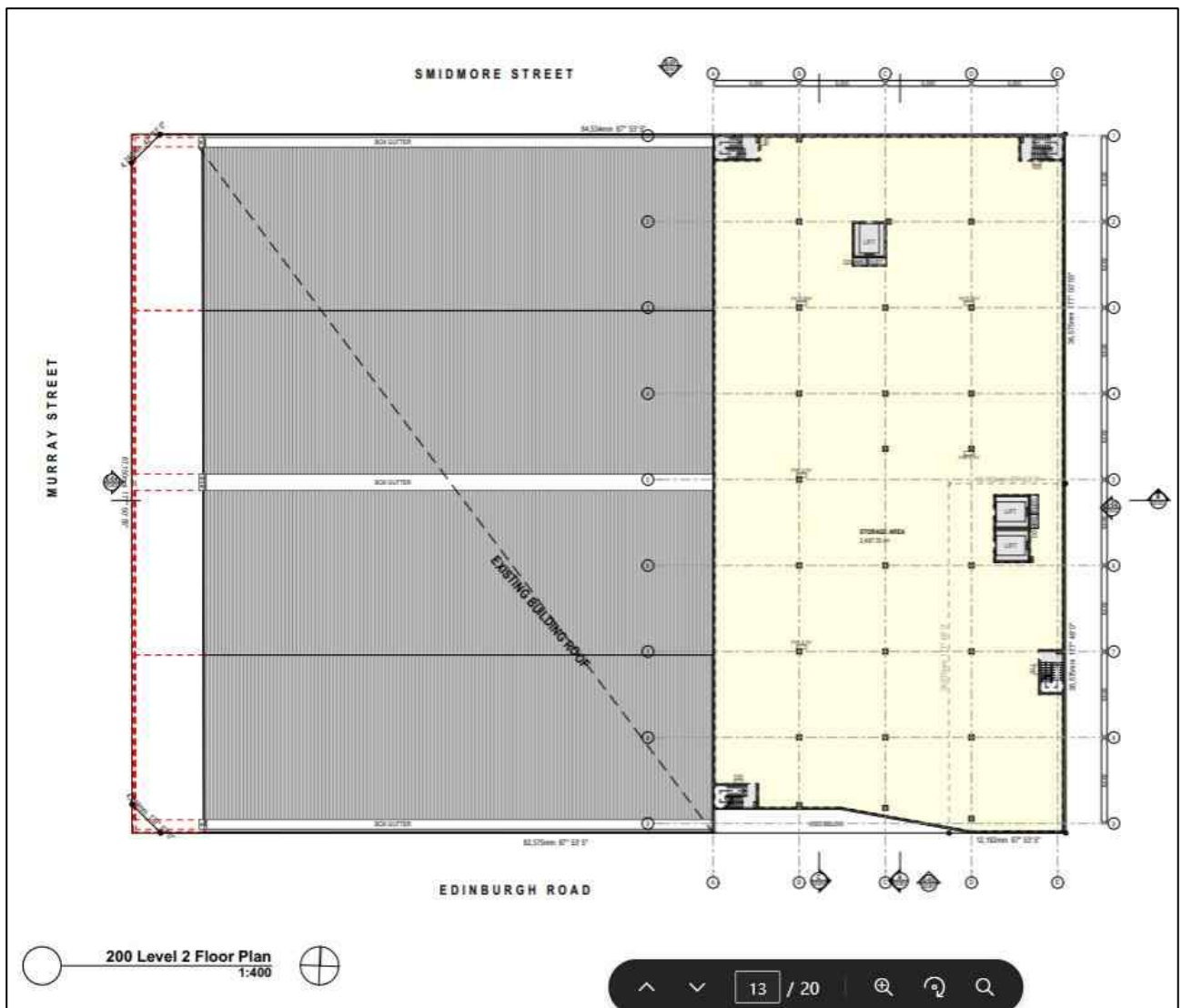


Figure 3: Level 2 Plan

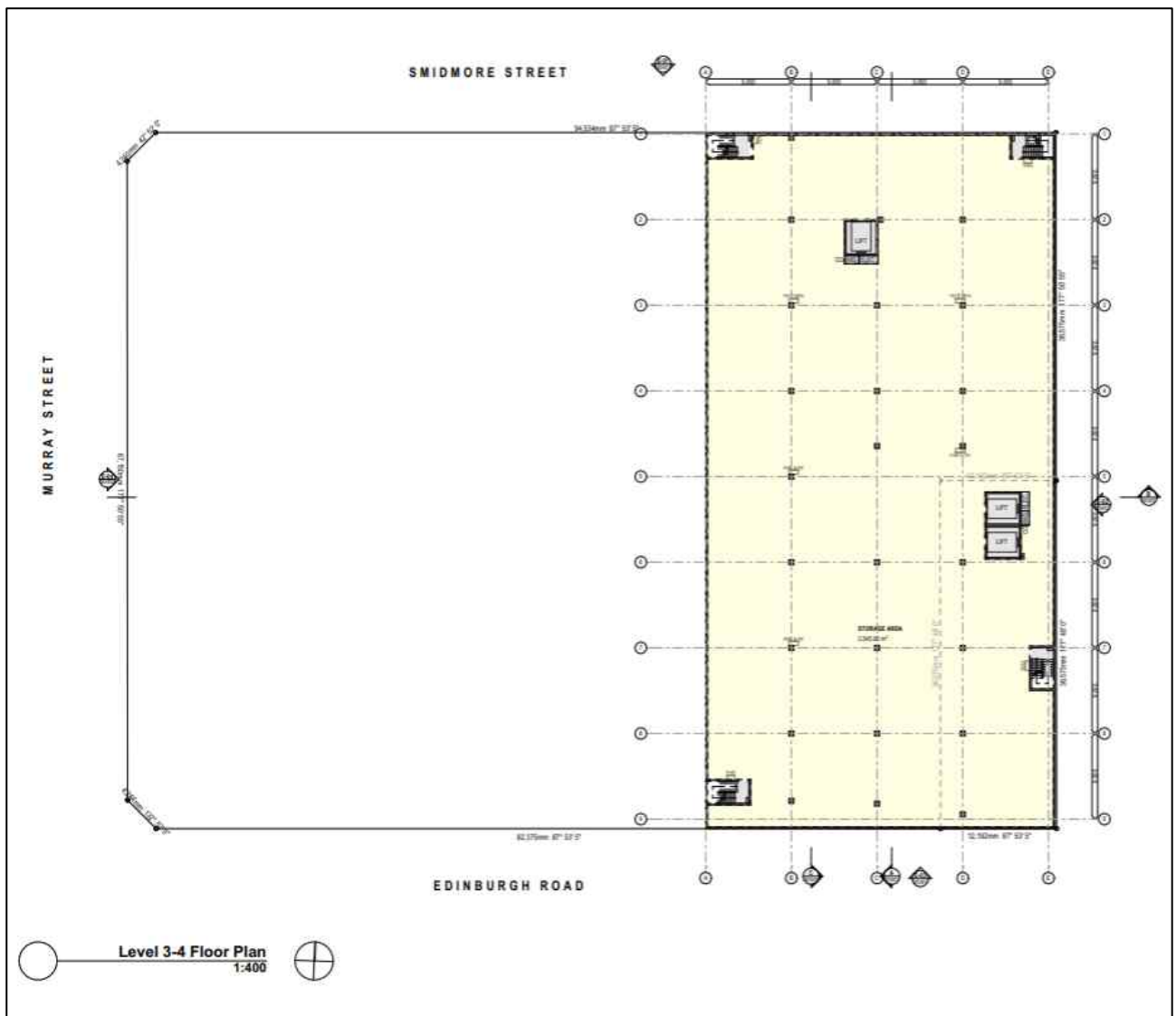


Figure 4: Level 3-4 Plan

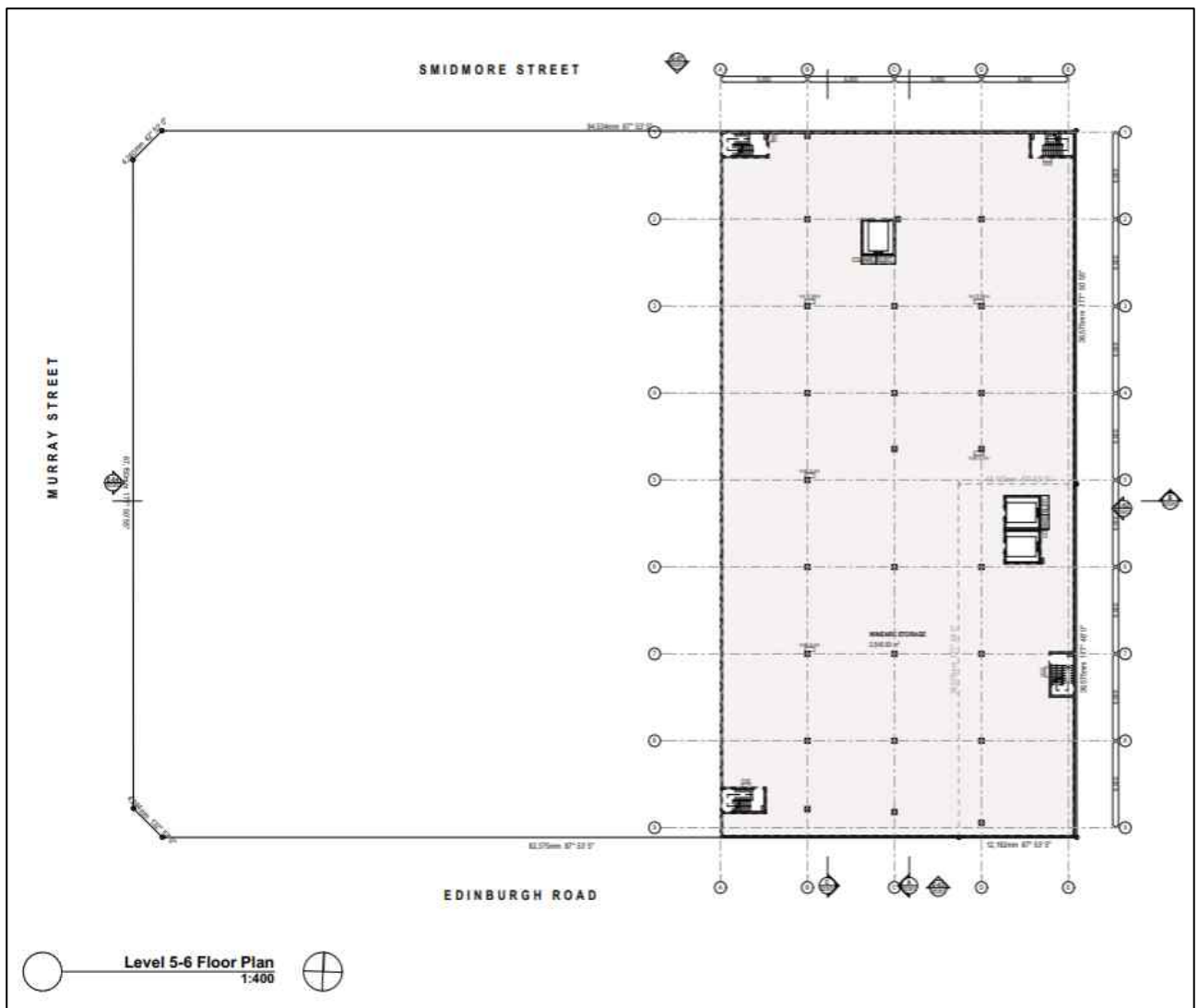


Figure 5: Level 5-6 Plan

3 Existing Conditions

3.1 Site Context

The Site is legally known as Lot 67 in DP 4991 & Lot A in DP 399780 and is currently zoned IN1 - *General Industrial* under Council's LEP and has an area of 7,126m². It is located approximately 6 kilometres south-west of Sydney CBD and has frontages to Edinburgh Road, Smidmore Street and Murray Street.

The Site is currently occupied by a National Storage self-storage development as well as a vehicle repair workshop, with a total GFA of approximately 8,300m².

The Marrickville Metro shopping centre sits to the west of the Site with the future Sydney Metro to the south. An appreciation of the existing Site and its sub-regional context is shown in **Figure 6**.



Figure 6: Site Context

3.2 Road Network

The key roads surrounding the Site are described below in **Table 1**, with the road hierarchy around the Site shown by **Figure 7**.

TABLE 1: ROAD HIERARCHY

Road	Description	Typical Road Characteristics
Edinburgh Road	A collector road which runs east-west It provides 1 traffic lane undivided each direction with a posted speed limit of 50km/h.	
Bedwin Road	A collector road which runs north-south It provides 1 traffic lane undivided each direction with a posted speed limit of 60km/h.	
Smidmore Street	A local road which runs east-west It provides 1 traffic lane undivided each direction with a posted speed limit of 50km/h.	
Murray Street	A local road which runs north-south It provides 1 traffic lane undivided each direction with a posted speed limit of 50km/h.	



Figure 7: Road Hierarchy

3.3 Existing Road Network Operation

3.3.1 Existing Traffic Volumes

Traffic surveys were undertaken on 27 June 2023 in conjunction with a site visit to establish the baseline traffic flows on the surrounding road network for the following key intersections:

- Edinburgh Road / Bedwin Road – Signalised Intersection.
- Edinburgh Road / Railway Parade – Roundabout Intersection.
- Edinburgh Road / Murray Street – Roundabout Intersection.

The traffic survey data indicated the following:

- The morning peak hour period was between 8:00 – 9:00 AM.
- The evening peak hour period was between 17:00 – 18:00 PM.

The existing traffic volumes of the peak periods on the study road network – derived from the traffic surveys – are presented in **Figure 8** and **Figure 9**.

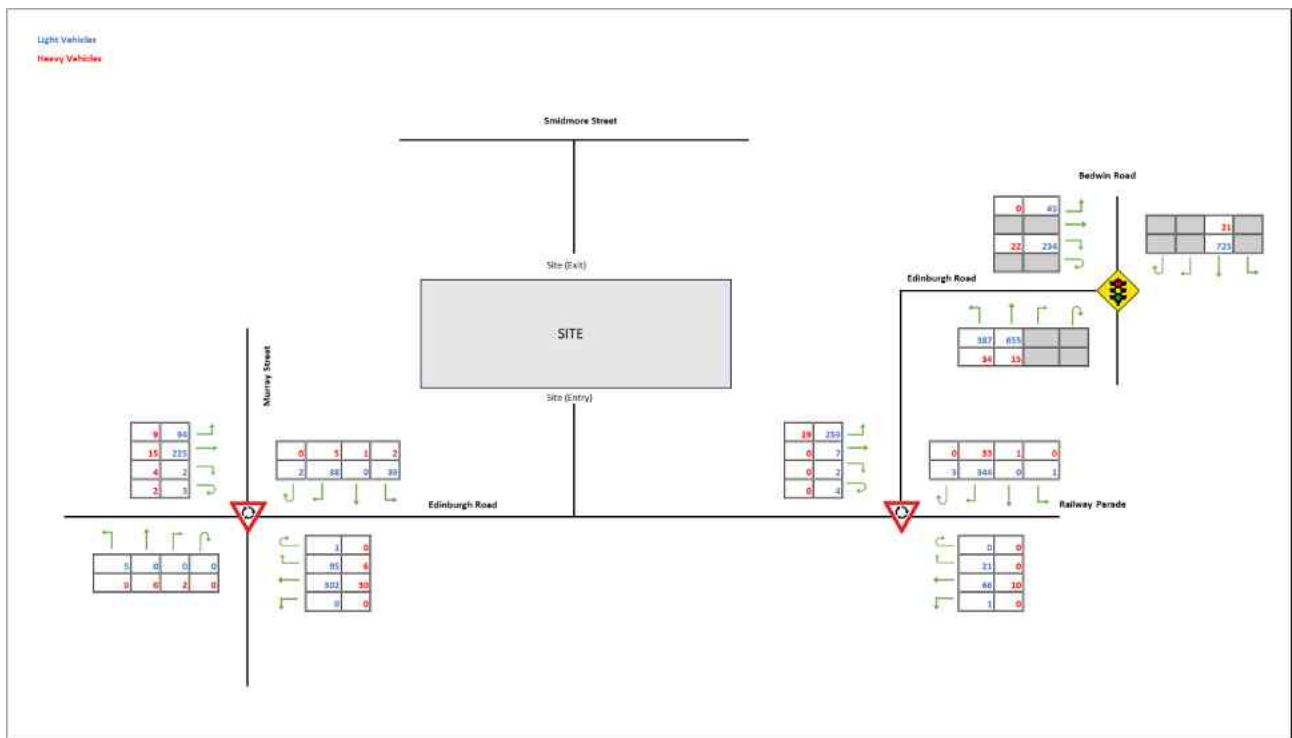


Figure 8: Baseline Traffic Volume - AM Peak

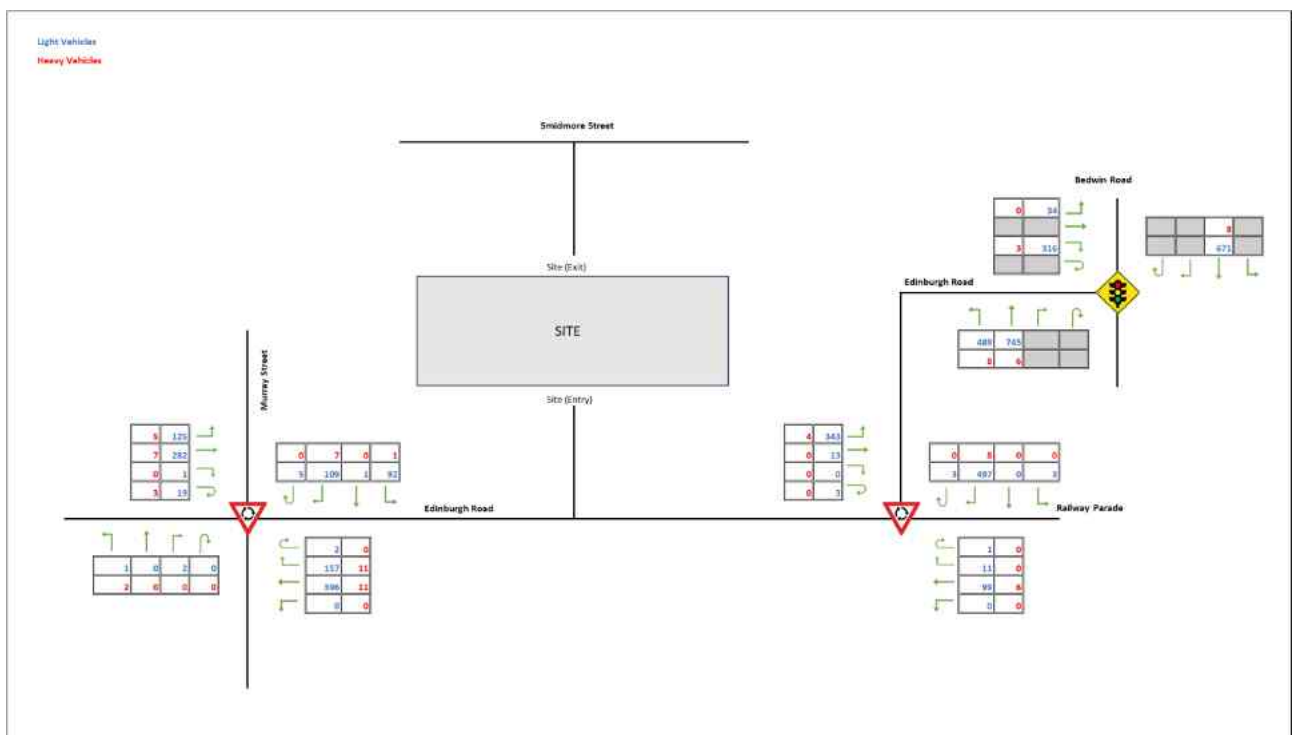


Figure 9: Baseline Traffic Volume - PM Peak

3.3.2 Intersection Performance

SIDRA intersection modelling has been undertaken to establish the baseline performance of the key intersections. 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 2 provides a recommended baseline for assessment as per the RMS Guide.

TABLE 2: LEVEL OF SERVICE CRITERIA FOR INTERSECTIONS			
Level of Service	Average Delay per Vehicle (sec/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.

3.3.3 Existing Intersection Performance

The results of the SIDRA analysis for the 3 intersections in the study area is shown **Table 3** and detailed intersection performance outputs are attached in **Appendix B**.

TABLE 3: BASELINE INTERSECTION PERFORMANCE

Intersection	Period	DOS	AVD	95% Queue	LOS
Edinburgh Road / Bedwin Road	AM	0.769	13.6	86.4	A
	PM	0.780	14.1	84.5	A
Edinburgh Road / Railway Parade	AM	0.116	9.2	1.8	A
	PM	0.152	10.1	2.3	A
Edinburgh Road / Murray Street	AM	0.014	12.0	0.2	A
	PM	0.014	13.1	0.3	A

The results demonstrate that all key intersections are currently operating with ‘good operation’ during the morning and evening peak hours with a LOS of A. The reported operation is consistent with the conditions observed on-site at the time of survey.

3.4 Existing Site Traffic

3.4.1 Existing Self-Storage Traffic Flows

Traffic surveys were undertaken on 3 November 2022 to establish trip rates for the existing self-storage site at 11a Edinburgh Road

It was found that the 7,800m² of existing self-storage GFA generated the following traffic during the peak periods:

- AM Peak 11 vehicles
- PM Peak 3 vehicles

3.4.2 Existing Auto-Repair Traffic Flow

As mentioned previously, an unoccupied Auto-repair development is located at 11 Edinburgh Road with a total site area of 426m². Auto-Repair development are not included in the RTA Guide and Guide to Traffic Generating Developments Updated Traffic Surveys, for that reason a reference was made to an international study- San Diego Trip Generation Manual- to calculate the potential trip generated by the Auto-Repair.

The following are the trip rates as outlined in the study:

- AM Peak 0.968 veh/hr per 100m²
- PM Peak 1.355 veh/hr per 100m²

Based on the trip rates above, the existing Auto-Repair shop could potentially generate 5 trips in the AM peak and 7 trips in the PM peak.

Therefore, in total, the existing uses on the Site generate 16 vehicle trips in the AM peak and 10 in the PM peak.

3.5 Existing Public & Active Transport Infrastructure

3.5.1 Bus Services

With reference to **Figure 10**, The Site is serviced by 3 bus stops within 400 walking distance of the Site. Bus routes 308, 352, 355, 423, 426 services these stops which provides connections to the surrounding suburb and to Sydney CBD during the morning and evening peaks.

3.5.2 Train Services

The Sydney Metro project is currently under construction, adjacent to the site. In association with the project, Sydenham station is being upgraded. Sydenham is some 10 minutes' walking distance from the site.

3.5.3 Cycle Routes

The existing cycle network in the vicinity of the Site is shown in **Figure 10**, an existing off-road pedestrian and cycle path on Edinburgh Road, adjacent to the site, also there is a pedestrian link which connects to Sydenham Station, south of Sydney Street Road.

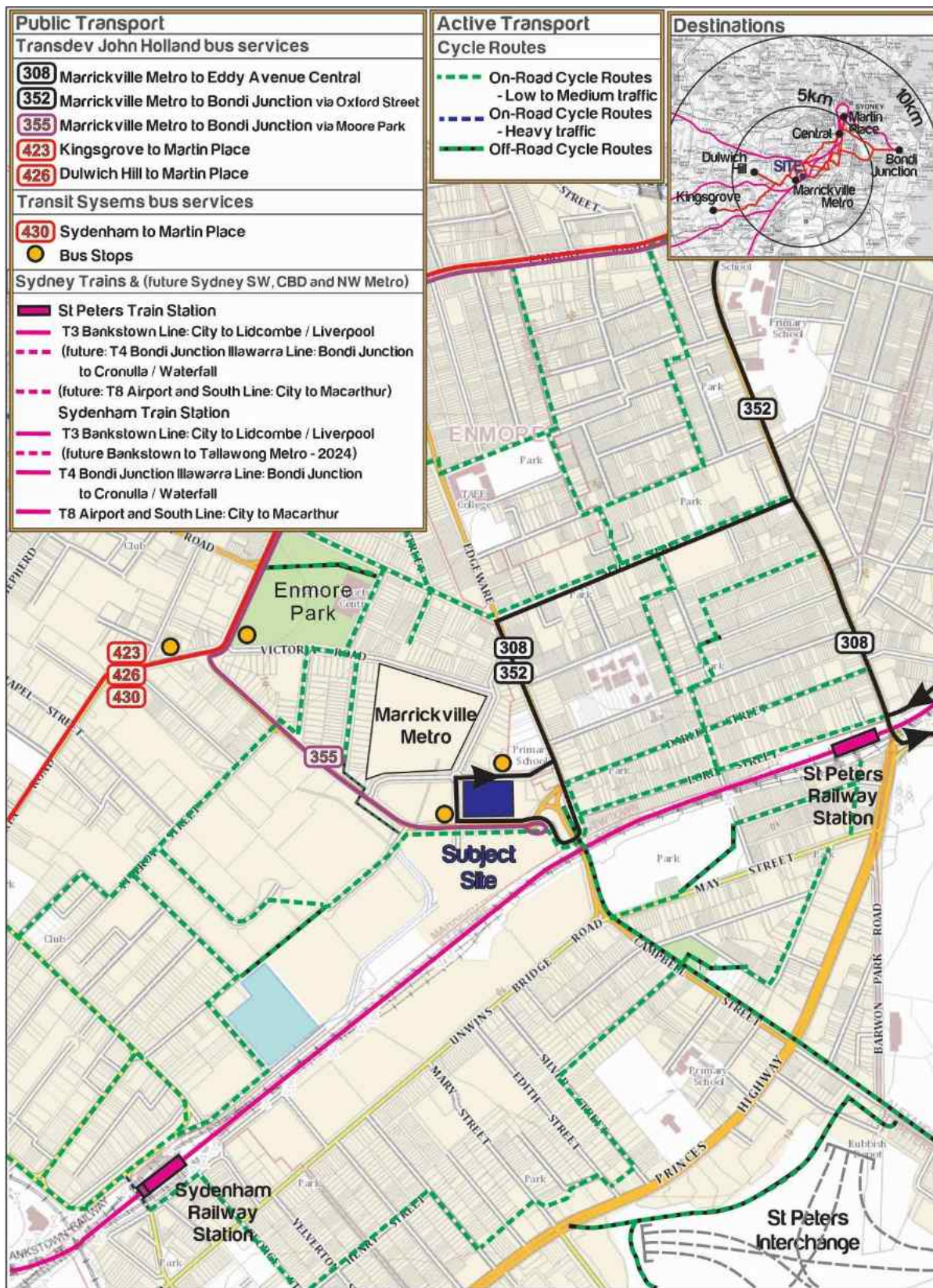


Figure 10: Public Transport Network

3.6 Journey to Work Travel Patterns

The existing travel patterns of employees within the surrounding locality was surveyed within the 2021 Census and presented in the Journey to Work (JTW) data provided by the Australian Bureau of Statistics (ABS).

A breakdown of the existing travel mode share is presented in **Table 4**.

TABLE 4: TRAVEL MODE SUMMARY (JOURNEY TO WORK)

Travel Mode	2021 Census
Car as driver	57%
Car as passenger	8%
Train / Metro	18%
Bus	7%
Walked only	6%
Motorbike/Scooter	2%
Bicycle	1%
Other	1%

With reference to the above, the majority of the statistical area travels to work by car (57%), which suggest that this will be the key travel mode to the Site.

4 Parking and Servicing Requirements

4.1 Car Parking

4.1.1 Proposed Car Parking

The proposed storage facility is not characteristic of the standard land-use definitions for which Council's current controls provides relevant car parking rates. In this regard, guidance from other sources has been sought to inform this parking assessment in relation to the self-storage facility component of the development. In this regard, Aurecon has previously undertaken a study on behalf of the Self-Storage Association of Australia to inform assessment of self-storage facilities based on a review of 32 separate facilities throughout Australia. This study provides guidance on typical parking demands associated with self-storage facilities and is intended to inform Council's and other authorities. The recommended parking rates outlined in the Aurecon report have been adopted for the purposes of this assessment.

The demand for parking was calculated by separately considering the staff, office and storage area parking requirement, as outlined in the Aurecon Study. The parking rates outlined in the report use the Maximum Leasable Area (MLA) as the basis to determine the demand for parking which typically represents 75% of the overall GFA. Therefore, the MLA adopted for this assessment is 17,841.8m².

Table 5 outlines the parking requirements established by the Aurecon study.

TABLE 5: STORAGE FACILITY PARKING SPACE RECOMMENDATIONS

MLA ¹	Office parking	Storage Area Parking	Staff Parking	Trailer/Ute Parking	Total Parking Spaces
0 – 3,000m ²	1	2	2	1	6
3,000m ² – 6,000m ²	2	5	2	1	10
6,000m ² – 9,000m ²	3	5	2	1	11

Note: 1) It is assumed that MLA is equal to GFA for parking rates.

On the basis of the above, a total of 11 parking spaces would be required to service the Proposal.

While it is noted that the Aurecon study only provides for development up to 9,000m², it is evident from the findings of the Aurecon study that the capacity doesn't significantly alter the demand.

Nevertheless, in considering the appropriateness of the parking provision, the development will accommodate up to 11 full time staff. Existing Journey to Work (JTW) data collated as part of the 2016 Census (Section 3.4), provided by the Australian Bureau of Statistics (ABS) suggests that 57% of employees currently travel to the area as a car driver. This is reflective of the accessibility of the area by other modes.

Application of the JTW modal share suggests that 6.27(7) staff may drive to Site. Therefore, it is proposed to provide 7 staff parking spaces accordingly. Therefore, a total of 16 parking spaces are proposed to service the Site. Noting the Proposal is still in a Planning Proposal stage, the proposed parking provision is deemed appropriate for the proposed operation of the Site.

5 Traffic Assessment

5.1 Proposal Traffic Generation

5.1.1 Traffic Generation Rates

Storage facilities are not included in the RTA Guide and RMS Guide Update Traffic Surveys. Therefore, reference is made to the Aurecon Self Storage Facility (ASSF) Traffic and Parking Study 2009 by Aurecon (Aurecon Report) to provide an understanding of generic Australia wide storage facilities. The Aurecon Report is a study which was undertaken on behalf of the Self-Storage Association of Australia to inform assessment of self-storage facilities based on a review of 32 separate facilities throughout Australia. This document and guide provide a starting base point for any assessment of proposed storage developments. The general findings or similar sized country wide developments are summarised in the Section below.

5.1.2 Trip Generation

The largest development covered by the Aurecon Study is developments up to 9,500m² MLA, with traffic generation predicted as follows:

- Weekday AM Peak (observed weekday peak between 06:30 and 09:00) 15 – 30 veh/hr
- Weekday PM Peak (observed weekday peak between 16:00 and 20:00) 20 – 30 veh/hr

It should be noted that the above rates are described as ‘**probable**’ since “*traffic generation to self-storage sites varies significantly for each site and from site to site*”. In this regard, Ason Group has conducted surveys of the existing Site to establish trip rates, as well as reviewing assessments of National Storage developments in Melbourne and drawing on operational information of other self-storage facilities.

The GFA and associated peak hour trips are detailed below:

TABLE 6: SITE ANALYSIS SUMMARY

Location	GFA (m ²)	AM Trips	PM Trips
Subject Site	7,800	11	3
Site 2: 72-90 Holmes Street, Brunswick	9,835	5-10	5-10
Site 3: 10-12 Hampstead Road, Maidstone	4,886	5-10	5-10
Site 4: Rent a Space - Gregory Hills	6,859	8	7
Site 5: Rent a Space - Padstow	5,535	7	6

It is evident from the above that storage facilities less than 10,000m² generate approximately 10 vehicle trips per peak hour.

The corresponding trip rate on a GFA basis are provided in **Table 7**.

TABLE 7: VEHICLE TRIP RATE SUMMARY

Location	AM Site Vehicle Trip Rate	PM Site Vehicle Trip Rate
Subject Site	0.14 per 100m ² GFA	0.11 per 100m ² GFA
Site 2: 72-90 Holmes Street, Brunswick	0.001 per 100m ² GFA	0.001 per 100m ² GFA
Site 3: 10-12 Hampstead Road, Maidstone	0.002 per 100m ² GFA	0.002 per 100m ² GFA
Site 4: Rent a Space - Gregory Hills	0.12 per 100m ² GFA	0.11 per 100m ² GFA
Site 5: Rent a Space - Padstow	0.08 per 100m ² GFA	0.04 per 100m ² GFA
Average	0.07 per 100m² GFA	0.05 per 100m² GFA

Noting that the analysis of other self-storage developments suggests that self-storage facilities up to 10,000m² generate approximately 10 vehicles per peak hour, it is not unreasonable to assume the Proposal, with a GFA of 22,745m², could generate 20 – 25 vehicles per peak hour. This is consistent with the traffic generation based on the Aurecon Study.

Further, application of the adopted surveyed rates to the 22,745m² of storage GFA results in the following estimated traffic generation:

- 16 veh/hr during the AM peak period, and
- 12 veh/hr during the PM peak period.

With regard for the existing traffic generation of the Site, this represents an increase on 5-10 vehicle movements during the peak periods (or an additional 5 vehicles).

The traffic generation during the weekday peak periods effectively corresponds to 1 vehicle trip every 6 minutes. This level of trip generation can be classified as minor and would have limited (if any) impact on the operation of the local road network. Nevertheless, a detailed SIDRA modelling assessment of the road network has been undertaken.

5.2 Development Trip Distribution and Assignment

With regard to the local road network, the trips have been distributed onto the surrounding road network based generally on access to the major movement corridors surrounding the Site. As such, the following vehicle splits into and out of the Site have been assumed:

- Inbound:
 - 70% from the east considering access to Princes Highway
 - 30% from the west
- Outbound:
 - 70% to the west considering no right turn at the Smidmore Street / Bedwin Road intersection, meaning vehicles attempting to return to Princes highway will be heading westbound
 - 30% to the east

The following Inbound/Outbound splits have been assumed to distribute the trips:

- AM Peak:
 - 55% Inbound
 - 45% Outbound
- PM Peak:
 - 45% Inbound
 - 55% Outbound

Finally, the following light vehicle/heavy vehicle splits have generally been assumed to distribute the development traffic:

- Light vehicles: 80%
- Heavy vehicles: 20%

Figure 11 and **Figure 12** below identify the trip distribution based on the above assumptions.

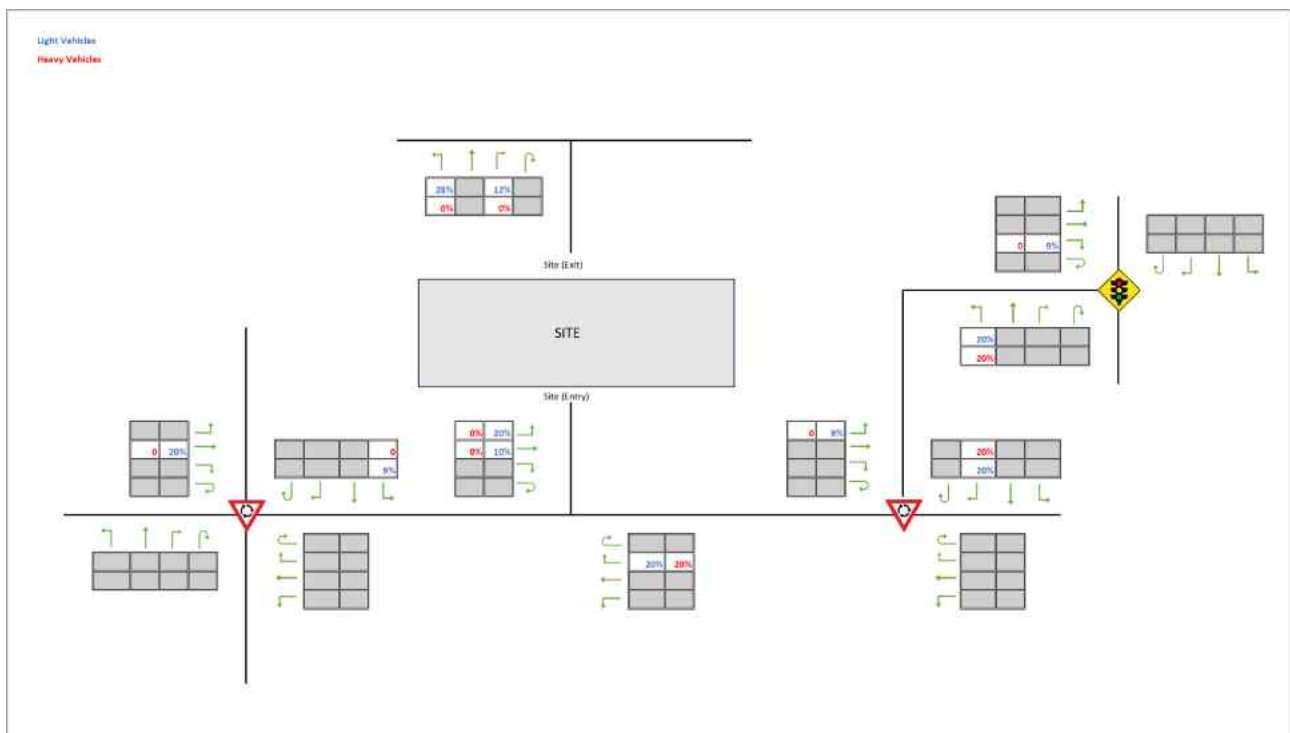


Figure 11: Trip Distribution - AM Peak

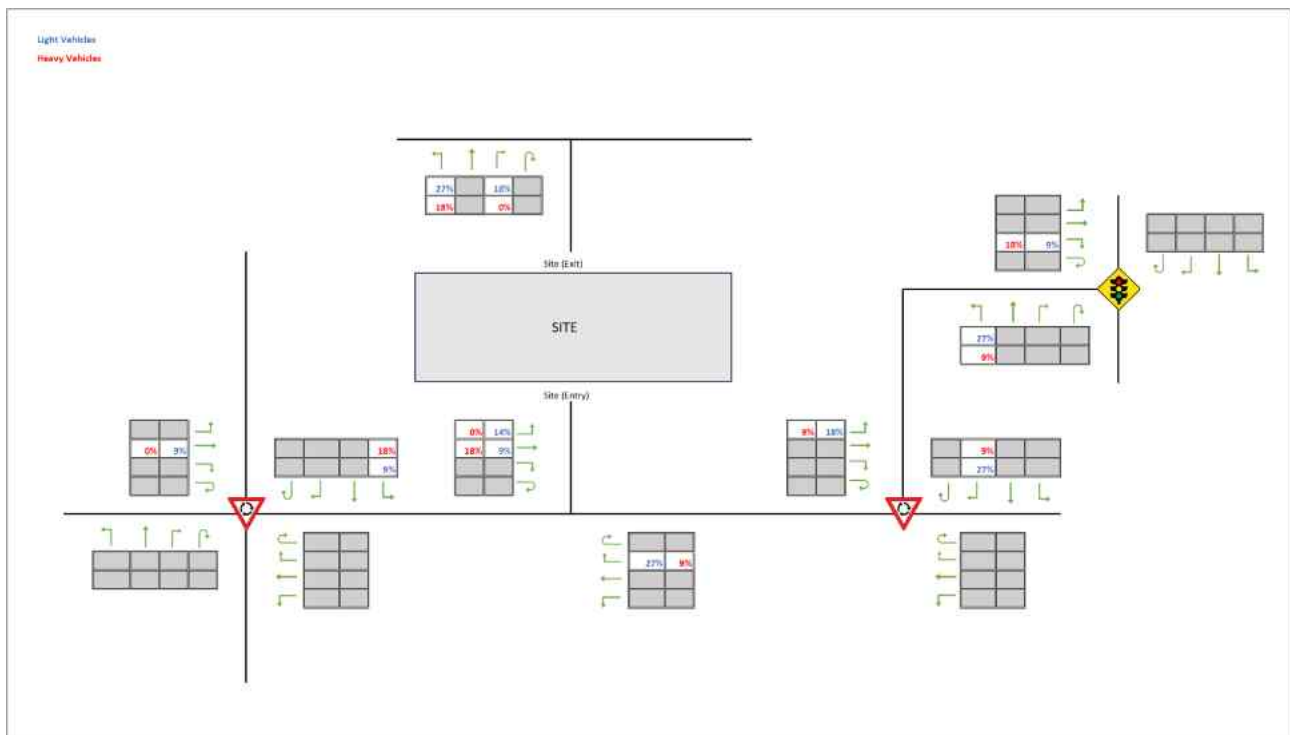


Figure 12: Trip Distribution - PM Peak

5.3 SIDRA Intersection Analysis

5.3.1 Scenarios

An assessment of the following scenarios has been undertaken to inform the traffic impacts of the Proposal:

- Base Case – Existing Baseline (see Section 3.3.2).
- Background Case – Existing Baseline (2023) + Approved Woolworths Development Traffic.
- Project Case – Existing Baseline (2023) + Approved Woolworths Traffic + Development Traffic.

5.3.2 Existing Baseline + Approved Woolworths Traffic

When considering the Background Case, reference is made to the Woolworths Report completed by Colston Budd Rogers & Kafes Pty Ltd for the Woolworths Distribution Centre and Office Development (Woolworths Report) (application no. DA/2022/0820), approved 2/04/2023, located at 74 Edinburgh Road, Marrickville. With the Woolworths development located approximately 300m west of the Site, it is deemed appropriate to include its additional traffic to the Base Case. As such, this scenario combines the Base Case traffic flows with the approved traffic generation of the Woolworths development to provide a realistic baseline for the road network.

Background Case traffic volumes (inclusive of the approved Woolworths volumes) of the study road network are presented in **Figure 13** and **Figure 14** below.

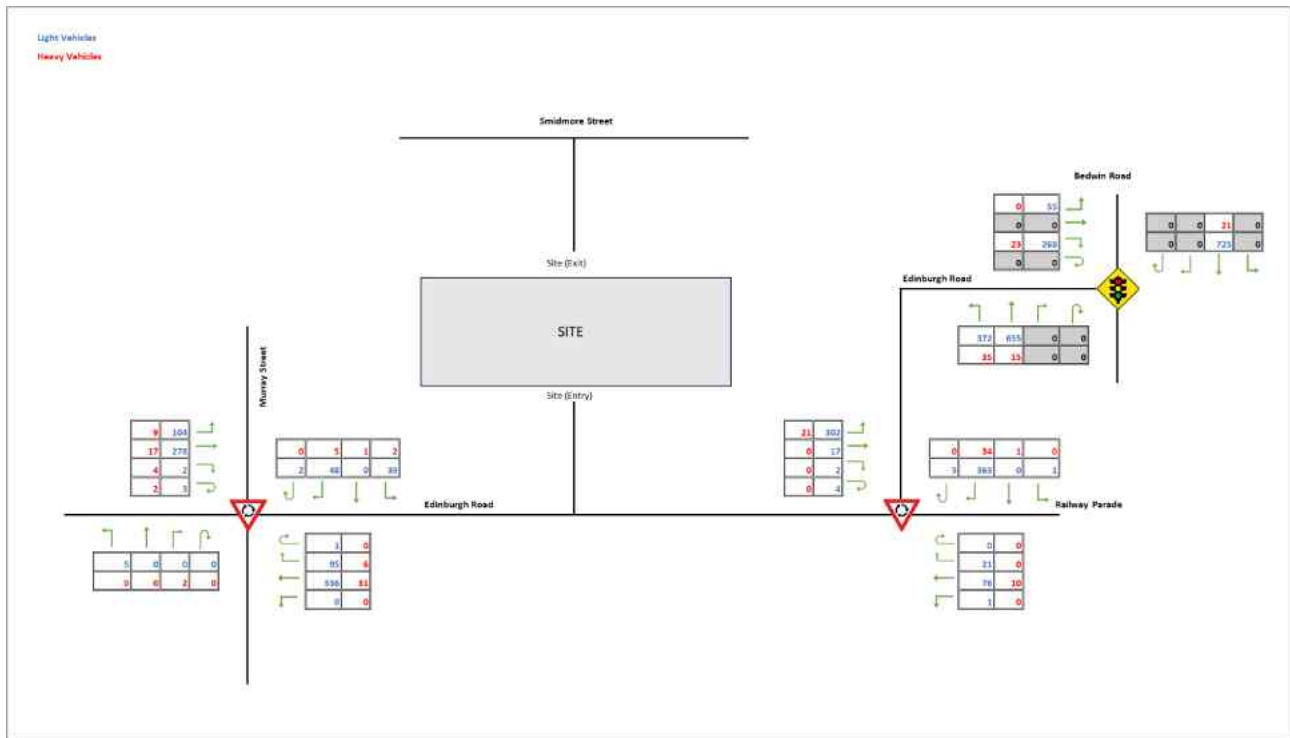


Figure 13: 2023 Base Case + Woolworths Traffic Volume - AM Peak

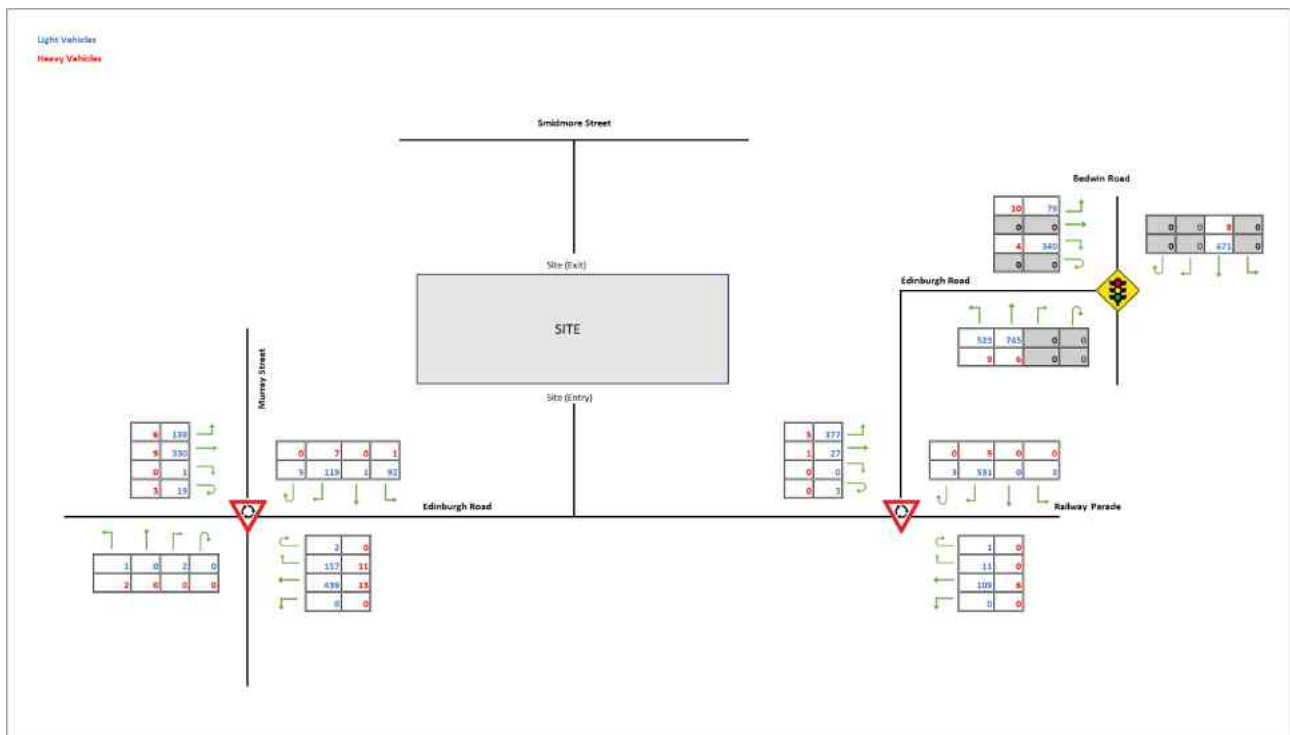


Figure 14: 2023 Base Case + Woolworths Traffic Volume - PM Peak

The performance of the key intersections for the existing baseline (2023) plus Woolworths traffic scenario is presented in **Table 8** below.

SIDRA outputs are provided in Appendix B.

TABLE 8: BACKGROUND CASE INTERSECTION PERFORMANCE					
Intersection	Period	DOS	AVD	95% Queue	LOS
Edinburgh Road / Bedwin Road	AM	0.769	14.2	86.4	A
	PM	0.764	14.6	84.5	B
Edinburgh Road / Railway Parade	AM	0.138	9.40	0.10	A
	PM	0.175	10.4	2.70	A
Edinburgh Road / Murray Street	AM	0.014	12.0	0.58	A
	PM	0.024	19.2	2.00	B

The SIDRA analysis indicates that, following the addition of the approved Woolworths development traffic, all key intersections would continue to operate with “acceptable delays and spare capacity” with reference to the RTA Guidelines.

5.3.3 Existing Baseline + Approved Woolworths + Development Traffic

As assessment of the Project Case scenario for 2023 has also been established to assess the traffic impacts of the Proposal.

Project Case traffic volumes of the study road network are presented in **Figure 13** and **Figure 14** below, incorporating the Background Case volumes from above with the projected development traffic, detailed in Section 5.2.

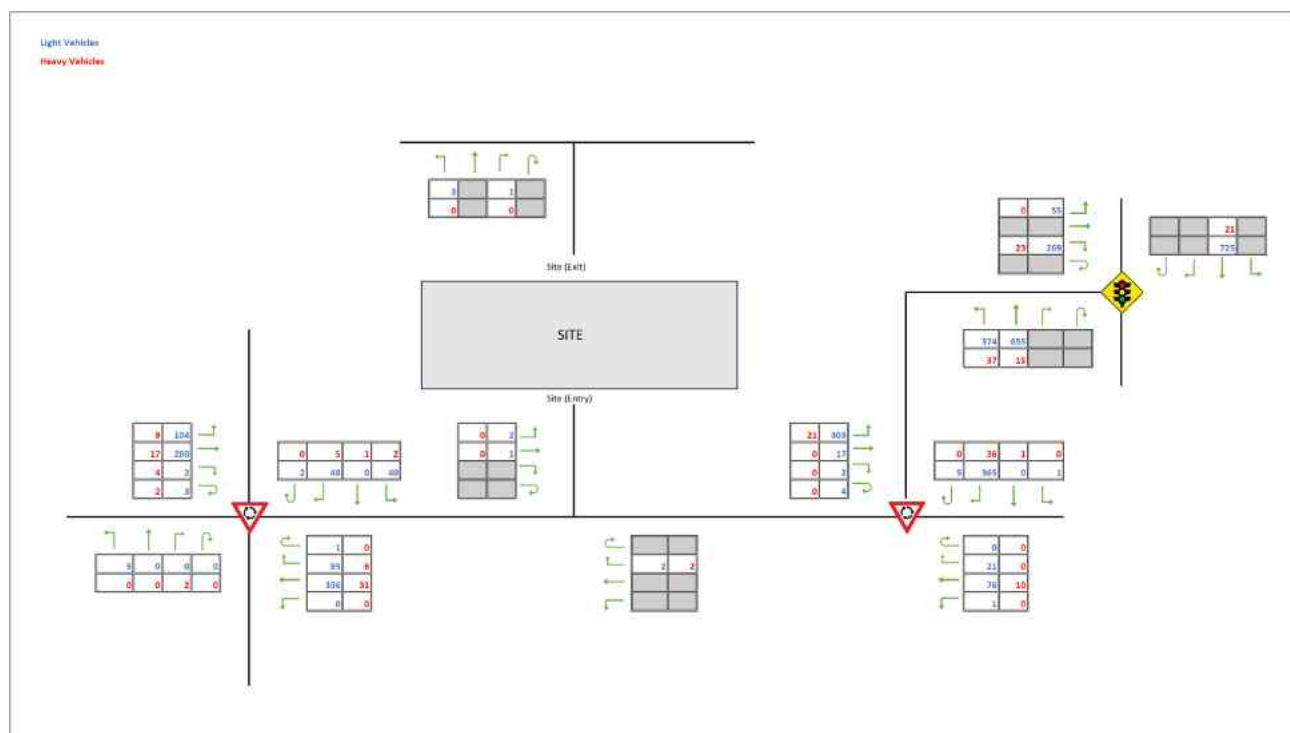


Figure 15: 2023 Project Case Traffic Volumes - AM Peak

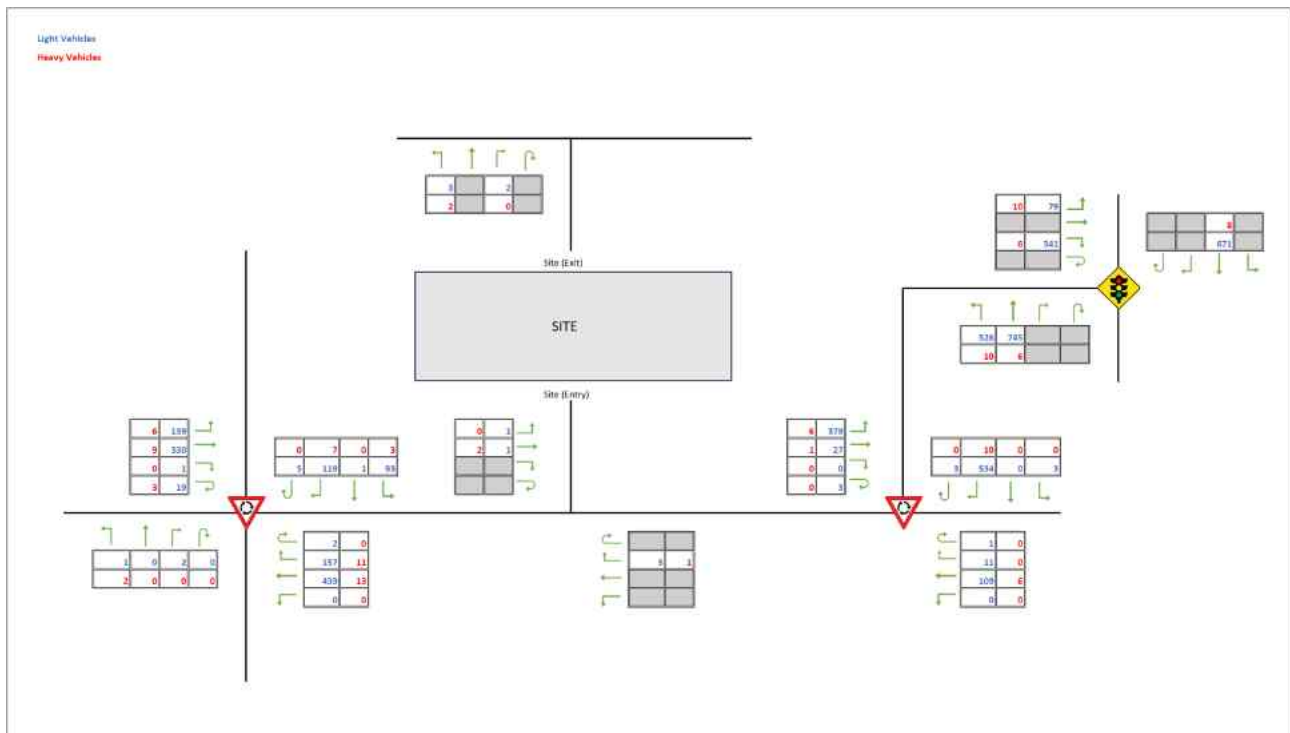


Figure 16: 2023 Project Case Traffic Volumes - PM Peak

The performance of the key intersections for the for the Project Case is provided below.

TABLE 9: PROJECT CASE INTERSECTION PERFORMANCE									
Intersection	Period	Background Case				Project Case			
		DOS	AVD	95% Queue	LOS	DOS	AVD	95% Queue	LOS
Edinburgh Road / Bedwin Road	AM	0.769	14.2	86.4	A	0.769	14.2	86.4	A
	PM	0.764	14.6	84.5	B	0.764	14.7	84.5	B
Edinburgh Road / Railway Parade	AM	0.138	9.40	0.10	A	0.140	9.40	0.10	A
	PM	0.175	10.4	2.70	A	0.177	10.5	2.7	A
Edinburgh Road / Murray Street	AM	0.014	12.0	0.58	A	0.014	12.0	0.58	A
	PM	0.024	19.2	2.00	B	0.024	19.2	2.00	B

A comparison of the Background Case with the Project Case seen above in Table 9 demonstrates the Proposal will have no impact on the surrounding road network. There is no change in the LOS, with DOS, AVD and the 95% Queue also seeing inconsequential changes.

SIDRA outputs are provided in Appendix B.

It can be concluded that the Proposal will have a negligible impact on the surrounding road network, with no change to the assessed intersections from the baseline scenario assessed.

6 Access Parking and Servicing Design

6.1 Design Standards

It is noted that detailed design related matters will be confirmed during the DA stages however, the Proposal will need to be designed in reference to

Site's access, car park and loading areas have been generally designed with reference to the following Australian Standards:

- Australian Standard 2890.1:2004: Parking Facilities – Off Street Car Parking (AS 2890.1)
- Australian Standard 2890.2:2018 Parking Facilities – Off Street Commercial Vehicle Facilities (AS 2890.2)
- Australian Standard 2890.3:2015: Parking Facilities – Bicycle Parking (AS 2890.3);
- Australian Standard 2890.5:2020: Parking Facilities – On Street Parking (AS2890.5)
- Australian Standard 2890.6:2009 Parking Facilities – Off Street Parking for People with Disabilities (AS 2890.6); and
- Marrickville Development Control Plan 2011

6.2 Design Commentary

A preliminary review of the Proposal has been undertaken, with the following considered noteworthy:

- The design vehicle adopted for the development is an 8.8m long MRV. The proposed car parking area has been designed to accommodate B99 Vehicles as per AS2890.1:2004.
- All access driveways shall be, designed with reference to AS 2890.1, AS 2890.2, and any other relevant published road design / road engineering guidelines.
- Truck access driveways shall be designed to provide for vehicles up to and including an 8.8m long MRV with maximum gradients, maximum rates of change of grades, and maximum crossfalls in accordance with relevant standards.
- All parking areas, including access aisles and parking modules shall be designed with reference to AS 2890.1 and AS 2890.6. It is anticipated that full parking area design compliance with AS 2890.1 and AS 2890.6 would form a standard Condition of Consent further to any DA approval.

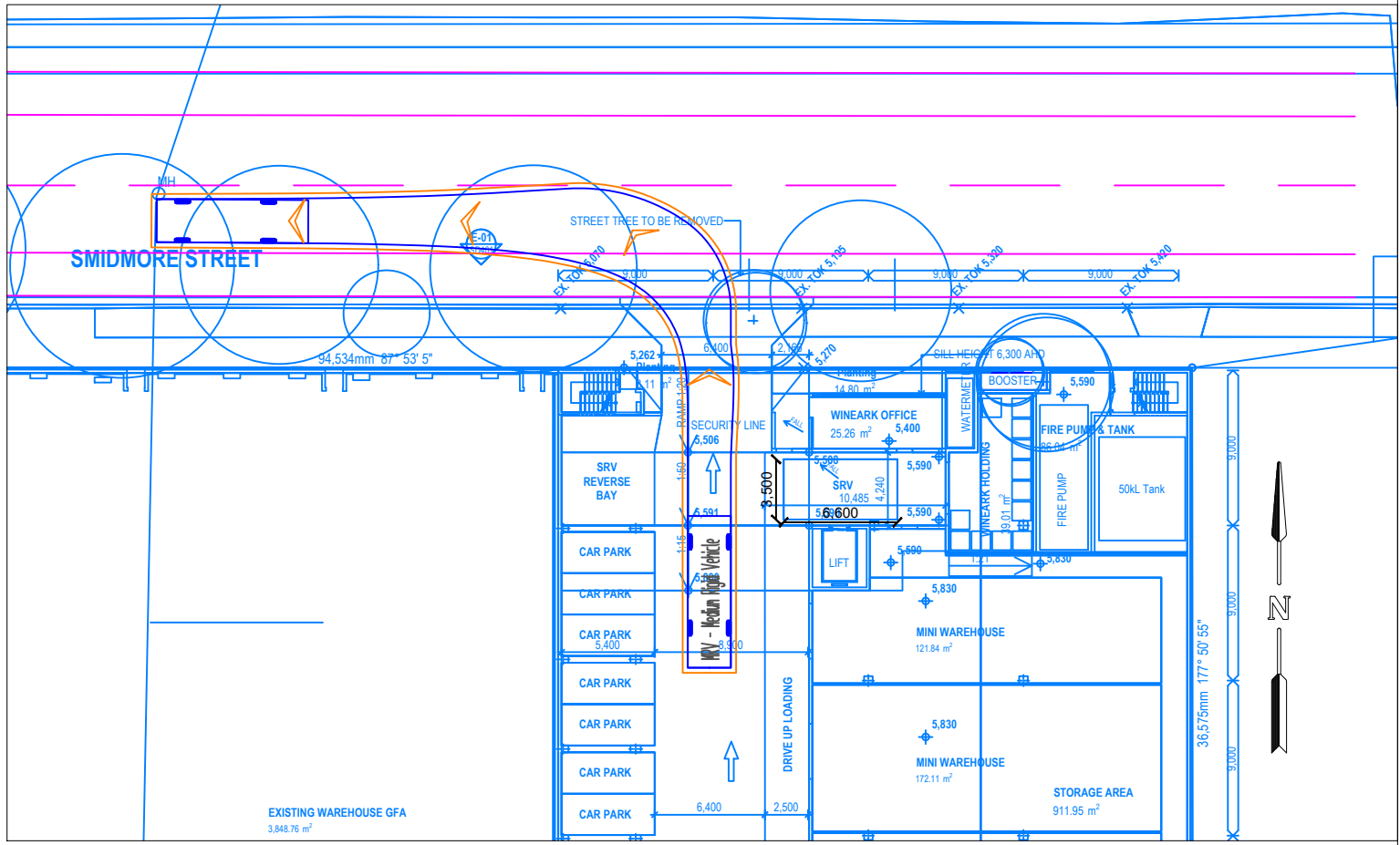
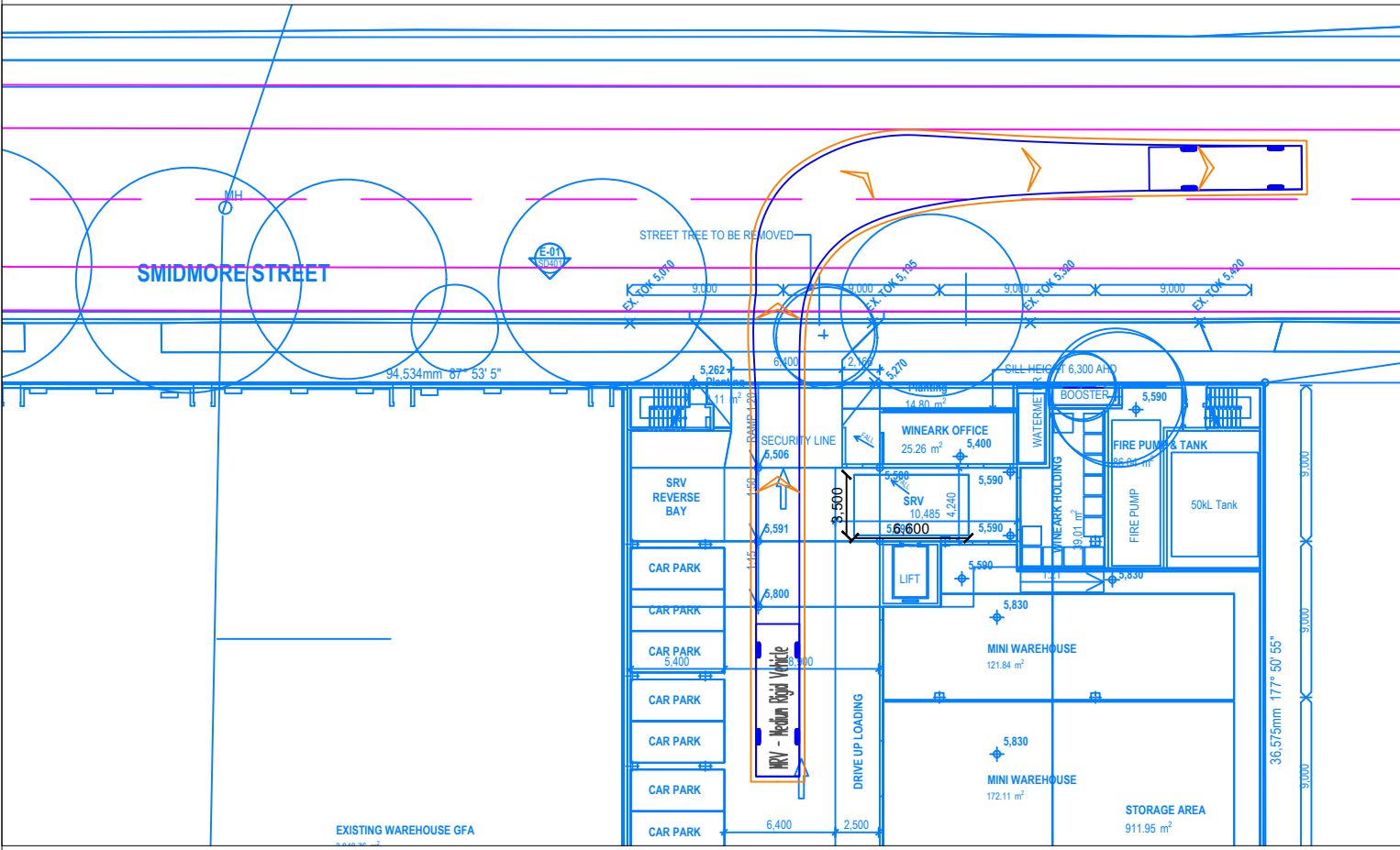
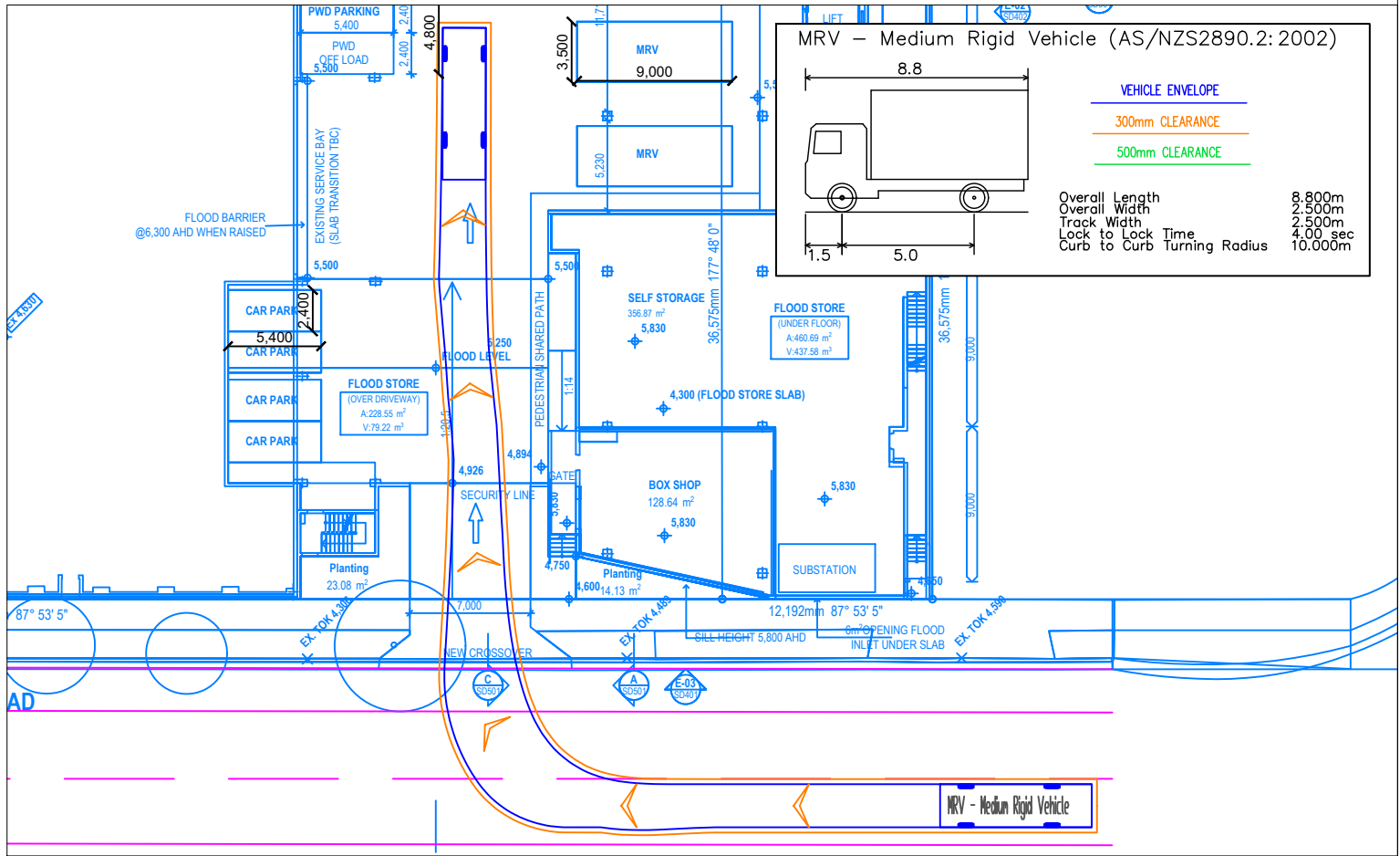
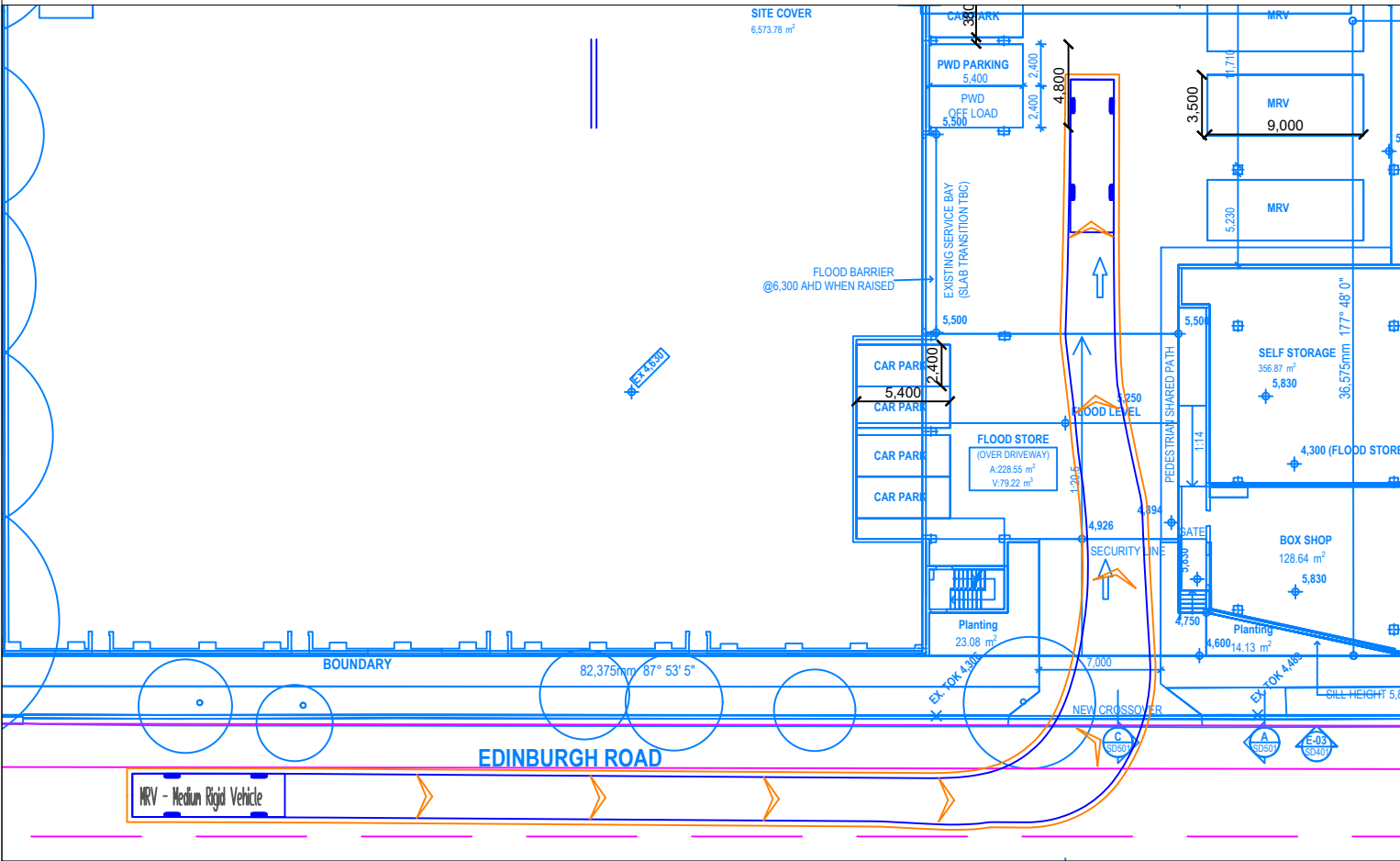
7 Conclusions

Ason Group has been engaged by National Storage to prepare a Transport Assessment in relation to the Proposal Planning for a Self-Storage development located on 11-11a Edinburgh Rd, Marrickville (the Site).

Further to a detailed assessment of all relevant traffic and transport issues, Ason Group provides the following conclusions:

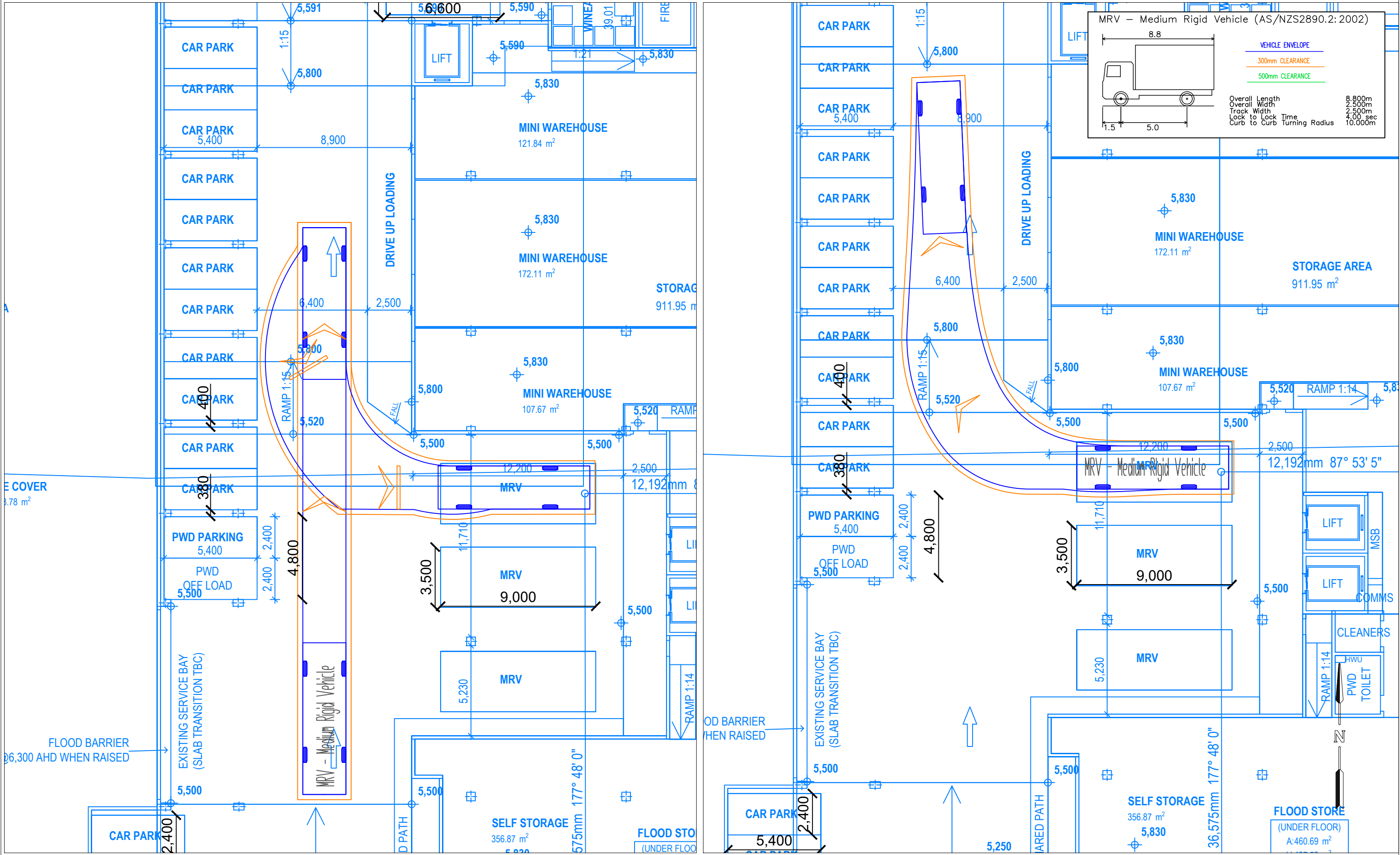
- Council's DCP does not provide parking rates for storage facilities. As such, reference has been made to the Aurecon Self Storage Facility Traffic and Parking Study 2009 which assessed the parking and traffic outcomes based on surveys across 32 self-storage developments.
- Ason Group undertook a survey of the existing self-storage development to establish the trip generation rate analysis of the existing storage facilities. The Average Site survey trip rates have therefore been adopted as follows:
 - Weekday
 - AM peak: 0.07 trips per 100m²
 - PM peak: 0.05 trips per 100m²
- The Proposal would result in a slight increase in traffic generation during peak hours and have a negligible impact on the surrounding road network.
- All internal circulation, hardstand and parking areas have been designed with reference to the Australian Standards and provide for vehicles up to and including an 8.8m long MRV.
- All access driveways, parking areas and service areas have been designed with reference to the appropriate Australian Standards. It is anticipated that full design compliance with the relevant Australian Standards would form a standard Condition of Consent further to approval, which will also provide for any design changes if required.

Appendix A. Swept Path Analysis

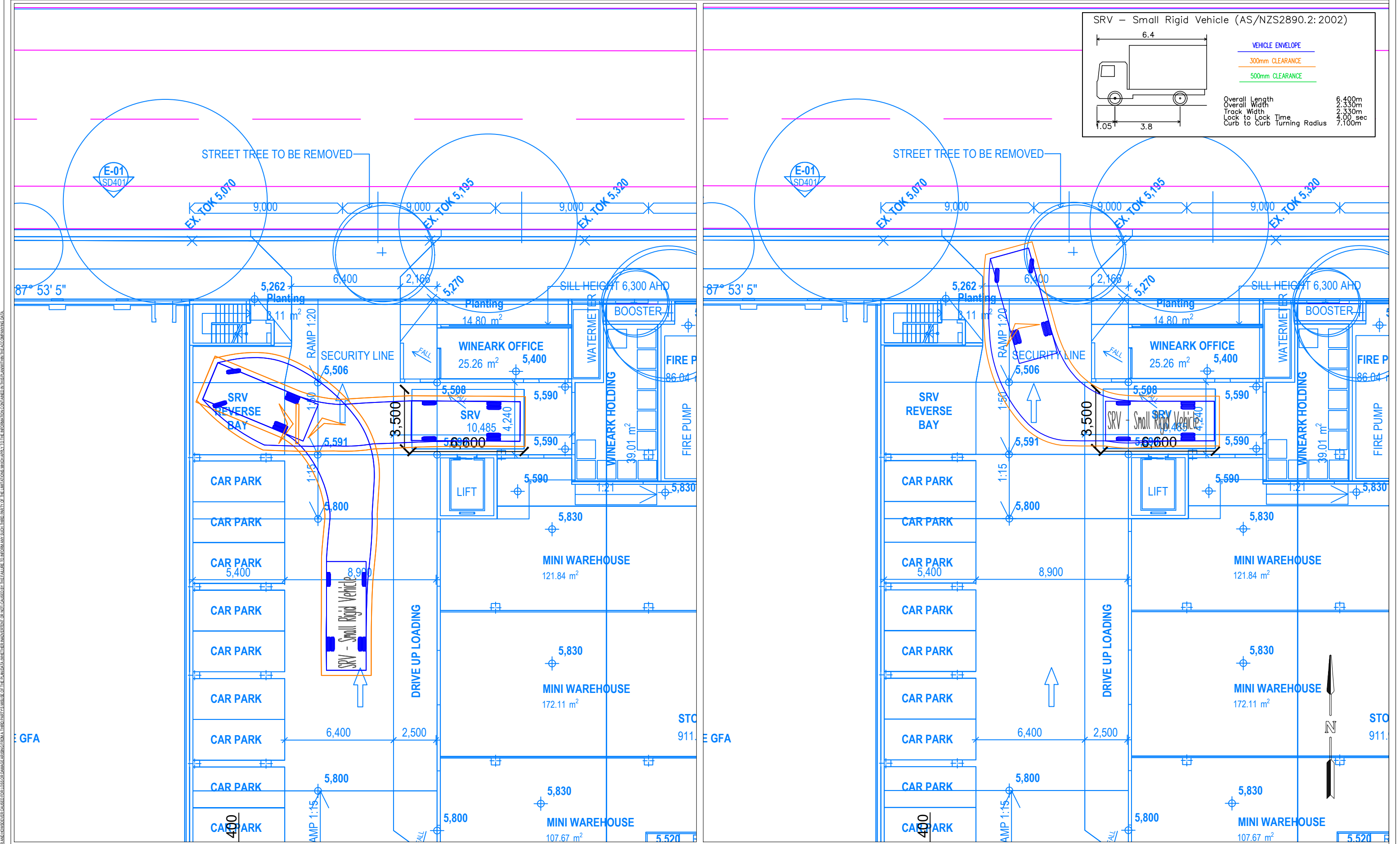


GENERAL NOTES This drawing is provided for information purposes only and should not be used for construction. Base Plan prepared by HAL Architects, received 31.10.2024. Swept path assessments completed at 10 km/h and 300mm clearance.	DESIGNED Sadeepth	PAPER SIZE A3	CLIENT NATIONAL STORAGE	DOCUMENT INFORMATION DESIGN ADVICE		 Suite 17.02, Level 17, 1 Castlereagh St Sydney NSW 2000 info@asongroup.com.au
	APPROVED BY X.XXXX	DATE 31.10.2024	PROJECT P2070	ACCESS ASSESSMENT		
	SCALE 1:400			FILE NAME AG2070-01-04.dwg	SHEET AG01	
			11-11A EDINBURGH RD, MARRICKVILLE NSW 2204			

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	Sadeepth	A3	NATIONAL STORAGE	DESIGN ADVICE		
	APPROVED BY	DATE	PROJECT	MRV-SWEPT PATH		
	X.XXXX	31.10.2024	P2070			
	SCALE				FILE NAME	SHEET
	1:200	024	11-11A EDINBURGH RD, MARRICKVILLE NSW 2204		AG2070-01-04.dwg	AG02



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	Sadeepth	A3	NATIONAL STORAGE			
	APPROVED BY	DATE	PROJECT			
	X.XXXX	31.10.2024	P2070			
	SCALE			FILE NAME	SHEET	
	1:200	024		AG2070-01-04.dwg	AG03	
		11-11A EDINBURGH RD, MARRICKVILLE NSW 2204				

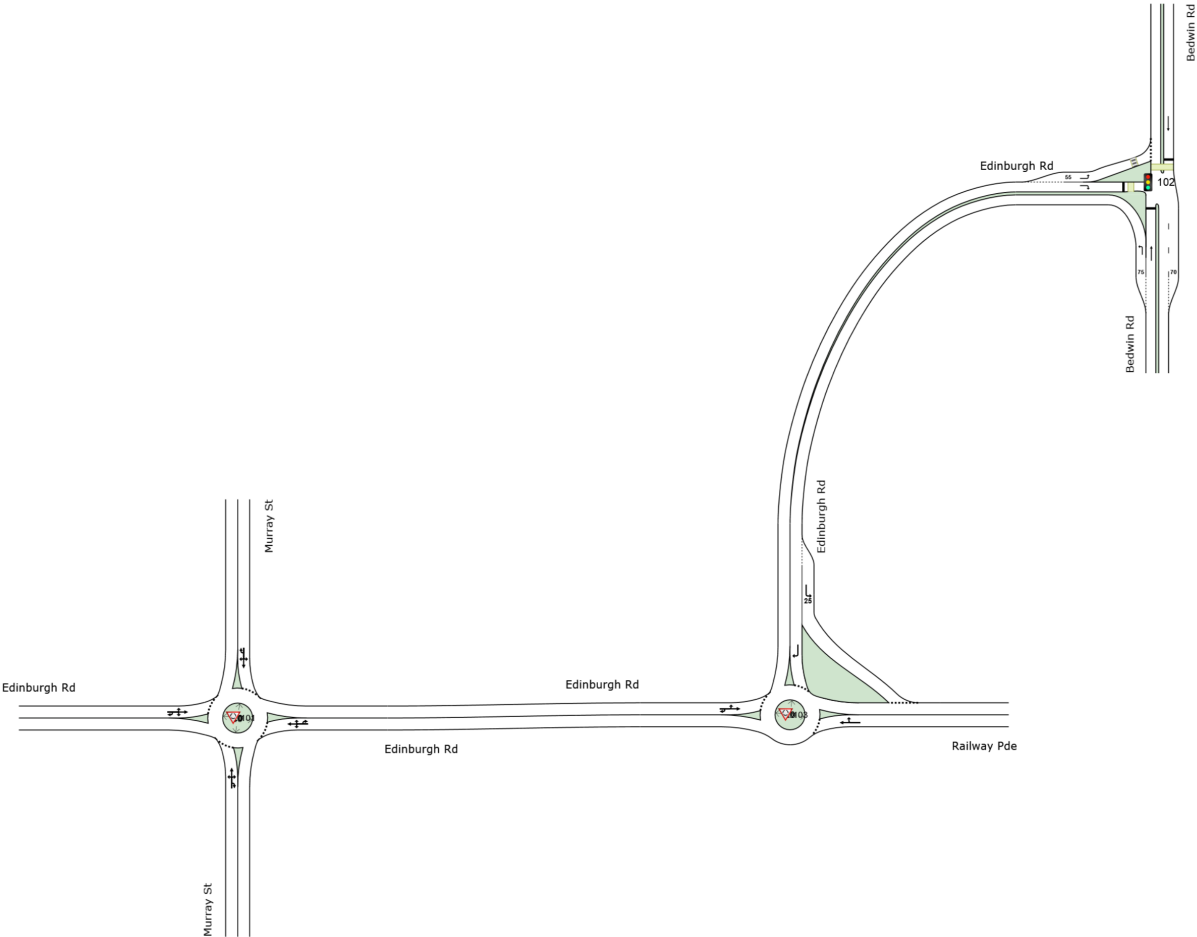
Appendix B. SIDRA Modelling Results

NETWORK LAYOUT

Network: N101 [Existing AM (Network Folder: Networks)]

New Network
Network Category: (None)

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



SITES IN NETWORK		
Site ID	CCG ID	Site Name
101	NA	Edinburgh Rd / Murray St AM
103	NA	Edinburgh Rd / Railway Pde AM
102	NA	Edinburgh Rd / Bedwin Rd AM

NETWORK LAYOUT

Network: N102 [Existing PM (Network Folder: Networks)]

New Network
Network Category: (None)

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



SITES IN NETWORK		
Site ID	CCG ID	Site Name
101	NA	Edinburgh Rd / Murray St PM
103	NA	Edinburgh Rd / Railway Pde PM
102	NA	Edinburgh Rd / Bedwin Rd PM

MOVEMENT SUMMARY

 **Site: 101 [Edinburgh Rd / Murray St AM (Site Folder: Existing)]**

 **Network: N101 [Existing AM (Network Folder: Networks)]**

Edinburgh Rd / Murray St Existing AM
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Murray St														
1	L2	5	0.0	5	0.0	0.014	6.3	LOS A	0.0	0.2	0.58	0.60	0.58	41.9
2	T1	1	0.0	1	0.0	0.014	6.3	LOS A	0.0	0.2	0.58	0.60	0.58	39.7
3	R2	3	66.7	3	66.7	0.014	12.0	LOS A	0.0	0.2	0.58	0.60	0.58	41.3
3u	U	1	0.0	1	0.0	0.014	11.2	LOS A	0.0	0.2	0.58	0.60	0.58	45.9
Approach		11	20.0	11	20.0	0.014	8.5	LOS A	0.0	0.2	0.58	0.60	0.58	42.1
East: Edinburgh Rd														
4	L2	1	0.0	1	0.0	0.347	4.0	LOS A	1.0	7.3	0.28	0.47	0.28	43.9
5	T1	349	9.0	349	9.0	0.347	4.1	LOS A	1.0	7.3	0.28	0.47	0.28	38.3
6	R2	106	5.9	106	5.9	0.347	7.4	LOS A	1.0	7.3	0.28	0.47	0.28	32.1
6u	U	1	0.0	1	0.0	0.347	8.8	LOS A	1.0	7.3	0.28	0.47	0.28	32.9
Approach		458	8.3	458	8.3	0.347	4.9	LOS A	1.0	7.3	0.28	0.47	0.28	36.8
North: Murray St														
7	L2	43	4.9	43	4.9	0.100	5.5	LOS A	0.2	1.6	0.50	0.64	0.50	24.5
8	T1	1	100.0	1	100.0	0.100	7.7	LOS A	0.2	1.6	0.50	0.64	0.50	42.0
9	R2	45	11.6	45	11.6	0.100	8.9	LOS A	0.2	1.6	0.50	0.64	0.50	32.6
9u	U	2	0.0	2	0.0	0.100	10.3	LOS A	0.2	1.6	0.50	0.64	0.50	24.1
Approach		92	9.2	92	9.2	0.100	7.3	LOS A	0.2	1.6	0.50	0.64	0.50	29.7
West: Edinburgh Rd														
10	L2	141	6.7	141	6.7	0.379	4.4	LOS A	1.0	7.7	0.37	0.48	0.37	34.3
11	T1	313	5.1	313	5.1	0.379	4.4	LOS A	1.0	7.7	0.37	0.48	0.37	30.8
12	R2	6	66.7	6	66.7	0.379	8.9	LOS A	1.0	7.7	0.37	0.48	0.37	43.3
12u	U	5	40.0	5	40.0	0.379	9.9	LOS A	1.0	7.7	0.37	0.48	0.37	32.3
Approach		465	6.8	465	6.8	0.379	4.6	LOS A	1.0	7.7	0.37	0.48	0.37	32.6
All Vehicles		1025	7.8	1025	7.8	0.379	5.0	LOS A	1.0	7.7	0.34	0.49	0.34	34.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

Roundabout Capacity Model: SIDRA Standard.

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

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

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

MOVEMENT SUMMARY

 **Site: 103 [Edinburgh Rd / Railway Pde AM (Site Folder: Existing)]**

 **Network: N101 [Existing AM (Network Folder: Networks)]**

Edinburgh Rd / Railway Pde Existing AM
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist m				
East: Railway Pde														
5	T1	80	13.2	80	13.2	0.116	6.2	LOS A	0.2	1.8	0.52	0.62	0.52	30.7
6	R2	22	0.0	22	0.0	0.116	9.2	LOS A	0.2	1.8	0.52	0.62	0.52	30.7
Approach		102	10.3	102	10.3	0.116	6.9	LOS A	0.2	1.8	0.52	0.62	0.52	30.7
North: Edinburgh Rd														
7	L2	1	0.0	1	0.0	0.001	3.2	LOS A	0.0	0.0	0.05	0.46	0.05	38.9
9	R2	397	8.8	397	8.8	0.237	6.7	LOS A	0.5	4.1	0.07	0.61	0.07	24.5
Approach		398	8.7	398	8.7	0.237	6.7	LOS A	0.5	4.1	0.07	0.61	0.07	24.6
West: Edinburgh Rd														
10	L2	293	6.8	293	6.8	0.211	3.7	LOS A	0.5	3.9	0.13	0.46	0.13	35.3
11	T1	7	0.0	7	0.0	0.211	3.7	LOS A	0.5	3.9	0.13	0.46	0.13	42.3
12u	U	2	0.0	2	0.0	0.211	8.5	LOS A	0.5	3.9	0.13	0.46	0.13	35.3
Approach		302	6.6	302	6.6	0.211	3.8	LOS A	0.5	3.9	0.13	0.46	0.13	35.5
All Vehicles		802	8.1	802	8.1	0.237	5.6	LOS A	0.5	4.1	0.15	0.55	0.15	29.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 102 [Edinburgh Rd / Bedwin Rd AM (Site Folder: Existing)]

Network: N101 [Existing AM (Network Folder: Networks)]

Edinburgh Rd / Bedwin Rd Existing AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Bedwin Rd														
1	L2	407	8.8	407	8.8	0.233	5.7	LOS A	0.0	0.0	0.00	0.52	0.00	43.7
2	T1	705	2.2	705	2.2	0.688	11.2	LOS A	9.4	67.2	0.79	0.71	0.79	36.6
Approach		1113	4.6	1113	4.6	0.688	9.2	LOS A	9.4	67.2	0.50	0.64	0.50	38.7
North: Bedwin Rd														
8	T1	785	2.8	785	2.8	* 0.769	15.1	LOS B	12.1	86.4	0.85	0.81	0.91	33.5
Approach		785	2.8	785	2.8	0.769	15.1	LOS B	12.1	86.4	0.85	0.81	0.91	33.5
West: Edinburgh Rd														
10	L2	47	0.0	47	0.0	0.066	9.6	LOS A	0.3	2.4	0.54	0.64	0.54	24.3
12	R2	269	8.6	269	8.6	* 0.660	28.5	LOS B	4.7	35.2	0.96	0.85	1.02	21.1
Approach		317	7.3	317	7.3	0.660	25.7	LOS B	4.7	35.2	0.90	0.82	0.95	21.3
All Vehicles		2215	4.4	2215	4.4	0.769	13.6	LOS A	12.1	86.4	0.68	0.73	0.71	33.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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).
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	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: Bedwin Rd											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13
West: Edinburgh Rd											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13
All Pedestrians		105	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13

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: 101 [Edinburgh Rd / Murray St PM (Site Folder: Existing)]**

 **Network: N102 [Existing PM (Network Folder: Networks)]**

Edinburgh Rd / Murray St Existing PM
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Murray St														
1	L2	3	66.7	3	66.7	0.014	11.3	LOS A	0.0	0.3	0.73	0.67	0.73	37.1
2	T1	1	0.0	1	0.0	0.014	8.2	LOS A	0.0	0.3	0.73	0.67	0.73	37.2
3	R2	2	0.0	2	0.0	0.014	11.5	LOS A	0.0	0.3	0.73	0.67	0.73	38.3
3u	U	1	0.0	1	0.0	0.014	13.1	LOS A	0.0	0.3	0.73	0.67	0.73	43.8
Approach		7	28.6	7	28.6	0.014	11.2	LOS A	0.0	0.3	0.73	0.67	0.73	38.7
East: Edinburgh Rd														
4	L2	1	0.0	1	0.0	0.511	4.8	LOS A	1.7	12.2	0.52	0.57	0.52	42.9
5	T1	428	2.7	428	2.7	0.511	4.9	LOS A	1.7	12.2	0.52	0.57	0.52	36.9
6	R2	177	6.5	177	6.5	0.511	8.3	LOS A	1.7	12.2	0.52	0.57	0.52	30.6
6u	U	2	0.0	2	0.0	0.511	9.7	LOS A	1.7	12.2	0.52	0.57	0.52	30.6
Approach		608	3.8	608	3.8	0.511	5.9	LOS A	1.7	12.2	0.52	0.57	0.52	35.0
North: Murray St														
7	L2	98	1.1	98	1.1	0.241	5.6	LOS A	0.6	4.2	0.56	0.68	0.56	24.1
8	T1	1	0.0	1	0.0	0.241	5.6	LOS A	0.6	4.2	0.56	0.68	0.56	43.0
9	R2	122	6.0	122	6.0	0.241	9.1	LOS A	0.6	4.2	0.56	0.68	0.56	32.6
9u	U	5	0.0	5	0.0	0.241	10.5	LOS A	0.6	4.2	0.56	0.68	0.56	23.9
Approach		226	3.7	226	3.7	0.241	7.6	LOS A	0.6	4.2	0.56	0.68	0.56	29.6
West: Edinburgh Rd														
10	L2	137	3.8	137	3.8	0.415	5.0	LOS A	1.2	8.6	0.51	0.56	0.51	33.2
11	T1	304	2.4	304	2.4	0.415	5.0	LOS A	1.2	8.6	0.51	0.56	0.51	29.2
12	R2	1	0.0	1	0.0	0.415	8.2	LOS A	1.2	8.6	0.51	0.56	0.51	44.2
12u	U	23	13.6	23	13.6	0.415	10.1	LOS A	1.2	8.6	0.51	0.56	0.51	32.3
Approach		465	3.4	465	3.4	0.415	5.3	LOS A	1.2	8.6	0.51	0.56	0.51	31.0
All Vehicles		1307	3.8	1307	3.8	0.511	6.0	LOS A	1.7	12.2	0.52	0.59	0.52	33.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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Project: C:\Users\Sadeepth\Ason Group\Ason Group Team Site - 2070\Projects\Modelling\P2070m01_11-11a Edinburgh Road, Marrickville.sip9

MOVEMENT SUMMARY

 **Site: 103 [Edinburgh Rd / Railway Pde PM (Site Folder: Existing)]**

 **Network: N102 [Existing PM (Network Folder: Networks)]**

Edinburgh Rd / Railway Pde Existing PM
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
East: Railway Pde														
5	T1	111	5.7	111	5.7	0.152	7.0	LOS A	0.3	2.3	0.60	0.67	0.60	30.3
6	R2	12	0.0	12	0.0	0.152	10.1	LOS A	0.3	2.3	0.60	0.67	0.60	30.3
Approach		122	5.2	122	5.2	0.152	7.3	LOS A	0.3	2.3	0.60	0.67	0.60	30.3
North: Edinburgh Rd														
7	L2	3	0.0	3	0.0	0.002	3.2	LOS A	0.0	0.0	0.07	0.45	0.07	38.7
9	R2	532	1.6	532	1.6	0.312	6.7	LOS A	0.8	5.5	0.10	0.60	0.10	24.3
Approach		535	1.6	535	1.6	0.312	6.7	LOS A	0.8	5.5	0.10	0.60	0.10	24.4
West: Edinburgh Rd														
10	L2	365	1.2	365	1.2	0.313	3.6	LOS A	0.7	4.7	0.09	0.46	0.09	35.6
11	T1	14	0.0	14	0.0	0.313	3.6	LOS A	0.7	4.7	0.09	0.46	0.09	42.6
12u	U	3	0.0	3	0.0	0.313	8.5	LOS A	0.7	4.7	0.09	0.46	0.09	35.6
Approach		382	1.1	382	1.1	0.313	3.7	LOS A	0.7	4.7	0.09	0.46	0.09	36.0
All Vehicles		1039	1.8	1039	1.8	0.313	5.6	LOS A	0.8	5.5	0.15	0.56	0.15	29.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 102 [Edinburgh Rd / Bedwin Rd PM (Site Folder: Existing)]

Network: N102 [Existing PM (Network Folder: Networks)]

Edinburgh Rd / Bedwin Rd Existing PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Bedwin Rd														
1	L2	523	1.6	523	1.6	0.285	5.7	LOS A	0.0	0.0	0.00	0.53	0.00	43.7
2	T1	791	0.8	791	0.8	* 0.764	13.6	LOS A	12.0	84.5	0.85	0.80	0.90	33.9
Approach		1314	1.1	1314	1.1	0.764	10.4	LOS A	12.0	84.5	0.51	0.69	0.54	36.9
North: Bedwin Rd														
8	T1	715	1.2	715	1.2	0.693	12.6	LOS A	9.6	67.8	0.80	0.71	0.80	36.6
Approach		715	1.2	715	1.2	0.693	12.6	LOS A	9.6	67.8	0.80	0.71	0.80	36.6
West: Edinburgh Rd														
10	L2	36	0.0	36	0.0	0.054	10.9	LOS A	0.3	2.0	0.59	0.64	0.59	22.9
12	R2	336	0.9	336	0.9	* 0.780	31.7	LOS C	6.4	45.1	0.99	0.93	1.20	20.2
Approach		372	0.8	372	0.8	0.780	29.7	LOS C	6.4	45.1	0.95	0.91	1.14	20.3
All Vehicles		2400	1.1	2400	1.1	0.780	14.1	LOS A	12.0	84.5	0.66	0.73	0.71	32.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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).
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	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: Bedwin Rd											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13
West: Edinburgh Rd											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13
All Pedestrians		105	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13

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: 101 [Edinburgh Rd / Murray St AM 2 (Site Folder: Existing + Woolworths)]**

 **Network: N101 [Existing + Woolworths AM (Network Folder: Networks)]**

Edinburgh Rd / Murray St Existing + Woolies AM
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist m				km/h
South: Murray St														
1	L2	5	0.0	5	0.0	0.014	6.3	LOS A	0.0	0.2	0.58	0.61	0.58	41.8
2	T1	1	0.0	1	0.0	0.014	6.4	LOS A	0.0	0.2	0.58	0.61	0.58	39.7
3	R2	3	66.7	3	66.7	0.014	12.0	LOS A	0.0	0.2	0.58	0.61	0.58	41.3
3u	U	1	0.0	1	0.0	0.014	11.2	LOS A	0.0	0.2	0.58	0.61	0.58	45.8
Approach		11	20.0	11	20.0	0.014	8.5	LOS A	0.0	0.2	0.58	0.61	0.58	42.1
East: Edinburgh Rd														
4	L2	1	0.0	1	0.0	0.347	3.8	LOS A	1.0	7.2	0.18	0.45	0.18	44.3
5	T1	387	8.7	387	8.7	0.347	3.9	LOS A	1.0	7.2	0.18	0.45	0.18	39.1
6	R2	106	5.9	106	5.9	0.347	7.2	LOS A	1.0	7.2	0.18	0.45	0.18	32.7
6u	U	1	0.0	1	0.0	0.347	8.6	LOS A	1.0	7.2	0.18	0.45	0.18	33.8
Approach		496	8.1	496	8.1	0.347	4.6	LOS A	1.0	7.2	0.18	0.45	0.18	37.7
North: Murray St														
7	L2	43	4.9	43	4.9	0.067	5.4	LOS A	0.1	1.1	0.50	0.60	0.50	25.6
8	T1	2	50.0	2	50.0	0.067	6.3	LOS A	0.1	1.1	0.50	0.60	0.50	43.6
9	R2	13	50.0	13	50.0	0.067	9.7	LOS A	0.1	1.1	0.50	0.60	0.50	30.9
9u	U	1	0.0	1	0.0	0.067	10.2	LOS A	0.1	1.1	0.50	0.60	0.50	24.6
Approach		59	16.1	59	16.1	0.067	6.4	LOS A	0.1	1.1	0.50	0.60	0.50	29.1
West: Edinburgh Rd														
10	L2	120	8.8	120	8.8	0.362	4.4	LOS A	0.9	7.1	0.36	0.48	0.36	34.3
11	T1	311	5.8	311	5.8	0.362	4.4	LOS A	0.9	7.1	0.36	0.48	0.36	30.9
12	R2	6	66.7	6	66.7	0.362	8.8	LOS A	0.9	7.1	0.36	0.48	0.36	43.4
12u	U	5	40.0	5	40.0	0.362	9.9	LOS A	0.9	7.1	0.36	0.48	0.36	32.4
Approach		442	7.9	442	7.9	0.362	4.6	LOS A	0.9	7.1	0.36	0.48	0.36	32.6
All Vehicles		1007	8.6	1007	8.6	0.362	4.7	LOS A	1.0	7.2	0.28	0.47	0.28	35.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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Project: C:\Users\Sadeepth\Ason Group\Ason Group Team Site - 2070\Projects\Modelling\P2070m01_11-11a Edinburgh Road, Marrickville.sip9

MOVEMENT SUMMARY

Site: 103 [Edinburgh Rd / Railway Pde AM 2 (Site Folder: Existing + Woolworths)]

Network: N101 [Existing + Woolworths AM (Network Folder: Networks)]

Edinburgh Rd / Railway Pde Existing + Woolies AM
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist m				
East: Railway Pde														
5	T1	92	12.6	92	12.6	0.138	6.4	LOS A	0.3	2.1	0.55	0.64	0.55	30.5
6	R2	22	0.0	22	0.0	0.138	9.4	LOS A	0.3	2.1	0.55	0.64	0.55	30.5
Approach		114	10.2	114	10.2	0.138	7.0	LOS A	0.3	2.1	0.55	0.64	0.55	30.5
North: Edinburgh Rd														
7	L2	1	0.0	1	0.0	0.001	3.2	LOS A	0.0	0.0	0.09	0.45	0.09	38.6
9	R2	419	8.5	419	8.5	0.260	6.7	LOS A	0.6	4.7	0.12	0.59	0.12	24.2
Approach		420	8.5	420	8.5	0.260	6.7	LOS A	0.6	4.7	0.12	0.59	0.12	24.2
West: Edinburgh Rd														
10	L2	341	6.5	341	6.5	0.302	3.7	LOS A	0.7	4.9	0.14	0.46	0.14	35.2
11	T1	19	5.6	19	5.6	0.302	3.7	LOS A	0.7	4.9	0.14	0.46	0.14	41.5
12u	U	4	0.0	4	0.0	0.302	8.6	LOS A	0.7	4.9	0.14	0.46	0.14	35.2
Approach		364	6.4	364	6.4	0.302	3.8	LOS A	0.7	4.9	0.14	0.46	0.14	35.7
All Vehicles		898	7.9	898	7.9	0.302	5.6	LOS A	0.7	4.9	0.18	0.55	0.18	29.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 102 [Edinburgh Rd / Bedwin Rd AM 2 (Site Folder: Existing + Woolworths)]

Network: N101 [Existing + Woolworths AM (Network Folder: Networks)]

Edinburgh Rd / Bedwin Rd Existing + Woolies AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Bedwin Rd														
1	L2	429	8.6	429	8.6	0.245	5.7	LOS A	0.0	0.0	0.00	0.52	0.00	43.7
2	T1	705	2.2	705	2.2	0.688	11.2	LOS A	9.4	67.2	0.79	0.71	0.79	36.6
Approach		1135	4.6	1135	4.6	0.688	9.1	LOS A	9.4	67.2	0.49	0.64	0.49	38.8
North: Bedwin Rd														
8	T1	785	2.8	785	2.8	* 0.769	15.3	LOS B	12.1	86.4	0.85	0.81	0.91	33.5
Approach		785	2.8	785	2.8	0.769	15.3	LOS B	12.1	86.4	0.85	0.81	0.91	33.5
West: Edinburgh Rd														
10	L2	59	1.8	59	1.8	0.083	9.7	LOS A	0.4	3.0	0.55	0.65	0.55	24.2
12	R2	307	8.2	307	8.2	* 0.751	30.8	LOS C	5.7	42.9	0.99	0.91	1.15	20.2
Approach		366	7.2	366	7.2	0.751	27.4	LOS B	5.7	42.9	0.91	0.87	1.05	20.5
All Vehicles		2286	4.4	2286	4.4	0.769	14.2	LOS A	12.1	86.4	0.68	0.74	0.73	32.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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).
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	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: Bedwin Rd											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13
West: Edinburgh Rd											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13
All Pedestrians		105	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13

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: 101 [Edinburgh Rd / Murray St PM 2 (Site Folder: Existing + Woolworths)]**

 **Network: N102 [Existing + Woolworths PM (Network Folder: Networks)]**

Edinburgh Rd / Murray St Existing + Woolies PM
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Murray St														
1	L2	3	66.7	3	66.7	0.017	12.2	LOS A	0.0	0.3	0.76	0.70	0.76	36.1
2	T1	1	0.0	1	0.0	0.017	8.9	LOS A	0.0	0.3	0.76	0.70	0.76	36.3
3	R2	2	0.0	2	0.0	0.017	12.2	LOS A	0.0	0.3	0.76	0.70	0.76	37.1
3u	U	1	100.0	1	100.0	0.017	19.2	LOS B	0.0	0.3	0.76	0.70	0.76	41.8
Approach		7	42.9	7	42.9	0.017	12.7	LOS A	0.0	0.3	0.76	0.70	0.76	37.5
East: Edinburgh Rd														
4	L2	1	0.0	1	0.0	0.557	5.0	LOS A	2.0	14.1	0.57	0.58	0.57	42.8
5	T1	476	2.9	476	2.9	0.557	5.1	LOS A	2.0	14.1	0.57	0.58	0.57	36.6
6	R2	177	6.5	177	6.5	0.557	8.4	LOS A	2.0	14.1	0.57	0.58	0.57	30.4
6u	U	2	0.0	2	0.0	0.557	9.9	LOS A	2.0	14.1	0.57	0.58	0.57	30.3
Approach		656	3.9	656	3.9	0.557	6.0	LOS A	2.0	14.1	0.57	0.58	0.57	34.9
North: Murray St														
7	L2	98	1.1	98	1.1	0.265	6.0	LOS A	0.7	4.7	0.61	0.72	0.61	23.4
8	T1	1	0.0	1	0.0	0.265	6.0	LOS A	0.7	4.7	0.61	0.72	0.61	42.6
9	R2	133	5.6	133	5.6	0.265	9.5	LOS A	0.7	4.7	0.61	0.72	0.61	32.0
9u	U	5	0.0	5	0.0	0.265	10.9	LOS A	0.7	4.7	0.61	0.72	0.61	23.5
Approach		237	3.6	237	3.6	0.265	8.1	LOS A	0.7	4.7	0.61	0.72	0.61	29.1
West: Edinburgh Rd														
10	L2	153	4.1	153	4.1	0.473	5.1	LOS A	1.5	10.6	0.55	0.57	0.55	32.9
11	T1	357	2.7	357	2.7	0.473	5.1	LOS A	1.5	10.6	0.55	0.57	0.55	28.9
12	R2	1	0.0	1	0.0	0.473	8.3	LOS A	1.5	10.6	0.55	0.57	0.55	44.1
12u	U	23	13.6	23	13.6	0.473	10.2	LOS A	1.5	10.6	0.55	0.57	0.55	32.0
Approach		534	3.6	534	3.6	0.473	5.3	LOS A	1.5	10.6	0.55	0.57	0.55	30.6
All Vehicles		1434	3.9	1434	3.9	0.557	6.1	LOS A	2.0	14.1	0.57	0.60	0.57	32.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

Roundabout Capacity Model: SIDRA Standard.

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

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

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

MOVEMENT SUMMARY

 **Site: 103 [Edinburgh Rd / Railway Pde PM 2 (Site Folder: Existing + Woolworths)]**

 **Network: N102 [Existing + Woolworths PM (Network Folder: Networks)]**

Edinburgh Rd / Railway Pde Existing + Woolies PM
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
East: Railway Pde														
5	T1	121	5.2	121	5.2	0.175	7.3	LOS A	0.4	2.7	0.63	0.69	0.63	29.8
6	R2	12	0.0	12	0.0	0.175	10.4	LOS A	0.4	2.7	0.63	0.69	0.63	29.8
Approach		133	4.8	133	4.8	0.175	7.6	LOS A	0.4	2.7	0.63	0.69	0.63	29.8
North: Edinburgh Rd														
7	L2	3	0.0	3	0.0	0.002	3.3	LOS A	0.0	0.0	0.11	0.45	0.11	38.4
9	R2	568	1.7	568	1.7	0.345	6.8	LOS A	0.9	6.4	0.15	0.59	0.15	24.0
Approach		572	1.7	572	1.7	0.345	6.8	LOS A	0.9	6.4	0.15	0.59	0.15	24.1
West: Edinburgh Rd														
10	L2	402	1.3	402	1.3	0.428	3.6	LOS A	0.8	5.6	0.10	0.46	0.10	35.6
11	T1	29	3.6	29	3.6	0.428	3.7	LOS A	0.8	5.6	0.10	0.46	0.10	42.1
12u	U	3	0.0	3	0.0	0.428	8.5	LOS A	0.8	5.6	0.10	0.46	0.10	35.6
Approach		435	1.5	435	1.5	0.428	3.7	LOS A	0.8	5.6	0.10	0.46	0.10	36.3
All Vehicles		1139	1.9	1139	1.9	0.428	5.7	LOS A	0.9	6.4	0.19	0.55	0.19	29.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 102 [Edinburgh Rd / Bedwin Rd PM 2 (Site Folder: Existing + Woolworths)]

Network: N102 [Existing + Woolworths PM (Network Folder: Networks)]

Edinburgh Rd / Bedwin Rd Existing + Woolies PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Bedwin Rd														
1	L2	560	1.7	560	1.7	0.305	5.7	LOS A	0.0	0.0	0.00	0.53	0.00	43.7
2	T1	791	0.8	791	0.8	* 0.764	13.6	LOS A	12.0	84.5	0.85	0.80	0.90	33.9
Approach		1351	1.2	1351	1.2	0.764	10.3	LOS A	12.0	84.5	0.50	0.69	0.53	37.0
North: Bedwin Rd														
8	T1	715	1.2	715	1.2	0.693	12.8	LOS A	9.6	67.8	0.80	0.71	0.80	36.6
Approach		715	1.2	715	1.2	0.693	12.8	LOS A	9.6	67.8	0.80	0.71	0.80	36.6
West: Edinburgh Rd														
10	L2	94	11.2	94	11.2	0.149	11.4	LOS A	0.8	6.2	0.62	0.68	0.62	22.2
12	R2	362	1.2	362	1.2	* 0.843	35.1	LOS C	7.4	52.6	1.00	1.00	1.33	18.9
Approach		456	3.2	456	3.2	0.843	30.2	LOS C	7.4	52.6	0.92	0.93	1.19	19.3
All Vehicles		2521	1.5	2521	1.5	0.843	14.6	LOS B	12.0	84.5	0.66	0.74	0.72	31.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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).
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	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: Bedwin Rd											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13
West: Edinburgh Rd											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13
All Pedestrians		105	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13

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: 101 [Edinburgh Rd / Murray St AM 3 (Site Folder: Existing + Woolworths + Development)]**

 **Network: N103 [Existing + Woolworths + Development AM (Network Folder: Networks)]**

Edinburgh Rd / Murray St Existing + Woolies + Dev AM
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist m				km/h
South: Murray St														
1	L2	5	0.0	5	0.0	0.015	6.6	LOS A	0.0	0.3	0.61	0.62	0.61	41.5
2	T1	1	0.0	1	0.0	0.015	6.7	LOS A	0.0	0.3	0.61	0.62	0.61	39.4
3	R2	3	66.7	3	66.7	0.015	12.5	LOS A	0.0	0.3	0.61	0.62	0.61	41.0
3u	U	1	0.0	1	0.0	0.015	11.5	LOS A	0.0	0.3	0.61	0.62	0.61	45.6
Approach		11	20.0	11	20.0	0.015	8.9	LOS A	0.0	0.3	0.61	0.62	0.61	41.8
East: Edinburgh Rd														
4	L2	1	0.0	1	0.0	0.383	4.1	LOS A	1.1	8.3	0.32	0.48	0.32	43.8
5	T1	387	8.7	387	8.7	0.383	4.2	LOS A	1.1	8.3	0.32	0.48	0.32	38.1
6	R2	106	5.9	106	5.9	0.383	7.5	LOS A	1.1	8.3	0.32	0.48	0.32	31.9
6u	U	1	0.0	1	0.0	0.383	9.0	LOS A	1.1	8.3	0.32	0.48	0.32	32.6
Approach		496	8.1	496	8.1	0.383	4.9	LOS A	1.1	8.3	0.32	0.48	0.32	36.7
North: Murray St														
7	L2	44	4.8	44	4.8	0.115	5.5	LOS A	0.2	1.8	0.51	0.65	0.51	24.3
8	T1	2	50.0	2	50.0	0.115	6.5	LOS A	0.2	1.8	0.51	0.65	0.51	42.5
9	R2	57	11.1	57	11.1	0.115	9.0	LOS A	0.2	1.8	0.51	0.65	0.51	32.4
9u	U	2	0.0	2	0.0	0.115	10.3	LOS A	0.2	1.8	0.51	0.65	0.51	24.0
Approach		105	9.0	105	9.0	0.115	7.5	LOS A	0.2	1.8	0.51	0.65	0.51	30.2
West: Edinburgh Rd														
10	L2	119	8.0	119	8.0	0.364	4.4	LOS A	1.0	7.3	0.37	0.48	0.37	34.2
11	T1	313	5.7	313	5.7	0.364	4.4	LOS A	1.0	7.3	0.37	0.48	0.37	30.8
12	R2	6	66.7	6	66.7	0.364	8.8	LOS A	1.0	7.3	0.37	0.48	0.37	43.3
12u	U	5	40.0	5	40.0	0.364	9.9	LOS A	1.0	7.3	0.37	0.48	0.37	32.3
Approach		443	7.6	443	7.6	0.364	4.6	LOS A	1.0	7.3	0.37	0.48	0.37	32.5
All Vehicles		1055	8.1	1055	8.1	0.383	5.1	LOS A	1.1	8.3	0.36	0.50	0.36	34.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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Project: C:\Users\Sadeepth\Ason Group\Ason Group Team Site - 2070\Projects\Modelling\P2070m01_11-11a Edinburgh Road, Marrickville.sip9

MOVEMENT SUMMARY

 **Site: 103 [Edinburgh Rd / Railway Pde AM 3 (Site Folder: Existing + Woolworths + Development)]**

 **Network: N103 [Existing + Woolworths + Development AM (Network Folder: Networks)]**

Edinburgh Rd / Railway Pde Existing + Woolies + Dev AM
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
East: Railway Pde														
5	T1	91	11.6	91	11.6	0.137	6.4	LOS A	0.3	2.0	0.55	0.64	0.55	30.5
6	R2	22	0.0	22	0.0	0.137	9.4	LOS A	0.3	2.0	0.55	0.64	0.55	30.5
Approach		113	9.3	113	9.3	0.137	7.0	LOS A	0.3	2.0	0.55	0.64	0.55	30.5
North: Edinburgh Rd														
7	L2	1	0.0	1	0.0	0.001	3.2	LOS A	0.0	0.0	0.08	0.45	0.08	38.6
9	R2	422	9.0	422	9.0	0.262	6.7	LOS A	0.6	4.7	0.11	0.59	0.11	24.2
Approach		423	9.0	423	9.0	0.262	6.7	LOS A	0.6	4.7	0.11	0.59	0.11	24.3
West: Edinburgh Rd														
10	L2	341	6.5	341	6.5	0.300	3.7	LOS A	0.7	4.9	0.14	0.46	0.14	35.2
11	T1	18	0.0	18	0.0	0.300	3.7	LOS A	0.7	4.9	0.14	0.46	0.14	42.2
12u	U	4	0.0	4	0.0	0.300	8.6	LOS A	0.7	4.9	0.14	0.46	0.14	35.2
Approach		363	6.1	363	6.1	0.300	3.8	LOS A	0.7	4.9	0.14	0.46	0.14	35.7
All Vehicles		899	7.8	899	7.8	0.300	5.6	LOS A	0.7	4.9	0.18	0.55	0.18	29.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 102 [Edinburgh Rd / Bedwin Rd AM 3 (Site Folder: Existing + Woolworths + Development)]

Network: N103 [Existing + Woolworths + Development AM (Network Folder: Networks)]

Edinburgh Rd / Bedwin Rd Existing + Woolies + Dev AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Bedwin Rd														
1	L2	433	9.0	433	9.0	0.248	5.7	LOS A	0.0	0.0	0.00	0.52	0.00	43.7
2	T1	705	2.2	705	2.2	0.688	11.2	LOS A	9.4	67.2	0.79	0.71	0.79	36.6
Approach		1138	4.8	1138	4.8	0.688	9.1	LOS A	9.4	67.2	0.49	0.64	0.49	38.8
North: Bedwin Rd														
8	T1	785	2.8	785	2.8	* 0.769	15.3	LOS B	12.1	86.4	0.85	0.81	0.91	33.5
Approach		785	2.8	785	2.8	0.769	15.3	LOS B	12.1	86.4	0.85	0.81	0.91	33.5
West: Edinburgh Rd														
10	L2	58	0.0	58	0.0	0.081	9.7	LOS A	0.4	2.9	0.55	0.65	0.55	24.2
12	R2	307	7.9	307	7.9	* 0.749	30.7	LOS C	5.7	42.7	0.98	0.91	1.15	20.2
Approach		365	6.6	365	6.6	0.749	27.4	LOS B	5.7	42.7	0.92	0.87	1.05	20.5
All Vehicles		2288	4.4	2288	4.4	0.769	14.2	LOS A	12.1	86.4	0.68	0.74	0.72	32.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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).
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	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m					
North: Bedwin Rd											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13
West: Edinburgh Rd											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13
All Pedestrians		105	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13

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: 101 [Edinburgh Rd / Murray St PM 3 (Site Folder: Existing + Woolworths + Development)]**

 **Network: N104 [Existing + Woolworths + Development PM (Network Folder: Networks)]**

Edinburgh Rd / Murray St Existing + Woolies + Dev PM
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist m				km/h
South: Murray St														
1	L2	3	66.7	3	66.7	0.015	12.2	LOS A	0.0	0.3	0.76	0.68	0.76	36.6
2	T1	1	0.0	1	0.0	0.015	8.9	LOS A	0.0	0.3	0.76	0.68	0.76	36.8
3	R2	2	0.0	2	0.0	0.015	12.2	LOS A	0.0	0.3	0.76	0.68	0.76	37.7
3u	U	1	0.0	1	0.0	0.015	13.7	LOS A	0.0	0.3	0.76	0.68	0.76	43.5
Approach		7	28.6	7	28.6	0.015	11.9	LOS A	0.0	0.3	0.76	0.68	0.76	38.3
East: Edinburgh Rd														
4	L2	1	0.0	1	0.0	0.557	5.0	LOS A	2.0	14.1	0.57	0.58	0.57	42.8
5	T1	476	2.9	476	2.9	0.557	5.1	LOS A	2.0	14.1	0.57	0.58	0.57	36.6
6	R2	177	6.5	177	6.5	0.557	8.4	LOS A	2.0	14.1	0.57	0.58	0.57	30.4
6u	U	2	0.0	2	0.0	0.557	9.8	LOS A	2.0	14.1	0.57	0.58	0.57	30.3
Approach		656	3.9	656	3.9	0.557	6.0	LOS A	2.0	14.1	0.57	0.58	0.57	34.9
North: Murray St														
7	L2	101	3.1	101	3.1	0.270	6.1	LOS A	0.7	4.8	0.61	0.72	0.61	23.4
8	T1	1	0.0	1	0.0	0.270	6.1	LOS A	0.7	4.8	0.61	0.72	0.61	42.6
9	R2	133	5.6	133	5.6	0.270	9.5	LOS A	0.7	4.8	0.61	0.72	0.61	32.0
9u	U	5	0.0	5	0.0	0.270	10.9	LOS A	0.7	4.8	0.61	0.72	0.61	23.5
Approach		240	4.4	240	4.4	0.270	8.1	LOS A	0.7	4.8	0.61	0.72	0.61	29.0
West: Edinburgh Rd														
10	L2	153	4.1	153	4.1	0.473	5.1	LOS A	1.5	10.6	0.55	0.57	0.55	32.9
11	T1	357	2.7	357	2.7	0.473	5.1	LOS A	1.5	10.6	0.55	0.57	0.55	28.9
12	R2	1	0.0	1	0.0	0.473	8.3	LOS A	1.5	10.6	0.55	0.57	0.55	44.1
12u	U	23	13.6	23	13.6	0.473	10.2	LOS A	1.5	10.6	0.55	0.57	0.55	32.1
Approach		534	3.6	534	3.6	0.473	5.3	LOS A	1.5	10.6	0.55	0.57	0.55	30.6
All Vehicles		1437	4.0	1437	4.0	0.557	6.1	LOS A	2.0	14.1	0.57	0.60	0.57	32.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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MOVEMENT SUMMARY

 **Site: 103 [Edinburgh Rd / Railway Pde PM 3 (Site Folder: Existing + Woolworths + Development)]**

 **Network: N104 [Existing + Woolworths + Development PM (Network Folder: Networks)]**

Edinburgh Rd / Railway Pde Existing + Woolies + Dev PM
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
East: Railway Pde														
5	T1	121	5.2	121	5.2	0.177	7.3	LOS A	0.4	2.7	0.64	0.69	0.64	29.7
6	R2	12	0.0	12	0.0	0.177	10.5	LOS A	0.4	2.7	0.64	0.69	0.64	29.7
Approach		133	4.8	133	4.8	0.177	7.6	LOS A	0.4	2.7	0.64	0.69	0.64	29.7
North: Edinburgh Rd														
7	L2	3	0.0	3	0.0	0.002	3.3	LOS A	0.0	0.0	0.11	0.45	0.11	38.4
9	R2	573	1.8	573	1.8	0.348	6.8	LOS A	0.9	6.4	0.15	0.59	0.15	24.0
Approach		576	1.8	576	1.8	0.348	6.8	LOS A	0.9	6.4	0.15	0.59	0.15	24.1
West: Edinburgh Rd														
10	L2	405	1.6	405	1.6	0.451	3.6	LOS A	0.8	5.7	0.10	0.46	0.10	35.6
11	T1	29	3.6	29	3.6	0.451	3.7	LOS A	0.8	5.7	0.10	0.46	0.10	42.1
12u	U	3	0.0	3	0.0	0.451	8.5	LOS A	0.8	5.7	0.10	0.46	0.10	35.6
Approach		438	1.7	438	1.7	0.451	3.7	LOS A	0.8	5.7	0.10	0.46	0.10	36.3
All Vehicles		1146	2.1	1146	2.1	0.451	5.7	LOS A	0.9	6.4	0.19	0.55	0.19	29.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 102 [Edinburgh Rd / Bedwin Rd PM 3 (Site Folder: Existing + Woolworths + Development)]

Network: N104 [Existing + Woolworths + Development PM (Network Folder: Networks)]

Edinburgh Rd / Bedwin Rd Existing + Woolies + Dev PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Bedwin Rd														
1	L2	564	1.9	564	1.9	0.308	5.7	LOS A	0.0	0.0	0.00	0.53	0.00	43.7
2	T1	791	0.8	791	0.8	* 0.764	13.6	LOS A	12.0	84.5	0.85	0.80	0.90	33.9
Approach		1355	1.2	1355	1.2	0.764	10.3	LOS A	12.0	84.5	0.50	0.69	0.52	37.0
North: Bedwin Rd														
8	T1	715	1.2	715	1.2	0.693	12.8	LOS A	9.6	67.8	0.80	0.71	0.80	36.6
Approach		715	1.2	715	1.2	0.693	12.8	LOS A	9.6	67.8	0.80	0.71	0.80	36.6
West: Edinburgh Rd														
10	L2	94	11.2	94	11.2	0.149	11.4	LOS A	0.8	6.2	0.62	0.68	0.62	22.2
12	R2	365	1.7	365	1.7	* 0.853	35.9	LOS C	7.6	54.3	1.00	1.01	1.36	18.6
Approach		459	3.7	459	3.7	0.853	30.9	LOS C	7.6	54.3	0.92	0.94	1.21	19.0
All Vehicles		2528	1.7	2528	1.7	0.853	14.7	LOS B	12.0	84.5	0.66	0.74	0.73	31.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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).
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	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: Bedwin Rd											
P3	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13
West: Edinburgh Rd											
P4	Full	53	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13
All Pedestrians		105	24.4	LOS C	0.1	0.1	0.90	0.90	185.6	209.6	1.13

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.