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PROPOSED RESIDENTIAL SUBDIVISION
97 & 145 WARRIGAL ROAD, RUNCORN

TRAFFIC ENGINEERING ASSESSMENT

14 OCTOBER 2026

PREPARED FOR
LGR DEVELOPMENTS PTY LTD

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TRAFFIC & TRANSPORT ENGINEERING

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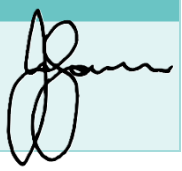
A	FINAL	OCT-26	CJ	RL	JPG (RPEQ 22233)	

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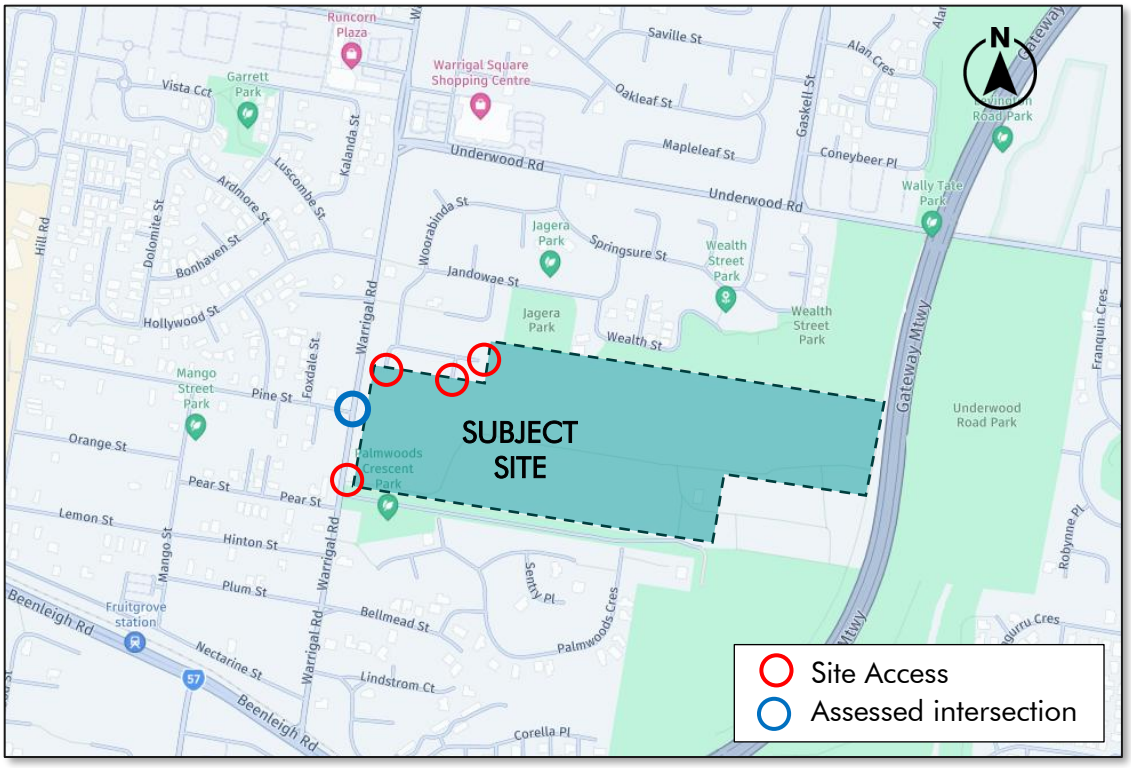
1.0 INTRODUCTION

1.1 BACKGROUND

In April 2026 PTT was commissioned by LGR Developments to undertake a traffic impact assessment for a proposed two into 341 residential lot subdivision and multiple unit residential development, located at 97 & 145 Warrigal Road, Runcorn, as shown in Figure 1.1.

Figure 1.1: SITE LOCALITY



1.2 AIM

The aim of this assessment is to evaluate the proposed development in terms of the access, internal layout, servicing arrangements, pedestrian / cyclist facilities, traffic generation and likely traffic impact on the surrounding road network.

1.3 SCOPE OF REPORT

This report begins by summarising the characteristics of the existing site, external road network and traffic operations (Chapter 2), followed by a description of the proposed development (Chapter 3). The likely traffic operating characteristics are overlayed on top of future year peak hour traffic operations on the adjacent road network to identify potential future traffic impacts (Chapter 4). The report concludes with a summary of key findings (Chapter 5).

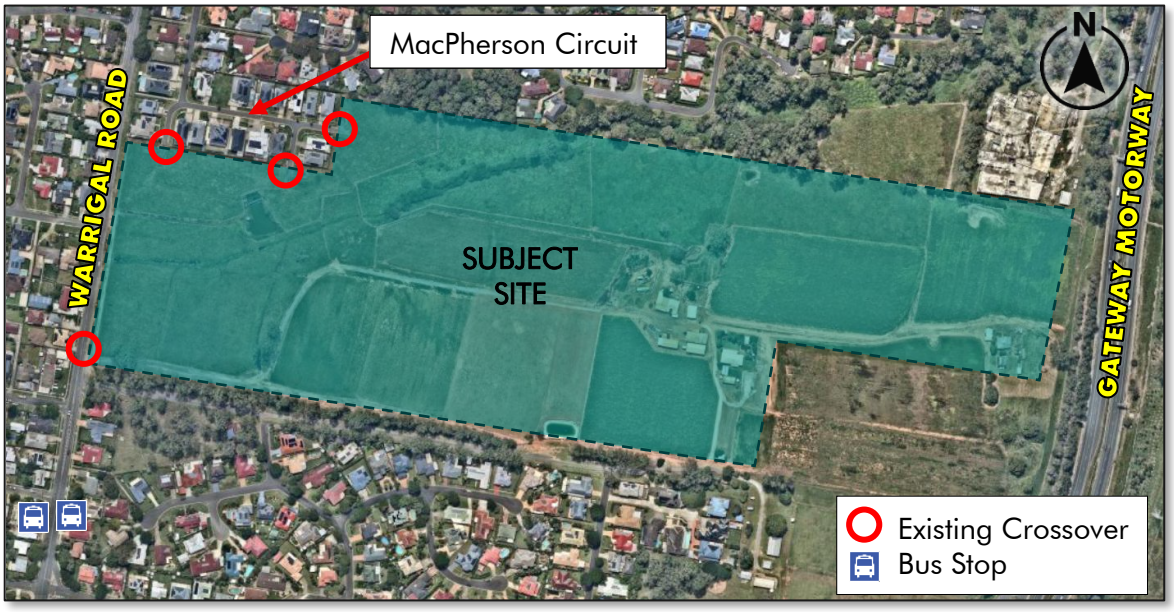
2.0 EXISTING CONDITIONS

2.1 SUBJECT SITE

The subject site is located at 97 & 145 Warrigal Road, Runcorn. It is formally identified as Lot 1 on RP103201 and Lot 910 on SP315946, and the site is currently used for agricultural purposes. According to Brisbane City Council (Council) City Plan 2014, the site is zoned as Emerging Community, and Sport and Recreation and has an approximate site area of 23.5ha. An aerial view of the site is shown in Figure 2.1.

The site is bounded by residential uses and open space to the north and south, Gateway Motorway to the east, and Warrigal Road to the west.

Figure 2.1: SITE LOCALITY



2.2 ACCESS

Vehicular access to the subject site is currently provided by an all-movement crossover on Warrigal Road and connections to the subject site are also provided at the end of MacPherson Circuit as indicated in Figure 2.1.

2.3 SURROUNDING ROAD NETWORK

Key attributes of the road network proximate to the site are summarised in Table 2.1.

Table 2.1: ROAD NETWORK ATTRIBUTES

ATTRIBUTE	WARRIGAL ROAD	PINE STREET
Road Hierarchy	Suburban	Neighbourhood
Cross Section	Undivided with one lane of traffic in each direction	Undivided with one lane of traffic in each direction
Speed Limit (km/h)	60	50
Jurisdiction	Council	Council
Predominant Land Use	Residential	Residential
On-Street Parking	Yes	Yes
Footpaths	Yes (West side)	Yes (North side)
Bicycle Lanes	No	No
Bus Route	Yes	Yes

2.4 TRAFFIC VOLUMES

To assist in the quantification of existing road network operations proximate to the site, turning movement surveys were obtained for the Warrigal Road / Pine Street priority-controlled intersection. These were undertaken from 7:00am to 9:00am and from 2:00pm and 5:00pm on Wednesday, 6 May 2026, to capture the existing weekday morning and evening peak period traffic.

The peak periods for the intersection are shown in Table 2.2, along with key operational attributes of the intersection. The volumes shown represent all vehicles movements through the intersection in the peak hour periods. The traffic count data is provided in Appendix A.

Table 2.2: WARRIGAL ROAD / PINE STREET INTERSECTION ATTRIBUTES

ATTRIBUTE	WEEKDAY MORNING PEAK	WEEKDAY EVENING PEAK
Peak Hour	8:00 – 9:00am	4:00 – 5:00pm
Volume (vph)	1,280 vehicles	1,385 vehicles
% Heavy Vehicles	3.5%	0.6%
Peak Flow Factor	97.9%	99.5%

2.5 INTERSECTION OPERATIONS

2.5.1 SIDRA Analysis Parameters

A SIDRA analysis was conducted to quantity the existing traffic operations on the adjacent external road network. The analysis was based on the traffic count data presented in Appendix A, with:

- peak flow factors as detailed in Table 2.2

- the observed proportion of heavy vehicles (%HV) for each movement
- SIDRA default values for other parameters

The results are presented in terms of the degree of saturation (DOS), 95th percentile vehicle queues and critical movement. The degree of saturation for a movement is defined as the ratio of traffic demand to the capacity of the movement. The critical movement relates to the approach or movement with the highest degree of saturation. Table 2.3 is an extract from the SIDRA manual and defines the operational rating and level of service for all intersection types.

Table 2.3: SIDRA INTERSECTION RATINGS

LEVEL OF SERVICE	DEGREE OF SATURATION		
	SIGNALS	ROUNDABOUT	PRIORITY
LOS A	x <= 0.60	x <= 0.60	x <= 0.60
LOS B	0.60 < x <= 0.70	0.60 < x <= 0.70	0.6 < x <= 0.70
LOS C	0.70 < x <= 0.90	0.70 < x <= 0.85	0.70 < x <= 0.80
LOS D	0.90 < x <= 0.95	0.85 < x <= 0.95	0.80 < x <= 0.90
LOS E	0.95 < x <= 1.00	0.95 < x <= 1.00	0.90 < x <= 1.00
LOS F	1.00 < x	1.00 < x	1.00 < x

2.5.2 Warrigal Road / Pine Street Intersection

The existing intersection layout and equivalent SIDRA representation for the Warrigal Road / Pine Street priority-controlled intersection is shown in Figure 2.2.

The results of the Warrigal Road / Pine Street priority-controlled intersection analysis are summarised in Table 2.4 and attached in Appendix B. The results indicate that the intersection currently experiences LOS A operations during the weekday morning and evening peak hours.

Figure 2.2: WARRIGAL ROAD / PINE STREET INTERSECTION LAYOUT

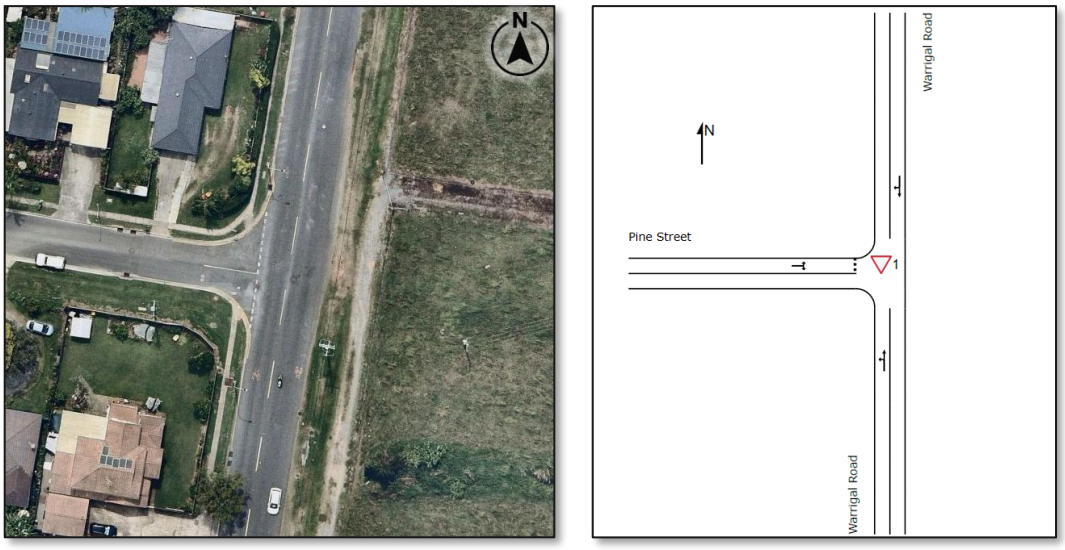


Table 2.4: WARRIGAL ROAD / PINE STREET INTERSECTION OPERATIONS

SCENARIO	DOS	AVERAGE DELAY	95% QUEUE	CRITICAL MOVEMENT
Weekday Morning	35.5%	2.1s	1.5veh	North Approach
Weekday Evening	44.6%	1.4s	1.4veh	North Approach

2.6 ACTIVE TRANSPORT

2.6.1 Pedestrians and Cyclists

Pedestrian footpaths are provided on the western side of Warrigal Road, along the northern side of Pine Street.

There is a secondary cycle route on Warrigal Road.

2.6.2 Public Transport

There is a bus stop pair on both sides of Warrigal Road approximately 120m south and 150m north of the subject site. These stops are serviced by TransLink bus routes 150 and 156, which operate between Browns Plains and Stretton to the south and the Brisbane CBD to the north via the South East Busway. Services operate approximately every 15 minutes off-peak and 10 minutes on-peak between the hours of 5:00am and 11:00pm on weekdays and every 15 minutes between 6:00am and 11:00pm on weekends. The site is also accessible by train with Fruitgrove train station on the Beenleigh line located approximately 600m from the site access. Accordingly, the site is well serviced by public transport.

2.7 PREVIOUS APPROVAL

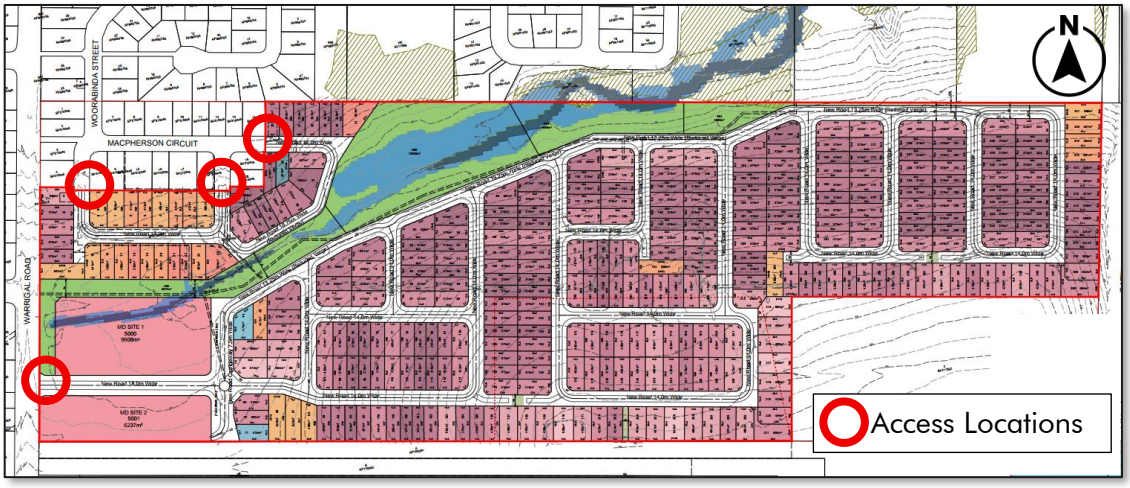
In August 2020, Council approved 254 residential subdivision on the subject site (Council reference: A005515255). This approval provided a connection to the site via an extension of Woorabinda Street and a new intersection on Warrigal Road. The approved intersection on Warrigal Road would form the minor approach of a three-way priority-controlled intersection with Warrigal Road and would be supported by a 40m right turn lane and a 20m long left turn lane. The approved road layout is attached in Appendix E. These upgrades also indicated a 40m long right turn lane into Pine Street. As shown in Figure 2.1, 20 lots of this approval have been constructed on MacPherson Circuit.

3.0 PROPOSED DEVELOPMENT

3.1 SITE LAYOUT

The proposal seeks approval for a Reconfiguration of a Lot (RoL) for a total of 420 dwellings. The proposal comprises 341 lots and multiple dwelling development comprising 79 units. The proposed layout is shown in Figure 3.1 with further development plans attached in Appendix C.

Figure 3.1: SITE LAYOUT



3.2 SITE ACCESS

3.3.1 Location

As shown in Figure 3.1, primary vehicular access to the site is proposed via Warrigal Road and would provide ultimate access to Lots 42 to 334 and the multi-dwelling units. Access to Lots 1 to 41 is proposed via an extension of MacPherson Circuit.

The main access to the site is located approximately 80m south of the Warrigal Road / Pine Street intersection, located generally as per the approved intersection (discussed in Section 2.2.6).

A priority-controlled intersection would be initially provided on Warrigal Road. However, as discussed in Section 4.4.1, it is recommended that that the intersection be upgraded to a signalised intersection prior to the construction of the 281st lot (inclusive of lots 1 to 41).

The layout of the site access intersections are to be provided in accordance with Northrop Consulting Engineers concept drawings.

3.3.2 Sight Distance

A review of Austroads' Guide to Traffic Engineering Practice Part 4A –Unsignalised and Signalised Intersections (Austroads) indicates that the safe intersection sight distance (SISD) requirement for an urban road with a posted speed limit of 60km/h (ie Warrigal Road) is 123m (assuming a reaction time of 2.0sec).

Observations during the site inspection indicate that the sight distance requirement for the site access intersection is satisfied.

3.3 LOT ACCESS

3.3.1 Location

Access to all lots is proposed via the new internal road network.

It is recommended that access to all lots be provided in accordance with Australian Standards AS2890.1 Parking Facilities Part 1: Off-Street Car Parking, Council's Standard Drawing BSD-2022 and Council's Transport Access, Parking and Servicing (TAPS) Policy.

3.3.2 Design

It is recommended that all driveways be designed in accordance Council's Standard Drawing BSD-2022.

3.4 INTERNAL ROAD NETWORK

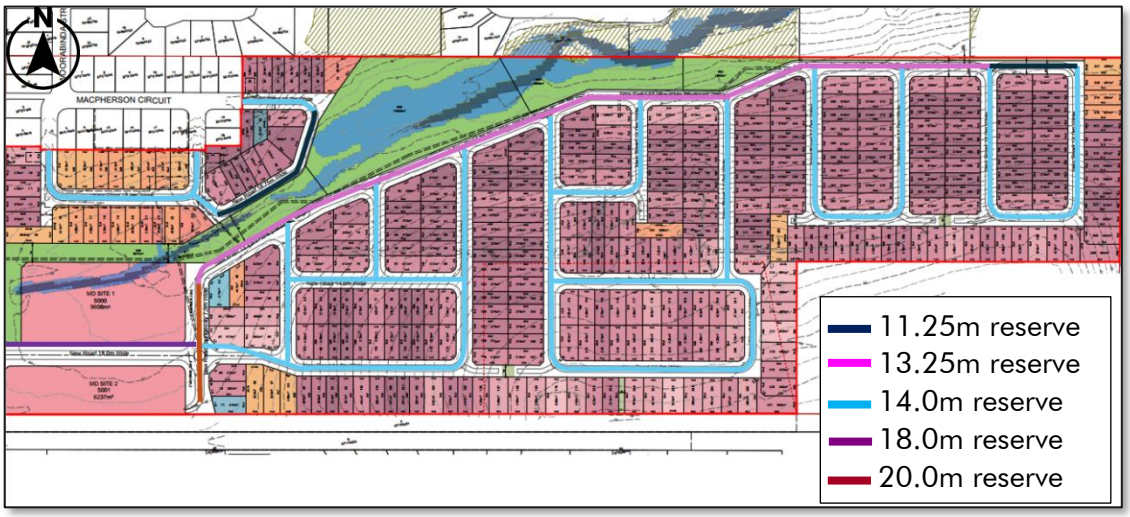
3.4.1 Road Hierarchy

As shown in Figure 3.2, the development provides an 18.0m wide road reserve (ie neighbourhood road as per Council's Standard Drawing BSD-1021) at the main site access, and the majority of the internal road network has been designed with a 14.0m road reserve width (Local Road as per Council's Standard Drawing BSD-1021).

As shown in Figure 3.2, an overland flow area is located adjacent to a local road with a road reserve width of 13.25m. The northern verge width would be reduced along this section. A reduced verge width is expected to be adequate as the features that would typically be located within this verge (ie services, footpaths) could be accommodated within this overland flow area.

Accordingly, the proposed road reserve widths throughout the site are expected to be adequate to cater for the proposed development.

Figure 3.2: ROAD HIERARCHY



3.5 TRAFFIC CALMING

The proposed layout incorporates speed control by restricting the maximum length of straight street sections to 200m through the use of bends and deflected T-intersections in accordance with Council's Standard Drawing BSD-3214.

3.6 ACTIVE TRANSPORT

Council's Standard Drawing for a local road makes provision for pedestrian footpaths. Accordingly, it is recommended that 1.2m wide footpaths be provided along at least one side of the new local roads. Furthermore, it is recommended that a footpath be provided along the western frontage of the site on Warrigal Road to connect to the existing footpaths.

4.0 TRAFFIC OPERATIONS

4.1 DEVELOPMENT PROFILE

4.1.1 Staging

It is standard practice to adopt a ten-year design horizon from the full year of occupation when analysing future year operations on Council's road network. The year of opening has been estimated based on a delivery rate of 50 lots per year. Therefore, the following development staging has been adopted:

- Traffic Counts: 2026
- Development Application: 2026
- Construction and Opening Year: 2034
- Design Horizon: 2044

4.1.2 Assessment Scenarios

The following assessment scenarios have been adopted:

- Opening year (2034) pre-development
- Opening year (2034) post-development
- Future year (2044) pre-development
- Future year (2044) post-development

4.1.3 Background Traffic Growth

The scenarios modelled reflect the development staging with detailed analysis undertaken on the year of opening (2034). Forecast population data published by the Queensland Government Statisticians Office for the Brisbane Region – Local Government Area (LGA) indicates a population growth of rate of 1.0% per annum. While population growth is not equal to traffic growth, it is a useful proxy in the absence of site-specific historical traffic growth data or modelling. Accordingly, we have conservatively adopted a traffic growth rate of 1.0% per annum. The application of this rate equates to an 8.3% increase in background traffic volumes over the next eight years (2026-2034) and a 19.6% increase in background traffic volumes over the next 18 years (ie 2026 – 2044).

4.2 TRAFFIC GENERATION

The predicted peak hour traffic generation of the site has been determined based on the trip generation rate outlined in the TfNSW Guide to Traffic Generating Developments 2024 (ie 0.4 to 0.6 trips per dwelling for medium density and 0.83 trips per dwelling for low density). In:out splits of 20:80 and 70:30 have been adopted for the weekday morning and evening peak hours, respectively. As shown in Table 4.1, the proposed development is expected to generate 322 trips (66 in and 256 out) during the weekday morning peak hour and (225 in and 97 out) in the weekday evening peak hour.

Table 4.1: PEAK HOUR TRAFFIC GENERATION

LAND USE	SCALE	TRIP GENERATION RATE	TRIPS	IN : OUT SPLIT	IN : OUT (VPH)
Weekday Morning					
Low Density Residential	341 Lots	0.83 trips per dwelling	283	20 : 80	57 : 226
Medium Density Residential	79 units	0.5 trips per dwelling	39		9 : 30
Total	**420**		322		66 : 256
Weekday Evening					
Low Density Residential	341 Lots	0.83 trips per dwelling	283	70 : 30	198 : 85
Medium Density Residential	63 units	0.5 trips per dwelling	39		27 : 12
Total	**420**		322		225 : 97

4.3 DIRECTIONAL DISTRIBUTION

The distribution of development related traffic on the existing road network has been estimated based on the directional split inherent in the traffic surveys. The resulting distribution of development traffic for the morning peak and afternoon peak is shown in Figure 4.1 and Figure 4.2.

Figure 4.1: DIRECTIONAL DISTRIBUTION MORNING PEAK

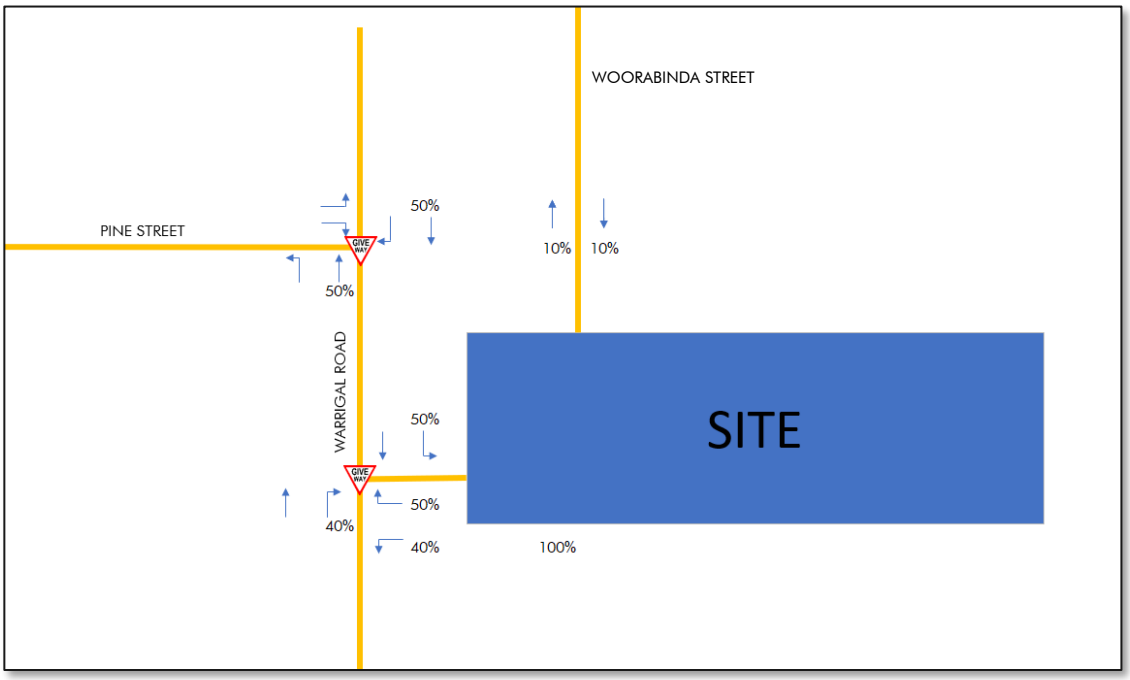
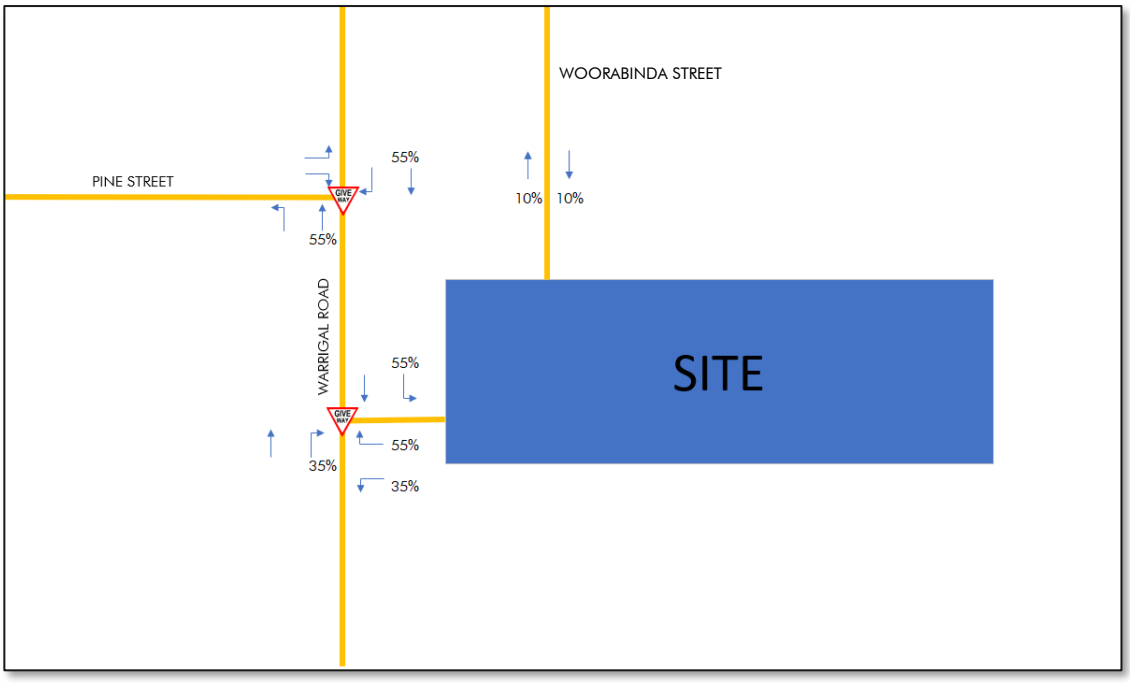


Figure 4.2: DIRECTIONAL DISTRIBUTION EVENING PEAK

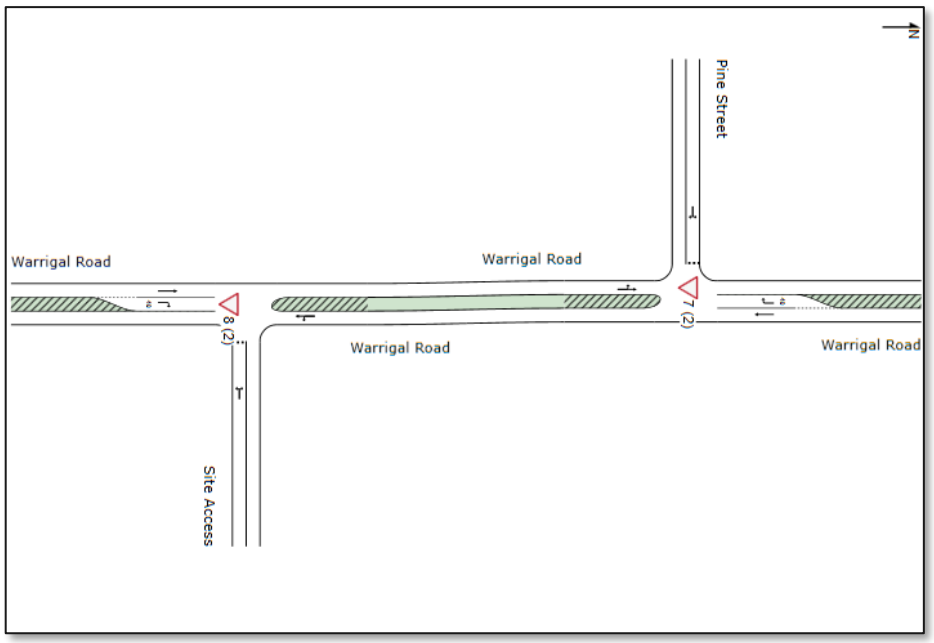


4.4 INTERSECTION PERFORMANCE

The likely impact of the proposed development on the opening year (2034) and future year (2044) peak hour operations of the surrounding road network has been assessed based on the peak hour turning movement forecasts presented in Appendix D.

The proposed site access in Warrigal Road and the Warrigal Road / Pine Street priority-controlled intersection was assessed as a network with the equivalent SIDRA representation shown in Figure 4.3.

Figure 4.3: SIDRA NETWORK UP TO 280 LOTS



4.4.1 Warrigal Road / Site Access

The SIDRA analyses of the Warrigal Road / site access priority-controlled intersection were undertaken using the intersection layout shown in Figure 4.3. The results of these analyses are attached in Appendix C and are summarised in Table 4.2.

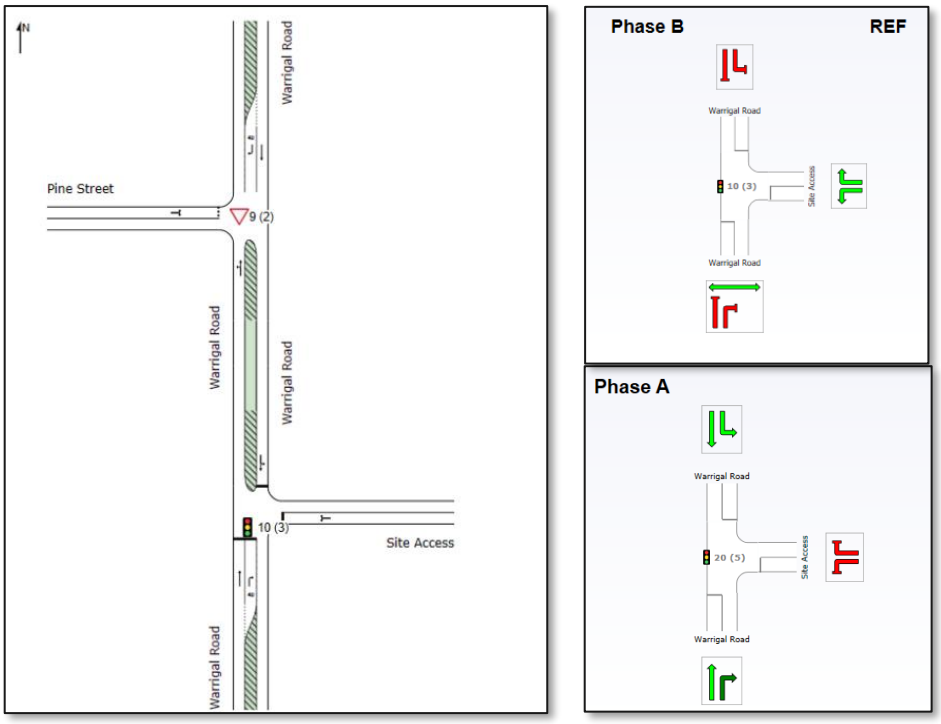
The average delay to right-turn exit movements from the proposed priority-controlled site access exceeds 42.0 seconds during the weekday morning peak. We have tested operations at the priority-controlled site access for a reduced scale of development (ie 280 lots). We have conservatively assumed that the multi-unit dwelling (lower traffic generation per lot) component will be constructed last. As discussed in Section 4.1, a delivery rate of 50 lots per year has been assumed. Accordingly, it has been assumed that the 280 lots mark would be achieved in 2033.

Table 4.2: WARRIGAL RD / SITE ACCESS PRIORITY-CONTROLLED INTERSECTION OPERATIONS 280 LOTS

SCENARIO	DOS	AVERAGE DELAY	95% QUEUE	RIGHT TURN EXIT DELAY	CRITICAL MOVEMENT
Weekday Morning					
2034 Post-Development (398 Lots)	95.9%	10.8s	10.6veh	81.2s	East: Site Access
2033 Post-Development (280 Lots)	66.3%	3.9s	3.5veh	40.7s	East: Site Access
Weekday Evening					
2034 Post-Development (398 Lots)	54.7%	3.0s	2.1veh	51.3s	East: Site Access
2033 Post-Development (280 Lots)	44.2%	2.0s	1.3veh	41.3s	East: Site Access

When considering this reduced scale, average delay to this right-turn exit movement is in the order of 42 seconds. It is therefore recommended that the site access priority-controlled intersection be upgraded to a signalised configuration (shown in Figure 4.4) prior to the sealing of the 281st lot. This would ensure that delay to this right-turn exit movement remains within acceptable limits (ie 42 seconds), as per TMR's GTIA which requires a priority-controlled intersection to be signalised when the peak hour delay on any turn movement exceeds 42 seconds.

Figure 4.4: SIDRA NETWORK ULTIMATE – SIGNALISED SITE ACCESS INTERSECTION



The ultimate signalised site access operates within acceptable limits (ie LOS C or better) during all scenarios for the opening year and design year, as shown in Table 4.3. Thus, no additional upgrades to the access intersection are considered necessary to cater for the proposed development.

Table 4.3: WARRIGAL RD / SITE ACCESS SIGNALISED INTERSECTION OPERATIONS

SCENARIO	DOS	CYCLE TIME	AVERAGE DELAY	95% QUEUE	CRITICAL MOVEMENT
Weekday Morning					
2034 Post-Development	60.0%	80s	14.8s	16.3veh	East Approach
2044 Post-Development	64.8%	80s	14.6s	18.3veh	East Approach
Weekday Evening					
2034 Post-Development	67.9%	80s	10.1s	20.7veh	North Approach Through
2044 Post-Development	74.0%	80s	10.9s	24.5veh	North Approach Through

4.4.2 Warrigal Road / Pine Street

The SIDRA analyses of the Warrigal Road / Pine Street priority-controlled intersection were undertaken using the network layout shown in Figure 4.3 up to 280 lots. The results of these analyses are attached in Appendix C and are summarised in Table 4.4.

Table 4.4: WARRIGAL ROAD / PINE STREET INTERSECTION OPERATIONS (280 LOTS)

SCENARIO	DOS	AVERAGE DELAY	95% QUEUE	CRITICAL MOVEMENT
2033 Weekday Morning				
Pre-Development	37.1%	1.7s	0.9veh	South Approach
Post-Development	41.8%	1.9s	1.1veh	South Approach
2033 Weekday Evening				
Pre-Development	39.5%	1.0s	0.4veh	North Approach
Post-Development	43.3%	1.0s	0.4veh	North Approach

The SIDRA analyses were then undertaken for the Warrigal Road / Pine Street priority-controlled intersection using the network layout shown in Figure 4.4 for the ultimate scenario. The results of these analyses are attached in Appendix C and are summarised in Table 4.5.

Table 4.5: WARRIGAL ROAD / PINE STREET INTERSECTION OPERATIONS (ULTIMATE)

SCENARIO	DOS	AVERAGE DELAY	95% QUEUE	CRITICAL MOVEMENT
2034 Weekday Morning				
Pre-Development	37.1%	1.8s	0.9veh	South Approach
Post-Development	43.7%	1.8s	1.0veh	South Approach
2034 Weekday Evening				
Pre-Development	39.5%	1.0s	0.4veh	North Approach
Post-Development	57.1%	1.1s	0.4veh	North Approach
2042 Weekday Morning				
Pre-Development	40.9%	2.2s	1.3veh	South Approach
Post-Development	47.6%	2.2s	1.5veh	South Approach
2042 Weekday Evening				
Pre-Development	43.7%	1.1s	1.7veh	North Approach
Post-Development	72.6%	1.4s	0.6veh	North Approach

The results indicate that the Warrigal Road / Pine Street intersection is expected to operate under LOS A conditions under all pre and post development scenarios (priority-controlled and signalised site access), in both the weekday morning and evening peaks. However, the 2042 post development scenario results in a significant increase in DOS (still within acceptable limits), which is expected to be a result of queuing of the downstream proposed signalised site access.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

The proposed residential development located at 97 & 145 Warrigal Road, Runcorn has been evaluated in terms of access arrangements, pedestrian / cyclist facilities, parking provision and design and impact on surrounding road network. The main points to note are:

- the proposal comprises a reconfiguration of a lot (two into 341 lots) and a 63-unit multiple dwelling development
- Council approved a 254 lots subdivision over the subject site with a priority-controlled access on Warrigal Road
- access is proposed via an extension of MacPherson Street which would serve Lots 1 to 41
- the primary vehicular access is proposed via a new intersection on Warrigal Road
- the primary site access would ultimately be delivered as a signalised intersection, with a priority-controlled T-intersection in the interim
- sight distance at the proposed access intersection complies Austroads requirements
- the proposed internal road network and hierarchy is expected to adequately cater for the development
- the development incorporates a series of deflected T-intersections and limited straight street sections to control vehicle speeds
- the proposed development is expected to generate in the order of 320vph during the weekday morning and evening peak hours
- the addition of development generated traffic is not expected to have an adverse impact on the operation of the surrounding road network

5.2 RECOMMENDATIONS

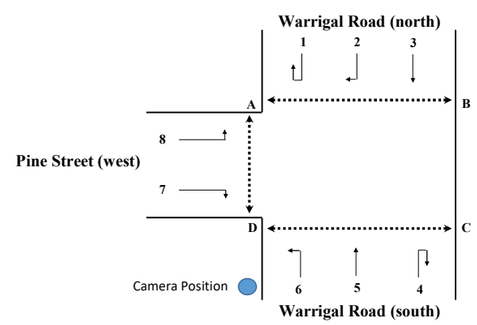
Based on the above, it is recommended that:

- the proposed site access intersection on Warrigal Road be signalised prior to the sealing of the 281st lot
- pedestrian paths be provided on at least one side of the proposed new roads and along Warrigal Road
- the proposed residential driveways be designed in accordance with Council's Standard Drawing BSD-1021

APPENDIX A
TRAFFIC COUNT DATA

AUSTRAFFIC VIDEO INTERSECTION COUNT

Site No.: 1 **Weather:** Fine
Location: Warrigal Road/Pine Street, Runcorn
Day/Date: Wednesday, 6 May 2026
AM Peak: *Hour ending - 9:00 AM*
PM Peak: *Hour ending - 5:00 PM*





TIME (1/4 hr end)	Movement 1				Movement 2				Movement 3				Movement 4				Movement 5				Movement 6				Movement 7				Movement 8				Pedestrian Movements											
																																	A - B		B - A		C - D		D - C		D - A		A - D	
	Light Vehicles	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*
7:15 AM	0	0	**0**	0	5	0	**5**	0	65	3	**68**	0	0	0	**0**	0	141	7	**148**	0	2	0	**2**	0	2	0	**2**	0	15	0	**15**	0	0	0	0	0	0	0	0	0	2	0
7:30 AM	0	0	**0**	0	7	0	**7**	0	94	4	**98**	0	0	0	**0**	0	177	9	**186**	0	1	0	**1**	0	0	0	**0**	0	10	1	**11**	0	0	0	0	0	1	0	0	0	0	0
7:45 AM	0	0	**0**	0	13	1	**14**	0	110	3	**113**	0	0	0	**0**	0	134	6	**140**	0	3	0	**3**	0	2	0	**2**	0	12	1	**13**	0	0	0	0	0	0	0	1	0	0	0
8:00 AM	0	0	**0**	0	15	0	**15**	0	88	4	**92**	1	0	0	**0**	0	156	13	**169**	0	3	0	**3**	0	3	0	**3**	0	15	0	**15**	0	0	0	0	0	0	0	1	0	0	0
8:15 AM	0	0	**0**	0	23	0	**23**	0	119	3	**122**	0	0	0	**0**	0	148	6	**154**	1	1	1	**2**	0	2	0	**2**	0	11	1	**12**	0	0	0	0	0	0	0	0	2	1	0
8:30 AM	0	0	**0**	0	31	1	**32**	0	99	2	**101**	0	0	0	**0**	0	161	8	**169**	0	6	0	**6**	0	3	1	**4**	0	26	0	**26**	0	0	0	0	0	0	0	1	0	0	0
8:45 AM	0	0	**0**	0	23	0	**23**	0	104	3	**107**	1	0	0	**0**	0	143	6	**149**	0	5	0	**5**	0	7	0	**7**	0	24	0	**24**	0	0	0	0	0	0	0	0	0	1	0
9:00 AM	0	0	**0**	0	13	1	**14**	0	116	4	**120**	1	0	0	**0**	0	149	7	**156**	1	4	0	**4**	0	5	0	**5**	0	11	1	**12**	0	0	0	0	0	0	0	1	0	2	0
2 hr Total	**0**	**0**	**0**	**0**	**130**	**3**	**133**	**0**	**795**	**26**	**821**	**3**	**0**	**0**	**0**	**0**	**1209**	**62**	**1271**	**2**	**25**	**1**	**26**	**0**	**24**	**1**	**25**	**0**	**124**	**4**	**128**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**5**	**2**	**6**	**0**
AM Peak	**0**	**0**	**0**	**0**	**90**	**2**	**92**	**0**	**438**	**12**	**450**	**2**	**0**	**0**	**0**	**0**	**601**	**27**	**628**	**2**	**16**	**1**	**17**	**0**	**17**	**1**	**18**	**0**	**72**	**2**	**74**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**4**	**0**

TIME (1/4 hr end)	Movement 1				Movement 2				Movement 3				Movement 4				Movement 5				Movement 6				Movement 7				Movement 8				Pedestrian Movements											
																																	A - B		B - A		C - D		D - C		D - A		A - D	
	Light Vehicles	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*
2:15 PM	0	0	**0**	0	17	0	**17**	0	127	4	**131**	0	0	0	**0**	0	123	5	**128**	0	5	0	**5**	0	0	0	**0**	0	11	1	**12**	0	0	0	0	0	0	0	1	0	4	0
2:30 PM	0	0	**0**	0	18	0	**18**	0	120	2	**122**	0	0	0	**0**	0	118	2	**120**	0	1	0	**1**	0	1	0	**1**	0	5	0	**5**	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	**0**	0	14	0	**14**	0	108	5	**113**	0	0	0	**0**	0	106	1	**107**	0	3	0	**3**	0	1	0	**1**	0	13	0	**13**	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	**0**	0	24	1	**25**	0	125	6	**131**	0	0	0	**0**	0	149	4	**153**	0	3	0	**3**	0	10	0	**10**	0	22	0	**22**	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	**0**	0	15	1	**16**	0	151	4	**155**	0	0	0	**0**	0	87	5	**92**	0	7	0	**7**	0	7	1	**8**	0	28	0	**28**	0	0	0	0	0	1	0	1	0	1	0
3:30 PM	0	0	**0**	0	17	2	**19**	0	174	6	**180**	0	0	0	**0**	0	101	4	**105**	0	3	0	**3**	0	5	1	**6**	0	13	0	**13**	0	0	0	0	0	2	0	0	0	0	0
3:45 PM	0	0	**0**	0	16	1	**17**	0	151	11	**162**	0	0	0	**0**	0	123	1	**124**	0	1	1	**2**	0	2	0	**2**	0	14	1	**15**	0	0	0	0	0	0	0	1	0	1	0
4:00 PM	0	0	**0**	0	19	1	**20**	0	174	10	**184**	0	0	0	**0**	0	132	5	**137**	0	3	0	**3**	0	2	0	**2**	0	14	0	**14**	0	0	0	0	0	0	0	1	0	1	0
4:15 PM	0	0	**0**	0	22	0	**22**	0	203	7	**210**	0	0	0	**0**	0	118	1	**119**	0	2	0	**2**	0	0	0	**0**	0	10	1	**11**	0	0	0	0	0	0	0	1	0	0	0
4:30 PM	0	0	**0**	0	19	0	**19**	0	139	6	**145**	0	0	0	**0**	0	133	2	**135**	0	8	0	**8**	0	0	0	**0**	0	19	0	**19**	0	0	0	0	0	0	0	3	0	1	0
4:45 PM	0	0	**0**	0	21	1	**22**	0	172	4	**176**	1	0	0	**0**	0	116	2	**118**	0	2	0	**2**	0	1	0	**1**	0	11	0	**11**	0	0	0	2	0	0	0	0	0	1	1
5:00 PM	0	0	**0**	0	18	0	**18**	0	180	2	**182**	0	0	0	**0**	0	136	3	**139**	0	7	0	**7**	0	3	0	**3**	0	18	0	**18**	0	0	0	0	0	0	0	1	0	1	3
3 hr Total	**0**	**0**	**0**	**0**	**220**	**7**	**227**	**0**	**1824**	**67**	**1891**	**1**	**0**	**0**	**0**	**0**	**1442**	**35**	**1477**	**0**	**45**	**1**	**46**	**0**	**32**	**2**	**34**	**0**	**178**	**3**	**181**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**10**	**4**
PM Peak	**0**	**0**	**0**	**0**	**80**	**1**	**81**	**0**	**694**	**19**	**713**	**1**	**0**	**0**	**0**	**0**	**503**	**8**	**511**	**0**	**19**	**0**	**19**	**0**	**4**	**0**	**4**	**0**	**58**	**1**	**59**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**3**	**4**

APPENDIX B
SIDRA ANALYSES

SIDRA ANALYSES - UP TO 281 LOTS

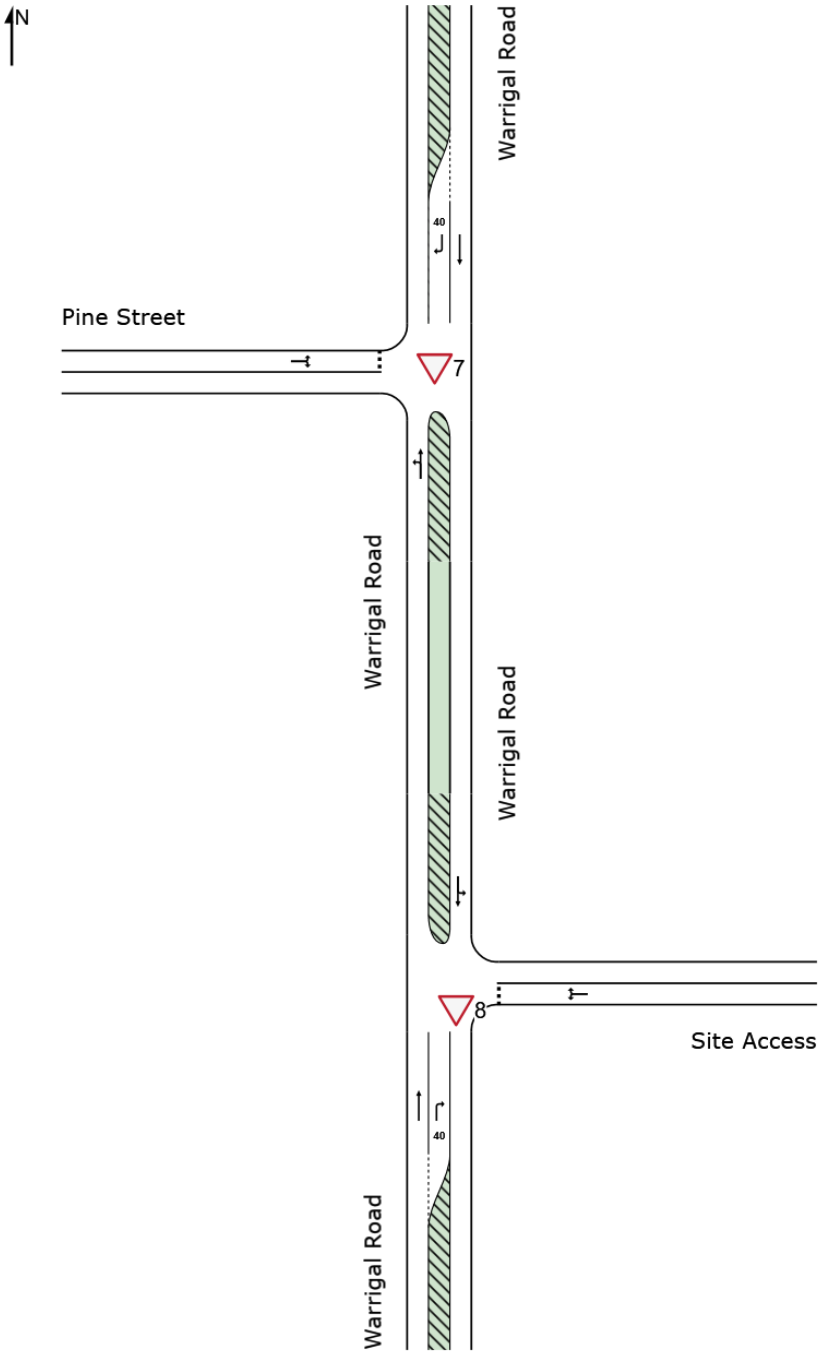
NETWORK LAYOUT

Network: [2] AM 2034 POST DEV (AM)

New Network

Network Scenario: 1 | Local Volumes

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



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
▽7	NA	Pine Street AM 2034 POST DEV
▽8	NA	Site Access AM 2034 POST DEV

MOVEMENT SUMMARY

Site: [7] Pine Street AM 2034 POST DEV (AM)
Network: [2] AM 2034 POST DEV (AM)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	18	3.5	18	3.5	0.444	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	55.1
4	T1	All MCs	837	3.5	837	3.5	0.444	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.5
Approach			855	3.5	855	3.5	0.444	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	530	3.5	530	3.5	0.275	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	102	3.5	102	3.5	0.176	11.3	LOS B	0.3	1.9	0.71	0.86	0.71	48.5
Approach			632	3.5	632	3.5	0.275	1.9	NA	0.3	1.9	0.11	0.14	0.11	56.2
West: Pine Street															
1	L2	All MCs	82	3.5	82	3.5	0.352	13.1	LOS B	0.5	3.6	0.83	0.99	1.05	43.6
2	R2	All MCs	19	3.5	19	3.5	0.352	49.6	LOS E	0.5	3.6	0.83	0.99	1.05	36.4
Approach			101	3.5	101	3.5	0.352	20.1	LOS C	0.5	3.6	0.83	0.99	1.05	42.7
All Vehicles			1588	3.5	1588	3.5	0.444	2.1	NA	0.5	3.6	0.10	0.13	0.11	56.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [8] Site Access AM 2034 POST DEV (AM)
Network: [2] AM 2034 POST DEV (AM)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
4	T1	All MCs	713	3.5	713	3.5	0.370	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	All MCs	27	3.5	27	3.5	0.028	7.9	LOS A	0.0	0.3	0.53	0.65	0.53	50.8
Approach			740	3.5	740	3.5	0.370	0.4	NA	0.0	0.3	0.02	0.02	0.02	59.0
East: Site Access															
4	L2	All MCs	104	3.5	104	3.5	0.959	52.1	LOS F	4.3	30.8	0.99	1.93	4.11	27.7
6	R2	All MCs	130	3.5	130	3.5	0.959	81.1	LOS F	4.3	30.8	0.99	1.93	4.11	18.7
Approach			234	3.5	234	3.5	0.959	68.2	LOS F	4.3	30.8	0.99	1.93	4.11	23.4
North: Warrigal Road															
7	L2	All MCs	34	3.5	34	3.5	0.287	4.5	LOS A	0.0	0.0	0.00	0.04	0.00	54.9
5	T1	All MCs	518	3.5	518	3.5	0.287	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.4
Approach			552	3.5	552	3.5	0.287	0.3	NA	0.0	0.0	0.00	0.04	0.00	59.1
All Vehicles			1525	3.5	1525	3.5	0.959	10.8	NA	4.3	30.8	0.16	0.32	0.64	45.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [17] Pine Street PM 2034 POST DEV (PM)
Network: [8] PM 2034 POST DEV (PM)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	21	0.6	21	0.6	0.321	4.5	LOS A	0.0	0.0	0.00	0.02	0.00	55.3
4	T1	All MCs	608	0.6	608	0.6	0.321	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.5
Approach			629	0.6	629	0.6	0.321	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	897	0.6	897	0.6	0.457	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
6	R2	All MCs	88	0.6	88	0.6	0.098	8.4	LOS A	0.4	2.8	0.57	0.73	0.57	50.5
Approach			986	0.6	986	0.6	0.457	0.9	NA	0.4	2.8	0.05	0.07	0.05	58.0
West: Pine Street															
1	L2	All MCs	64	0.6	64	0.6	0.123	8.3	LOS A	0.4	3.0	0.63	0.75	0.63	49.1
2	R2	All MCs	4	0.6	4	0.6	0.123	51.4	LOS F	0.4	3.0	0.63	0.75	0.63	44.5
Approach			68	0.6	68	0.6	0.123	10.8	LOS B	0.4	3.0	0.63	0.75	0.63	49.0
All Vehicles			1683	0.6	1683	0.6	0.457	1.0	NA	0.4	3.0	0.06	0.08	0.06	57.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [18] Site Access PM 2034 POST DEV (PM)
Network: [8] PM 2034 POST DEV (PM)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
4	T1	All MCs	577	0.6	577	0.6	0.294	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	All MCs	78	0.6	78	0.6	0.137	11.3	LOS B	0.5	3.6	0.71	0.86	0.71	48.6
Approach			655	0.6	655	0.6	0.294	1.4	NA	0.5	3.6	0.09	0.10	0.09	57.0
East: Site Access															
4	L2	All MCs	34	0.6	34	0.6	0.547	19.0	LOS C	2.1	14.7	0.93	1.08	1.33	35.7
6	R2	All MCs	53	0.6	53	0.6	0.547	51.3	LOS F	2.1	14.7	0.93	1.08	1.33	26.6
Approach			87	0.6	87	0.6	0.547	38.7	LOS E	2.1	14.7	0.93	1.08	1.33	31.1
North: Warrigal Road															
7	L2	All MCs	123	0.6	123	0.6	0.463	4.6	LOS A	0.0	0.0	0.00	0.08	0.00	54.5
5	T1	All MCs	780	0.6	780	0.6	0.463	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	58.6
Approach			903	0.6	903	0.6	0.463	0.6	NA	0.0	0.0	0.00	0.08	0.00	58.0
All Vehicles			1645	0.6	1645	0.6	0.547	3.0	NA	2.1	14.7	0.08	0.14	0.10	54.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [7 (2)] Pine Street AM 2032 POST DEV - 280 Lots (Sensitivity)

Network: [5 (2)] AM 2033 POST DEV - Sensitivity (Sensitivity 280 Lots)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	18	3.5	18	3.5	0.418	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	55.1
4	T1	All MCs	785	3.5	785	3.5	0.418	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.5
Approach			804	3.5	804	3.5	0.418	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	512	3.5	512	3.5	0.266	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	All MCs	100	3.5	100	3.5	0.156	10.6	LOS B	0.6	4.3	0.67	0.83	0.67	49.0
Approach			612	3.5	612	3.5	0.266	1.8	NA	0.6	4.3	0.11	0.14	0.11	56.4
West: Pine Street															
1	L2	All MCs	81	3.5	81	3.5	0.302	11.7	LOS B	1.1	7.8	0.80	0.96	0.95	45.0
2	R2	All MCs	19	3.5	19	3.5	0.302	41.6	LOS E	1.1	7.8	0.80	0.96	0.95	38.3
Approach			100	3.5	100	3.5	0.302	17.5	LOS C	1.1	7.8	0.80	0.96	0.95	44.2
All Vehicles			1516	3.5	1516	3.5	0.418	1.9	NA	1.1	7.8	0.10	0.13	0.11	56.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [8 (2)] Site Access AM 2032 POST DEV - 280 Lots (Sensitivity)

Network: [5 (2)] AM 2033 POST DEV - Sensitivity (Sensitivity 280 Lots)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
4	T1	All MCs	700	3.5	700	3.5	0.363	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	All MCs	19	3.5	19	3.5	0.020	7.7	LOS A	0.1	0.6	0.52	0.64	0.52	50.9
Approach			719	3.5	719	3.5	0.363	0.3	NA	0.1	0.6	0.01	0.02	0.01	59.2
East: Site Access															
4	L2	All MCs	77	3.5	77	3.5	0.663	16.4	LOS C	3.5	24.9	0.89	1.19	1.68	39.0
6	R2	All MCs	96	3.5	96	3.5	0.663	40.7	LOS E	3.5	24.9	0.89	1.19	1.68	30.5
Approach			173	3.5	173	3.5	0.663	29.9	LOS D	3.5	24.9	0.89	1.19	1.68	35.2
North: Warrigal Road															
7	L2	All MCs	22	3.5	22	3.5	0.276	4.5	LOS A	0.0	0.0	0.00	0.02	0.00	55.1
5	T1	All MCs	508	3.5	508	3.5	0.276	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.5
Approach			530	3.5	530	3.5	0.276	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.3
All Vehicles			1422	3.5	1422	3.5	0.663	3.9	NA	3.5	24.9	0.12	0.16	0.21	53.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [17 (2)] Pine Street PM 2032 POST DEV - 280 Lots (Sensitivity)

Network: [1] PM 2033 POST DEV - Sensitivity (Sensitivity 280 Lots)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	20	0.6	20	0.6	0.308	4.5	LOS A	0.0	0.0	0.00	0.02	0.00	55.3
4	T1	All MCs	584	0.6	584	0.6	0.308	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.6
Approach			604	0.6	604	0.6	0.308	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	850	0.6	850	0.6	0.433	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
6	R2	All MCs	86	0.6	86	0.6	0.093	8.2	LOS A	0.2	1.1	0.56	0.72	0.56	50.7
Approach			937	0.6	937	0.6	0.433	0.9	NA	0.2	1.1	0.05	0.07	0.05	58.0
West: Pine Street															
1	L2	All MCs	63	0.6	63	0.6	0.111	8.1	LOS A	0.2	1.1	0.61	0.73	0.61	49.5
2	R2	All MCs	4	0.6	4	0.6	0.111	43.6	LOS E	0.2	1.1	0.61	0.73	0.61	45.1
Approach			67	0.6	67	0.6	0.111	10.2	LOS B	0.2	1.1	0.61	0.73	0.61	49.4
All Vehicles			1608	0.6	1608	0.6	0.433	1.0	NA	0.2	1.1	0.06	0.08	0.06	57.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [18 (2)] Site Access PM 2032 POST DEV - 280 Lots (Sensitivity)

Network: [1] PM 2033 POST DEV - Sensitivity (Sensitivity 280 Lots)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
4	T1	All MCs	571	0.6	571	0.6	0.291	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	All MCs	58	0.6	58	0.6	0.095	10.6	LOS B	0.1	1.0	0.68	0.81	0.68	49.0
Approach			629	0.6	629	0.6	0.291	1.1	NA	0.1	1.0	0.06	0.08	0.06	57.7
East: Site Access															
4	L2	All MCs	25	0.6	25	0.6	0.365	13.5	LOS B	0.5	3.6	0.90	1.01	1.10	38.9
6	R2	All MCs	39	0.6	39	0.6	0.365	41.3	LOS E	0.5	3.6	0.90	1.01	1.10	30.2
Approach			64	0.6	64	0.6	0.365	30.5	LOS D	0.5	3.6	0.90	1.01	1.10	34.5
North: Warrigal Road															
7	L2	All MCs	90	0.6	90	0.6	0.442	4.6	LOS A	0.0	0.0	0.00	0.06	0.00	54.8
5	T1	All MCs	773	0.6	773	0.6	0.442	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	58.9
Approach			863	0.6	863	0.6	0.442	0.5	NA	0.0	0.0	0.00	0.06	0.00	58.4
All Vehicles			1557	0.6	1557	0.6	0.442	2.0	NA	0.5	3.6	0.06	0.11	0.07	56.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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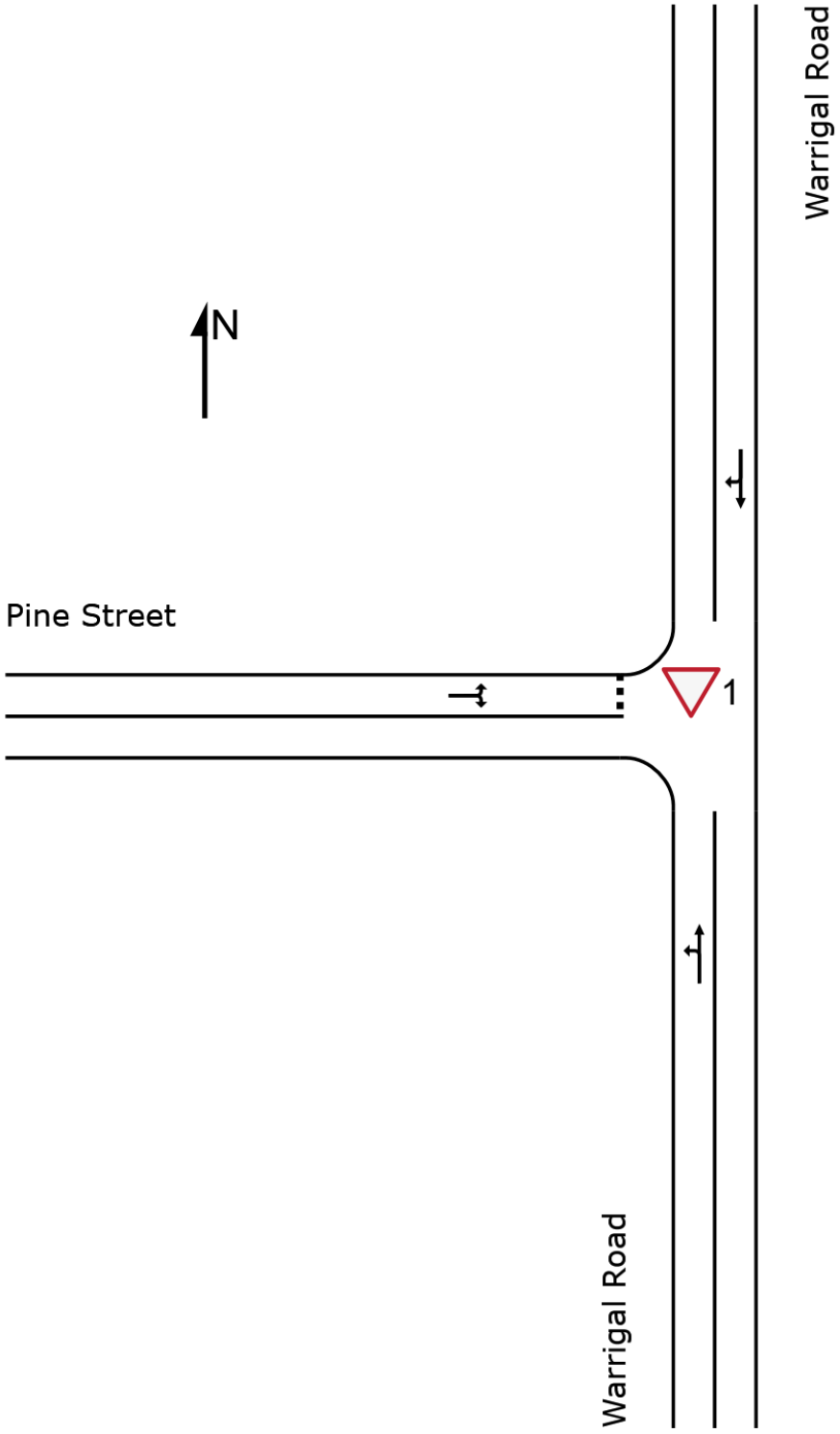
SITE LAYOUT

Site: [1] Pine Street AM Existing (AM)

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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



MOVEMENT SUMMARY

Site: [1] Pine Street AM Existing (AM)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	17	3.5	17	3.5	0.342	4.5	LOS A	0.0	0.0	0.00	0.02	0.00	55.1
4	T1	All MCs	641	3.5	641	3.5	0.342	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.6
Approach			659	3.5	659	3.5	0.342	0.1	NA	0.0	0.0	0.00	0.02	0.00	59.5
North: Warrigal Road															
5	T1	All MCs	460	3.5	460	3.5	0.355	1.6	LOS A	1.5	10.7	0.29	0.36	0.33	55.3
6	R2	All MCs	94	3.5	94	3.5	0.355	9.8	LOS A	1.5	10.7	0.29	0.36	0.33	54.5
Approach			554	3.5	554	3.5	0.355	2.9	NA	1.5	10.7	0.29	0.36	0.33	55.1
West: Pine Street															
1	L2	All MCs	76	3.5	76	3.5	0.162	8.9	LOS A	0.6	4.0	0.62	0.80	0.62	49.2
2	R2	All MCs	18	3.5	18	3.5	0.162	17.4	LOS C	0.6	4.0	0.62	0.80	0.62	43.3
Approach			94	3.5	94	3.5	0.162	10.6	LOS B	0.6	4.0	0.62	0.80	0.62	48.4
All Vehicles			1306	3.5	1306	3.5	0.355	2.1	NA	1.5	10.7	0.17	0.22	0.18	56.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [3] Pine Street AM 2033 PRE DEV (AM)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	18	3.5	18	3.5	0.371	4.5	LOS A	0.0	0.0	0.00	0.02	0.00	55.1
4	T1	All MCs	695	3.5	695	3.5	0.371	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.6
Approach			713	3.5	713	3.5	0.371	0.1	NA	0.0	0.0	0.00	0.02	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	497	3.5	497	3.5	0.258	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	All MCs	102	3.5	102	3.5	0.136	9.5	LOS A	0.5	3.8	0.62	0.78	0.62	49.7
Approach			600	3.5	600	3.5	0.258	1.7	NA	0.5	3.8	0.11	0.13	0.11	56.8
West: Pine Street															
1	L2	All MCs	82	3.5	82	3.5	0.244	10.0	LOS A	0.9	6.4	0.73	0.89	0.81	46.9
2	R2	All MCs	19	3.5	19	3.5	0.244	32.6	LOS D	0.9	6.4	0.73	0.89	0.81	40.3
Approach			101	3.5	101	3.5	0.244	14.3	LOS B	0.9	6.4	0.73	0.89	0.81	46.0
All Vehicles			1414	3.5	1414	3.5	0.371	1.8	NA	0.9	6.4	0.10	0.13	0.10	56.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [11] Pine Street PM Existing (PM)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	19	0.6	19	0.6	0.272	4.5	LOS A	0.0	0.0	0.00	0.02	0.00	55.3
4	T1	All MCs	514	0.6	514	0.6	0.272	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.6
Approach			533	0.6	533	0.6	0.272	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	717	0.6	717	0.6	0.446	0.8	LOS A	1.4	9.9	0.16	0.21	0.22	57.4
6	R2	All MCs	81	0.6	81	0.6	0.446	8.7	LOS A	1.4	9.9	0.16	0.21	0.22	55.8
Approach			798	0.6	798	0.6	0.446	1.6	NA	1.4	9.9	0.16	0.21	0.22	57.1
West: Pine Street															
1	L2	All MCs	59	0.6	59	0.6	0.078	7.6	LOS A	0.3	2.0	0.52	0.69	0.52	50.8
2	R2	All MCs	4	0.6	4	0.6	0.078	19.2	LOS C	0.3	2.0	0.52	0.69	0.52	45.4
Approach			63	0.6	63	0.6	0.078	8.4	LOS A	0.3	2.0	0.52	0.69	0.52	50.6
All Vehicles			1394	0.6	1394	0.6	0.446	1.4	NA	1.4	9.9	0.12	0.16	0.15	57.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [13] Pine Street PM 2033 PRE DEV (PM)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	21	0.6	21	0.6	0.294	4.5	LOS A	0.0	0.0	0.00	0.02	0.00	55.3
4	T1	All MCs	556	0.6	556	0.6	0.294	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.5
Approach			577	0.6	577	0.6	0.294	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	776	0.6	776	0.6	0.395	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
6	R2	All MCs	88	0.6	88	0.6	0.091	8.0	LOS A	0.4	2.6	0.55	0.71	0.55	50.8
Approach			864	0.6	864	0.6	0.395	0.9	NA	0.4	2.6	0.06	0.07	0.06	58.0
West: Pine Street															
1	L2	All MCs	64	0.6	64	0.6	0.101	7.9	LOS A	0.4	2.5	0.58	0.72	0.58	50.0
2	R2	All MCs	4	0.6	4	0.6	0.101	35.1	LOS E	0.4	2.5	0.58	0.72	0.58	44.5
Approach			68	0.6	68	0.6	0.101	9.5	LOS A	0.4	2.5	0.58	0.72	0.58	49.8
All Vehicles			1510	0.6	1510	0.6	0.395	1.0	NA	0.4	2.6	0.06	0.08	0.06	57.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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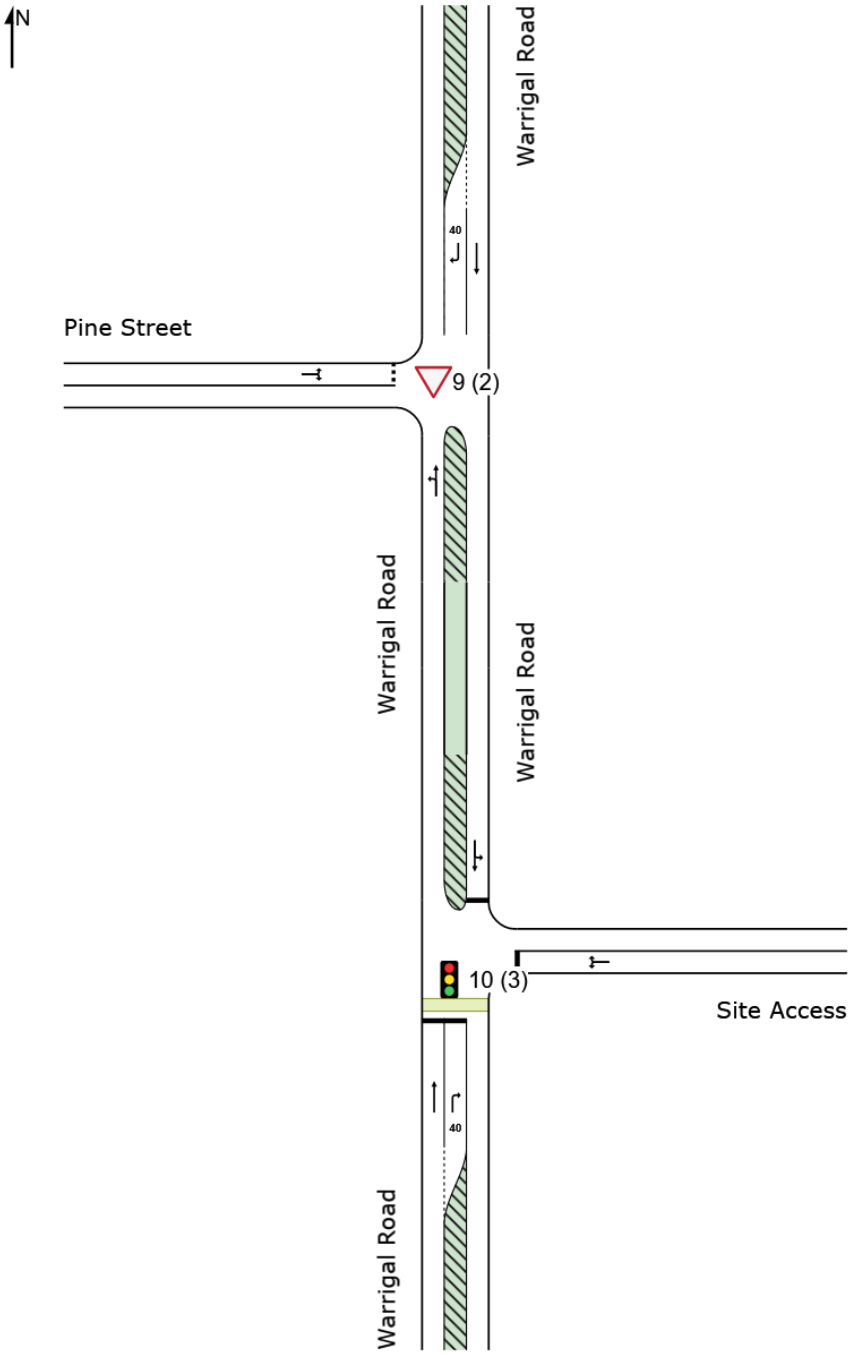
NETWORK LAYOUT

Network: [6 (2)] AM 2034 POST DEV (SIGNALISED)

New Network

Network Scenario: 1 | Local Volumes

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



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
▽9 (2)	NA	Pine Street AM 2034 POST DEV
10 (3)	NA	Site Access AM 2034 POST DEV

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MOVEMENT SUMMARY

Site: [9 (2)] Pine Street AM 2034 POST DEV (SIGNALISED)
Network: [6 (2)] AM 2034 POST DEV (SIGNALISED)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	18	3.5	18	3.5	0.437	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	55.1
4	T1	All MCs	823	3.5	823	3.5	0.437	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.5
Approach			842	3.5	842	3.5	0.437	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	530	3.5	530	3.5	0.322	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	102	3.5	102	3.5	0.148	10.6	LOS B	0.6	4.7	0.67	0.79	0.67	49.0
Approach			632	3.5	632	3.5	0.322	1.8	NA	0.6	4.7	0.11	0.13	0.11	56.3
West: Pine Street															
1	L2	All MCs	82	3.5	82	3.5	0.275	11.4	LOS B	1.0	7.5	0.76	0.91	0.88	45.8
2	R2	All MCs	19	3.5	19	3.5	0.275	35.8	LOS E	1.0	7.5	0.76	0.91	0.88	39.5
Approach			101	3.5	101	3.5	0.275	16.1	LOS C	1.0	7.5	0.76	0.91	0.88	45.0
All Vehicles			1575	3.5	1575	3.5	0.437	1.8	NA	1.0	7.5	0.09	0.12	0.10	56.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [10 (3)] Site Access AM 2034 POST DEV (SIGNALISED)
Network: [6 (2)] AM 2034 POST DEV (SIGNALISED)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
4	T1	All MCs	713	3.5	713	3.5	* 0.600	12.5	LOS B	16.3	117.3	0.63	0.57	0.63	46.2
3	R2	All MCs	27	3.5	27	3.5	0.063	20.5	LOS C	0.6	4.0	0.55	0.69	0.55	45.0
Approach			740	3.5	740	3.5	0.600	12.8	LOS B	16.3	117.3	0.63	0.58	0.63	42.7
East: Site Access															
4	L2	All MCs	104	3.5	104	3.5	0.600	37.1	LOS D	8.5	61.3	0.95	0.82	0.95	36.2
6	R2	All MCs	130	3.5	130	3.5	* 0.600	37.1	LOS D	8.5	61.3	0.95	0.82	0.95	27.3
Approach			234	3.5	234	3.5	0.600	37.1	LOS D	8.5	61.3	0.95	0.82	0.95	32.1
North: Warrigal Road															
7	L2	All MCs	34	3.5	34	3.5	0.451	12.4	LOS B	10.9	78.4	0.55	0.50	0.55	45.5
5	T1	All MCs	518	3.5	518	3.5	0.451	7.9	LOS A	10.9	78.4	0.55	0.50	0.55	48.5
Approach			552	3.5	552	3.5	0.451	8.2	LOS A	10.9	78.4	0.55	0.50	0.55	48.3
All Vehicles			1525	3.5	1525	3.5	0.600	14.8	LOS B	16.3	117.3	0.65	0.59	0.65	41.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Warrigal Road											
P2	Full	11	34.2	LOS D	0.0	0.0	0.93	0.93	49.6	20.0	0.40
All Pedestrians		11	34.2	LOS D	0.0	0.0	0.93	0.93	49.6	20.0	0.40

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.

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MOVEMENT SUMMARY

Site: [19 (2)] Pine Street PM 2034 POST DEV (SIGNALISED)
Network: [10 (2)] PM 2034 POST DEV (SIGNALISED)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	21	0.6	21	0.6	0.321	4.5	LOS A	0.0	0.0	0.00	0.02	0.00	55.3
4	T1	All MCs	608	0.6	608	0.6	0.321	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.5
Approach			629	0.6	629	0.6	0.321	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	897	0.6	897	0.6	0.457	0.2	LOS A	-N7	-N7	0.00	0.00	0.00	59.7
6	R2	All MCs	88	0.6	88	0.6	0.092	8.3	LOS A	0.4	2.9	0.57	0.70	0.57	50.6
Approach			986	0.6	986	0.6	0.457	0.9	NA	-N7	-N7	0.05	0.06	0.05	58.0
West: Pine Street															
1	L2	All MCs	64	0.6	64	0.6	0.115	8.2	LOS A	0.4	2.9	0.62	0.71	0.62	49.5
2	R2	All MCs	4	0.6	4	0.6	0.115	44.2	LOS E	0.4	2.9	0.62	0.71	0.62	45.0
Approach			68	0.6	68	0.6	0.115	10.3	LOS B	0.4	2.9	0.62	0.71	0.62	49.3
All Vehicles			1683	0.6	1683	0.6	0.457	1.0	NA	-N7	-N7	0.06	0.07	0.06	57.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

N7 The capacity reduction has been determined from the queue blockage probability based on the Percentile Back of Queue values of a Site further downstream.

MOVEMENT SUMMARY

Site: [20 (3)] Site Access PM 2034 POST DEV (SIGNALISED)
Network: [10 (2)] PM 2034 POST DEV (SIGNALISED)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
4	T1	All MCs	577	0.6	577	0.6	0.434	6.2	LOS A	10.1	70.8	0.49	0.44	0.49	50.0
3	R2	All MCs	78	0.6	78	0.6	0.321	23.9	LOS C	2.2	15.5	0.72	0.76	0.72	41.6
Approach			655	0.6	655	0.6	0.434	8.3	LOS A	10.1	70.8	0.51	0.47	0.51	47.9
East: Site Access															
4	L2	All MCs	34	0.6	34	0.6	0.279	37.9	LOS D	3.1	21.7	0.91	0.76	0.91	36.0
6	R2	All MCs	53	0.6	53	0.6	* 0.279	37.8	LOS D	3.1	21.7	0.91	0.76	0.91	27.0
Approach			87	0.6	87	0.6	0.279	37.8	LOS D	3.1	21.7	0.91	0.76	0.91	31.4
North: Warrigal Road															
7	L2	All MCs	123	0.6	123	0.6	0.679	12.6	LOS B	20.7[N8]	145.5[N8]	0.64	0.62	0.64	45.2
5	T1	All MCs	780	0.6	780	0.6	* 0.679	8.0	LOS A	20.7[N8]	145.5[N8]	0.64	0.62	0.64	48.0
Approach			903	0.6	903	0.6	0.679	8.6	LOS A	20.7[N8]	145.5[N8]	0.64	0.62	0.64	47.6
All Vehicles			1645	0.6	1645	0.6	0.679	10.1	LOS B	20.7[N8]	145.5[N8]	0.61	0.57	0.61	46.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)
N8 The Percentile Back of Queue extends to upstream Site lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Warrigal Road											
P2	Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	49.7	20.0	0.40
All Pedestrians		53	34.3	LOS D	0.1	0.1	0.93	0.93	49.7	20.0	0.40

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.

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MOVEMENT SUMMARY

Site: [9 (4)] Pine Street AM 2044 POST DEV (SIGNALISED)
Network: [6 (4)] AM 2044 POST DEV (SIGNALISED)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	20	3.5	20	3.5	0.476	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	55.0
4	T1	All MCs	896	3.5	896	3.5	0.476	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.5
Approach			916	3.5	916	3.5	0.476	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	582	3.5	582	3.5	0.375	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
6	R2	All MCs	112	3.5	112	3.5	0.184	11.6	LOS B	0.8	5.7	0.69	0.83	0.69	48.3
Approach			695	3.5	695	3.5	0.375	2.0	NA	0.8	5.7	0.11	0.13	0.11	56.0
West: Pine Street															
1	L2	All MCs	91	3.5	91	3.5	0.394	14.0	LOS B	1.5	11.0	0.83	1.01	1.09	43.2
2	R2	All MCs	22	3.5	22	3.5	0.394	48.3	LOS E	1.5	11.0	0.83	1.01	1.09	35.9
Approach			113	3.5	113	3.5	0.394	20.8	LOS C	1.5	11.0	0.83	1.01	1.09	42.3
All Vehicles			1724	3.5	1724	3.5	0.476	2.2	NA	1.5	11.0	0.10	0.13	0.12	55.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [10 (5)] Site Access AM 2044 POST DEV (SIGNALISED)
Network: [6 (4)] AM 2044 POST DEV (SIGNALISED)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
4	T1	All MCs	789	3.5	789	3.5	* 0.648	12.6	LOS B	18.3	132.2	0.65	0.59	0.65	46.6
3	R2	All MCs	27	3.5	27	3.5	0.067	20.8	LOS C	0.5	4.0	0.54	0.69	0.54	45.1
Approach			815	3.5	815	3.5	0.648	12.9	LOS B	18.3	132.2	0.64	0.59	0.64	42.5
East: Site Access															
4	L2	All MCs	104	3.5	104	3.5	0.648	39.1	LOS D	8.7	62.7	0.97	0.83	1.01	35.5
6	R2	All MCs	127	3.5	127	3.5	* 0.648	39.1	LOS D	8.7	62.7	0.97	0.83	1.01	26.5
Approach			231	3.5	231	3.5	0.648	39.1	LOS D	8.7	62.7	0.97	0.83	1.01	31.4
North: Warrigal Road															
7	L2	All MCs	34	3.5	34	3.5	0.481	11.9	LOS B	11.8	85.1	0.54	0.50	0.54	46.0
5	T1	All MCs	572	3.5	572	3.5	0.481	7.4	LOS A	11.8	85.1	0.54	0.50	0.54	49.1
Approach			606	3.5	606	3.5	0.481	7.7	LOS A	11.8	85.1	0.54	0.50	0.54	48.9
All Vehicles			1652	3.5	1652	3.5	0.648	14.6	LOS B	18.3	132.2	0.65	0.59	0.66	41.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Warrigal Road											
P2	Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	49.7	20.0	0.40
All Pedestrians		53	34.3	LOS D	0.1	0.1	0.93	0.93	49.7	20.0	0.40

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.

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MOVEMENT SUMMARY

Site: [19 (4)] Pine Street PM 2044 POST DEV (SIGNALISED)
Network: [10 (4)] PM 2044 POST DEV (SIGNALISED)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	23	0.6	23	0.6	0.352	4.5	LOS A	0.0	0.0	0.00	0.02	0.00	55.3
4	T1	All MCs	666	0.6	666	0.6	0.352	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.5
Approach			689	0.6	689	0.6	0.352	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	979	0.6	979	0.6	0.499	0.2	LOS A	-[N7]	-[N7]	0.00	0.00	0.00	59.6
6	R2	All MCs	97	0.6	97	0.6	0.110	8.8	LOS A	0.5	3.5	0.60	0.73	0.60	50.3
Approach			1076	0.6	1076	0.6	0.499	1.0	NA	-[N7]	-[N7]	0.05	0.07	0.05	57.8
West: Pine Street															
1	L2	All MCs	71	0.6	71	0.6	0.162	8.7	LOS A	0.6	3.9	0.68	0.75	0.68	48.3
2	R2	All MCs	5	0.6	5	0.6	0.162	60.4	LOS F	0.6	3.9	0.68	0.75	0.68	43.1
Approach			76	0.6	76	0.6	0.162	12.1	LOS B	0.6	3.9	0.68	0.75	0.68	48.1
All Vehicles			1842	0.6	1842	0.6	0.499	1.1	NA	-[N7]	-[N7]	0.06	0.08	0.06	57.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

N7 The capacity reduction has been determined from the queue blockage probability based on the Percentile Back of Queue values of a Site further downstream.

MOVEMENT SUMMARY

Site: [20 (5)] Site Access PM 2044 POST DEV (SIGNALISED)
Network: [10 (4)] PM 2044 POST DEV (SIGNALISED)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80.0 seconds (Site User-Given Cycle Time)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
4	T1	All MCs	637	0.6	637	0.6	0.509	7.5	LOS A	12.0	84.5	0.53	0.47	0.53	49.3
3	R2	All MCs	78	0.6	78	0.6	0.386	28.5	LOS C	2.4	17.2	0.79	0.78	0.79	39.9
Approach			716	0.6	716	0.6	0.509	9.8	LOS A	12.0	84.5	0.55	0.51	0.55	46.2
East: Site Access															
4	L2	All MCs	34	0.6	34	0.6	0.279	37.9	LOS D	3.1	21.7	0.91	0.76	0.91	36.0
6	R2	All MCs	53	0.6	53	0.6	* 0.279	37.8	LOS D	3.1	21.7	0.91	0.76	0.91	27.0
Approach			87	0.6	87	0.6	0.279	37.8	LOS D	3.1	21.7	0.91	0.76	0.91	31.4
North: Warrigal Road															
7	L2	All MCs	123	0.6	123	0.6	0.740	13.2	LOS B	24.5[N8]	172.4[N8]	0.70	0.66	0.70	44.6
5	T1	All MCs	862	0.6	862	0.6	* 0.740	8.7	LOS A	24.5[N8]	172.4[N8]	0.70	0.66	0.70	47.3
Approach			985	0.6	985	0.6	0.740	9.3	LOS A	24.5[N8]	172.4[N8]	0.70	0.66	0.70	46.9
All Vehicles			1788	0.6	1788	0.6	0.740	10.9	LOS B	24.5[N8]	172.4[N8]	0.65	0.61	0.65	45.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)
N8 The Percentile Back of Queue extends to upstream Site lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Warrigal Road											
P2	Full	53	34.3	LOS D	0.1	0.1	0.93	0.93	49.7	20.0	0.40
All Pedestrians		53	34.3	LOS D	0.1	0.1	0.93	0.93	49.7	20.0	0.40

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.

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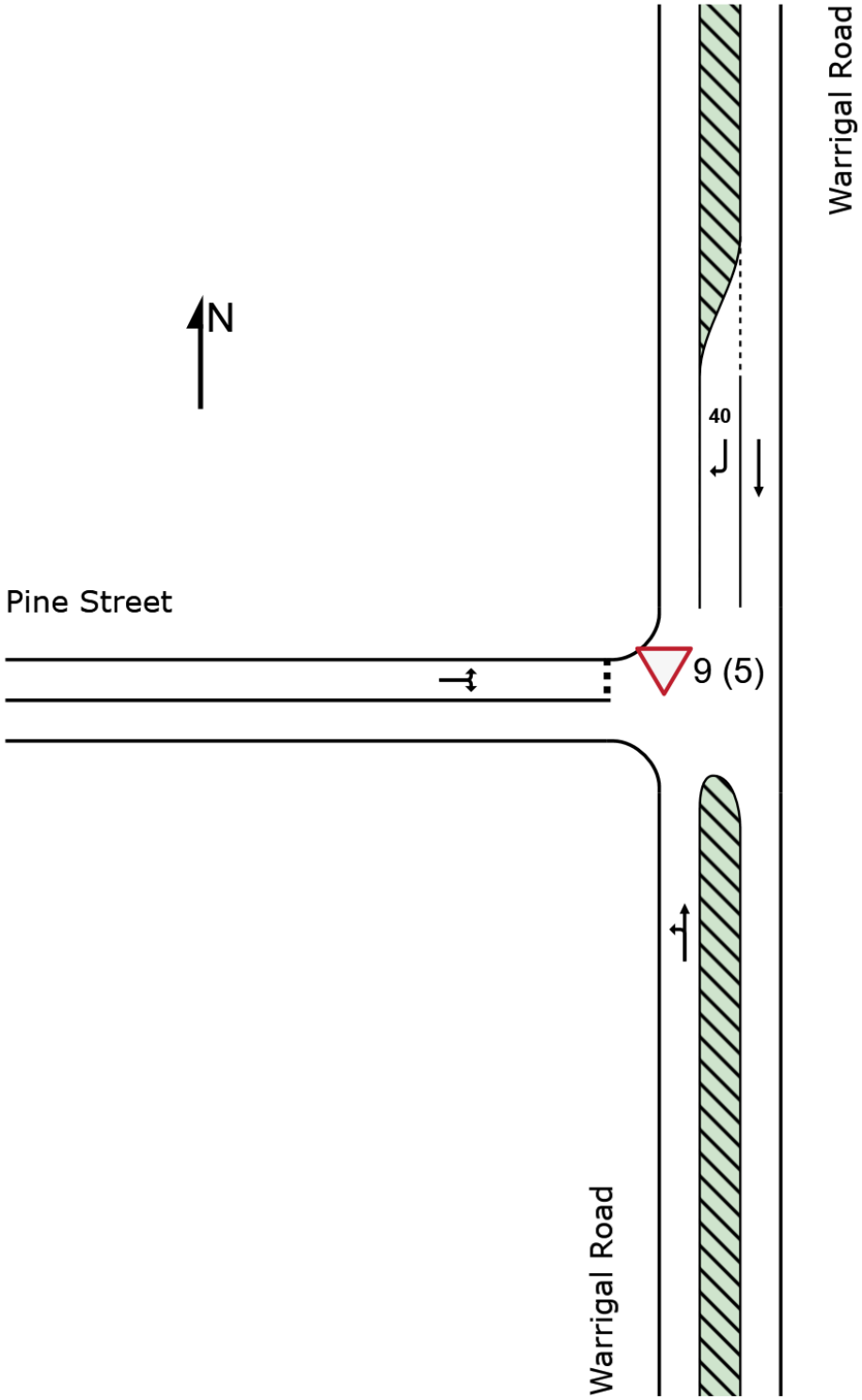
SITE LAYOUT

Site: [9 (5)] Pine Street AM 2034 PRE EDEV (SIGNALISED)

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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



MOVEMENT SUMMARY

Site: [9 (5)] Pine Street AM 2034 PRE EDEV (SIGNALISED)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	18	3.5	18	3.5	0.371	4.5	LOS A	0.0	0.0	0.00	0.02	0.00	55.1
4	T1	All MCs	695	3.5	695	3.5	0.371	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.6
Approach			713	3.5	713	3.5	0.371	0.1	NA	0.0	0.0	0.00	0.02	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	497	3.5	497	3.5	0.258	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	All MCs	102	3.5	102	3.5	0.136	9.5	LOS A	0.5	3.8	0.62	0.78	0.62	49.7
Approach			600	3.5	600	3.5	0.258	1.7	NA	0.5	3.8	0.11	0.13	0.11	56.8
West: Pine Street															
1	L2	All MCs	82	3.5	82	3.5	0.244	10.0	LOS A	0.9	6.4	0.73	0.89	0.81	46.9
2	R2	All MCs	19	3.5	19	3.5	0.244	32.6	LOS D	0.9	6.4	0.73	0.89	0.81	40.3
Approach			101	3.5	101	3.5	0.244	14.3	LOS B	0.9	6.4	0.73	0.89	0.81	46.0
All Vehicles			1414	3.5	1414	3.5	0.371	1.8	NA	0.9	6.4	0.10	0.13	0.10	56.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [19 (5)] Pine Street PM 2034 PRE DEV (SIGNALISED)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	21	0.6	21	0.6	0.294	4.5	LOS A	0.0	0.0	0.00	0.02	0.00	55.3
4	T1	All MCs	556	0.6	556	0.6	0.294	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.5
Approach			577	0.6	577	0.6	0.294	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	776	0.6	776	0.6	0.395	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
6	R2	All MCs	88	0.6	88	0.6	0.091	8.0	LOS A	0.4	2.6	0.55	0.71	0.55	50.8
Approach			864	0.6	864	0.6	0.395	0.9	NA	0.4	2.6	0.06	0.07	0.06	58.0
West: Pine Street															
1	L2	All MCs	64	0.6	64	0.6	0.101	7.9	LOS A	0.4	2.5	0.58	0.72	0.58	50.0
2	R2	All MCs	4	0.6	4	0.6	0.101	35.1	LOS E	0.4	2.5	0.58	0.72	0.58	44.5
Approach			68	0.6	68	0.6	0.101	9.5	LOS A	0.4	2.5	0.58	0.72	0.58	49.8
All Vehicles			1510	0.6	1510	0.6	0.395	1.0	NA	0.4	2.6	0.06	0.08	0.06	57.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [9 (6)] Pine Street AM 2044 PRE DEV (SIGNALISED)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	20	3.5	20	3.5	0.409	4.6	LOS A	0.0	0.0	0.00	0.02	0.00	55.1
4	T1	All MCs	767	3.5	767	3.5	0.409	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.5
Approach			788	3.5	788	3.5	0.409	0.1	NA	0.0	0.0	0.00	0.02	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	550	3.5	550	3.5	0.285	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	112	3.5	112	3.5	0.170	10.4	LOS B	0.7	4.7	0.66	0.83	0.66	49.1
Approach			662	3.5	662	3.5	0.285	1.8	NA	0.7	4.7	0.11	0.14	0.11	56.6
West: Pine Street															
1	L2	All MCs	91	3.5	91	3.5	0.351	12.0	LOS B	1.3	9.4	0.81	0.98	1.02	44.5
2	R2	All MCs	22	3.5	22	3.5	0.351	44.6	LOS E	1.3	9.4	0.81	0.98	1.02	37.3
Approach			113	3.5	113	3.5	0.351	18.5	LOS C	1.3	9.4	0.81	0.98	1.02	43.4
All Vehicles			1563	3.5	1563	3.5	0.409	2.2	NA	1.3	9.4	0.11	0.14	0.12	56.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: [19 (6)] Pine Street PM 2044 PRE DEV (SIGNALISED)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

Three-way intersection with 2-lane major road (Give Way control)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Warrigal Road															
3	L2	All MCs	23	0.6	23	0.6	0.325	4.5	LOS A	0.0	0.0	0.00	0.02	0.00	55.3
4	T1	All MCs	614	0.6	614	0.6	0.325	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.5
Approach			637	0.6	637	0.6	0.325	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.4
North: Warrigal Road															
5	T1	All MCs	857	0.6	857	0.6	0.437	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
6	R2	All MCs	97	0.6	97	0.6	0.109	8.5	LOS A	0.4	3.1	0.58	0.74	0.58	50.5
Approach			955	0.6	955	0.6	0.437	1.0	NA	0.4	3.1	0.06	0.08	0.06	57.9
West: Pine Street															
1	L2	All MCs	71	0.6	71	0.6	0.139	8.4	LOS A	0.5	3.4	0.64	0.76	0.64	49.0
2	R2	All MCs	5	0.6	5	0.6	0.139	48.1	LOS E	0.5	3.4	0.64	0.76	0.64	43.1
Approach			76	0.6	76	0.6	0.139	11.0	LOS B	0.5	3.4	0.64	0.76	0.64	48.8
All Vehicles			1668	0.6	1668	0.6	0.437	1.1	NA	0.5	3.4	0.06	0.09	0.06	57.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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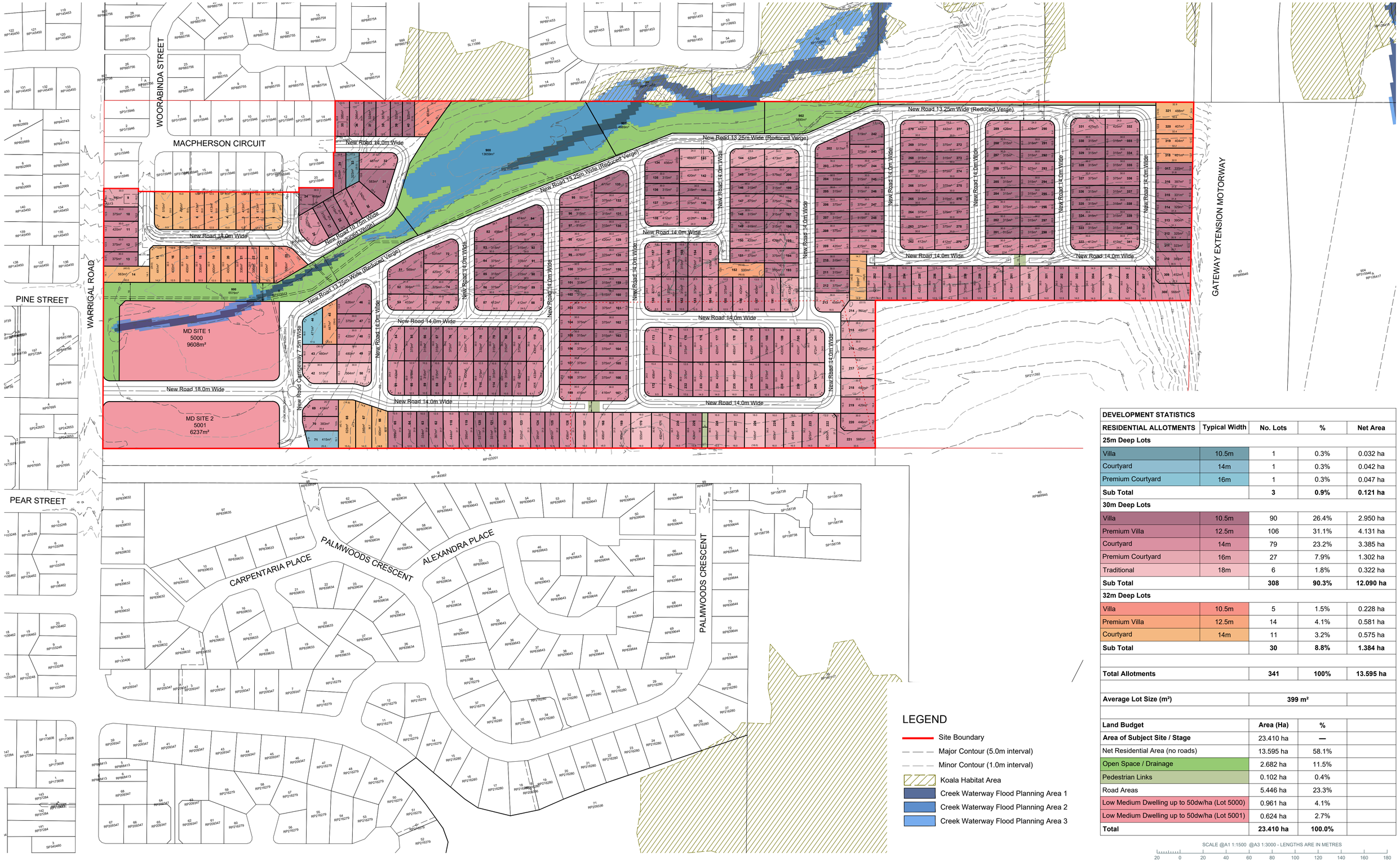
APPENDIX C
PLANS OF DEVELOPMENT

OVERALL PLAN



LEGEND

- Site Boundary
- Major Contour (5.0m interval)
- Minor Contour (1.0m interval)
- Koala Habitat Area
- Creek Waterway Flood Planning Area 1
- Creek Waterway Flood Planning Area 2
- Creek Waterway Flood Planning Area 3

DEVELOPMENT STATISTICS				
RESIDENTIAL ALLOTMENTS	**Typical Width**	**No. Lots**	**%**	**Net Area**
25m Deep Lots				
Villa	10.5m	1	0.3%	0.032 ha
Courtyard	14m	1	0.3%	0.042 ha
Premium Courtyard	16m	1	0.3%	0.047 ha
Sub Total		**3**	**0.9%**	**0.121 ha**
30m Deep Lots				
Villa	10.5m	90	26.4%	2.950 ha
Premium Villa	12.5m	106	31.1%	4.131 ha
Courtyard	14m	79	23.2%	3.385 ha
Premium Courtyard	16m	27	7.9%	1.302 ha
Traditional	18m	6	1.8%	0.322 ha
Sub Total		**308**	**90.3%**	**12.090 ha**
32m Deep Lots				
Villa	10.5m	5	1.5%	0.228 ha
Premium Villa	12.5m	14	4.1%	0.581 ha
Courtyard	14m	11	3.2%	0.575 ha
Sub Total		**30**	**8.8%**	**1.384 ha**
Total Allotments		**341**	**100%**	**13.595 ha**
Average Lot Size (m²)		**399 m²**		
Land Budget		**Area (Ha)**	**%**	
Area of Subject Site / Stage		23.410 ha	—	
Net Residential Area (no roads)		13.595 ha	58.1%	
Open Space / Drainage		2.682 ha	11.5%	
Pedestrian Links		0.102 ha	0.4%	
Road Areas		5.446 ha	23.3%	
Low Medium Dwelling up to 50dw/ha (Lot 5000)		0.961 ha	4.1%	
Low Medium Dwelling up to 50dw/ha (Lot 5001)		0.624 ha	2.7%	
Total		**23.410 ha**	**100.0%**	

SCALE @A1 1:1500 @A3 1:3000 - LENGTHS ARE IN METRES

20 0 20 40 60 80 100 120 140 160 180

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SOURCE
PROJECTION: GDA2020 MGA56
SUBJECT BOUNDARIES: SURVEY FROM THEREFOR GROUP DATED 04/06/2026
CONTOURS: SURVEY BY THEREFOR GROUP DATED 04/06/2026
STATE OVERLAYS: QUEENSLAND GOVERNMENT
LOCAL OVERLAYS: BRISBANE CITY COUNCIL

CLIENT
LGR DEVELOPMENTS PTY LTD

SITE ADDRESS
WARRIGAL ROAD, RUNCORN

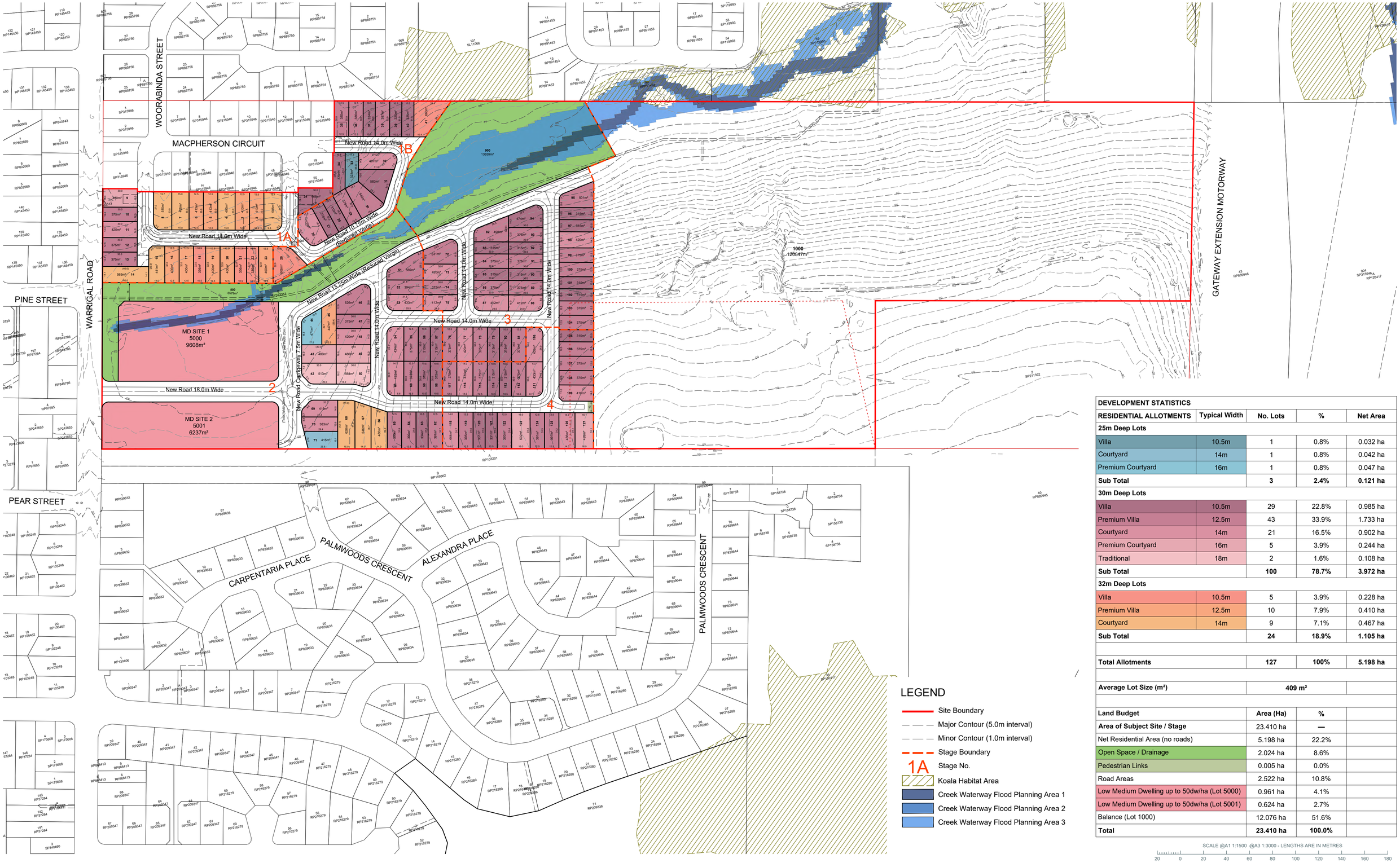
DRAWN
JC

DATE
13/10/2026

RP DESCRIPTION
LOT 910 ON SP315946, LOT 1 ON RP103201

DRAWING NO.
13163 P 02 Rev E - PRO 01

PROPOSAL PLAN - OVERALL



DEVELOPMENT STATISTICS				
RESIDENTIAL ALLOTMENTS	**Typical Width**	**No. Lots**	**%**	**Net Area**
25m Deep Lots				
Villa	10.5m	1	0.8%	0.032 ha
Courtyard	14m	1	0.8%	0.042 ha
Premium Courtyard	16m	1	0.8%	0.047 ha
Sub Total		**3**	**2.4%**	**0.121 ha**
30m Deep Lots				
Villa	10.5m	29	22.8%	0.985 ha
Premium Villa	12.5m	43	33.9%	1.733 ha
Courtyard	14m	21	16.5%	0.902 ha
Premium Courtyard	16m	5	3.9%	0.244 ha
Traditional	18m	2	1.6%	0.108 ha
Sub Total		**100**	**78.7%**	**3.972 ha**
32m Deep Lots				
Villa	10.5m	5	3.9%	0.228 ha
Premium Villa	12.5m	10	7.9%	0.410 ha
Courtyard	14m	9	7.1%	0.467 ha
Sub Total		**24**	**18.9%**	**1.105 ha**
Total Allotments		**127**	**100%**	**5.198 ha**
Average Lot Size (m²)		**409 m²**		
Land Budget		**Area (Ha)**	**%**	
Area of Subject Site / Stage		23.410 ha	—	
Net Residential Area (no roads)		5.198 ha	22.2%	
Open Space / Drainage		2.024 ha	8.6%	
Pedestrian Links		0.005 ha	0.0%	
Road Areas		2.522 ha	10.8%	
Low Medium Dwelling up to 50dw/ha (Lot 5000)		0.961 ha	4.1%	
Low Medium Dwelling up to 50dw/ha (Lot 5001)		0.624 ha	2.7%	
Balance (Lot 1000)		12.076 ha	51.6%	
Total		**23.410 ha**	**100.0%**	

SCALE @A1 1:1500 @A3 1:3000 - LENGTHS ARE IN METRES

20 0 20 40 60 80 100 120 140 160 180

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LOCAL OVERLAYS: BRISBANE CITY COUNCIL

CLIENT
LGR DEVELOPMENTS PTY LTD

SITE ADDRESS
WARRIGAL ROAD, RUNCORN

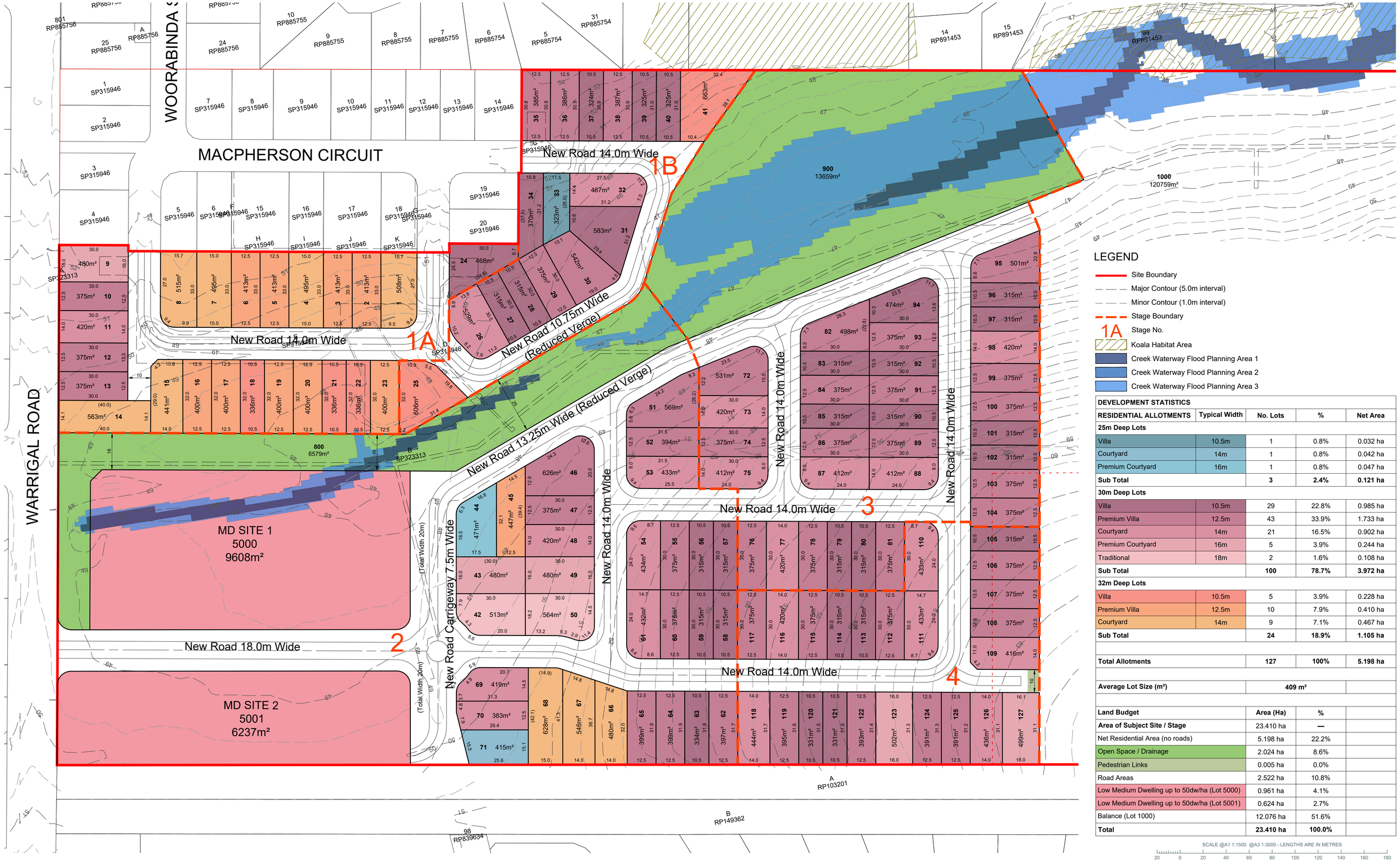
RP DESCRIPTION
LOT 910 ON SP315946, LOT 1 ON RP103201

DRAWN
JC

DATE
13/10/2026

DRAWING NO.
13163 P 06 Rev B - PRO 01

PROPOSAL PLAN



LEGEND

- Site Boundary
- Major Contour (5.0m interval)
- Minor Contour (1.0m interval)
- Stage Boundary
- 1A Stage No.
- Koala Habitat Area
- Creek Waterway Flood Planning Area 1
- Creek Waterway Flood Planning Area 2
- Creek Waterway Flood Planning Area 3

DEVELOPMENT STATISTICS				
RESIDENTIAL ALLOTMENTS	**Typical Width**	**No. Lots**	**%**	**Net Area**
25m Deep Lots				
Villa	10.5m	1	0.8%	0.032 ha
Courtyard	14m	1	0.8%	0.042 ha
Premium Courtyard	16m	1	0.8%	0.047 ha
Sub Total		**3**	**2.4%**	**0.121 ha**
30m Deep Lots				
Villa	10.5m	29	22.8%	0.985 ha
Premium Villa	12.5m	43	33.9%	1.733 ha
Courtyard	14m	21	16.5%	0.902 ha
Premium Courtyard	16m	5	3.9%	0.244 ha
Traditional	18m	2	1.6%	0.108 ha
Sub Total		**100**	**78.7%**	**3.972 ha**
32m Deep Lots				
Villa	10.5m	5	3.9%	0.228 ha
Premium Villa	12.5m	10	7.9%	0.410 ha
Courtyard	14m	9	7.1%	0.467 ha
Sub Total		**24**	**18.9%**	**1.105 ha**
Total Allotments		**127**	**100%**	**5.198 ha**
Average Lot Size (m²)		**409 m²**		

Land Budget	**Area (Ha)**	**%**
Area of Subject Site / Stage	23.410 ha	—
Net Residential Area (no roads)	5.198 ha	22.2%
Open Space / Drainage	2.024 ha	8.6%
Pedestrian Links	0.005 ha	0.0%
Road Areas	2.522 ha	10.8%
Low Medium Dwelling up to 50dw/ha (Lot 5000)	0.961 ha	4.1%
Low Medium Dwelling up to 50dw/ha (Lot 5001)	0.624 ha	2.7%
Balance (Lot 1000)	12.076 ha	51.6%
Total	**23.410 ha**	**100.0%**

SCALE @A1 1:1500 @A3 1:3000 - LENGTHS ARE IN METRES

20 0 20 40 60 80 100 120 140 160 180

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CLIENT
LGR DEVELOPMENTS PTY LTD

SITE ADDRESS
WARRIGAL ROAD, RUNCORN

RP DESCRIPTION
LOT 910 ON SP315946, LOT 1 ON RP103201

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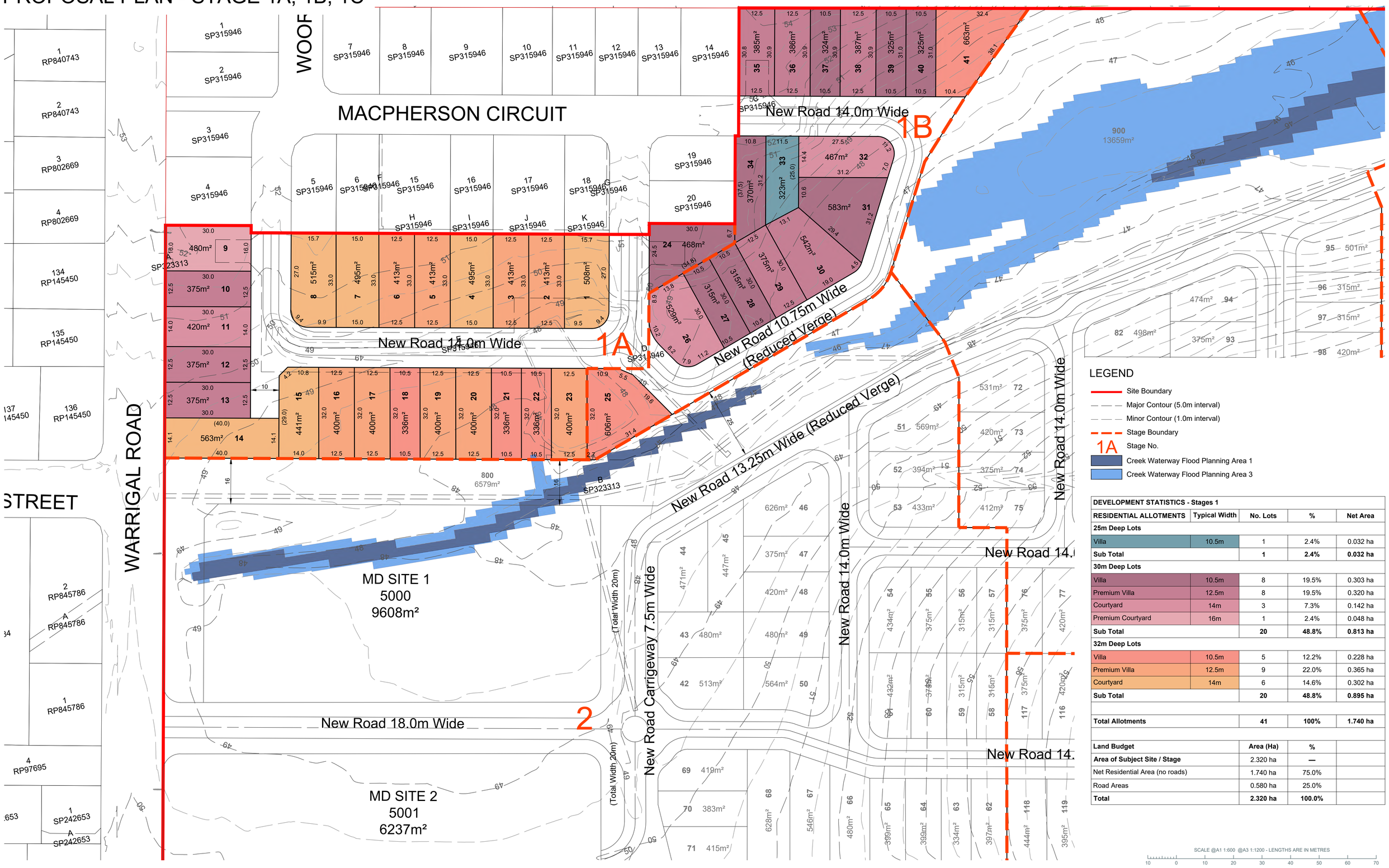
JC

DATE
13/10/2026

DRAWING NO.
13163 P 06 Rev B - PRO 02

PROPOSAL PLAN - STAGE 1A, 1B, 1C



DEVELOPMENT STATISTICS - Stages 1				
RESIDENTIAL ALLOTMENTS	**Typical Width**	**No. Lots**	**%**	**Net Area**
25m Deep Lots				
Villa	10.5m	1	2.4%	0.032 ha
Sub Total		**1**	**2.4%**	**0.032 ha**
30m Deep Lots				
Villa	10.5m	8	19.5%	0.303 ha
Premium Villa	12.5m	8	19.5%	0.320 ha
Courtyard	14m	3	7.3%	0.142 ha
Premium Courtyard	16m	1	2.4%	0.048 ha
Sub Total		**20**	**48.8%**	**0.813 ha**
32m Deep Lots				
Villa	10.5m	5	12.2%	0.228 ha
Premium Villa	12.5m	9	22.0%	0.365 ha
Courtyard	14m	6	14.6%	0.302 ha
Sub Total		**20**	**48.8%**	**0.895 ha**
Total Allotments		**41**	**100%**	**1.740 ha**

Land Budget	**Area (Ha)**	**%**	
Area of Subject Site / Stage	2.320 ha	—	
Net Residential Area (no roads)	1.740 ha	75.0%	
Road Areas	0.580 ha	25.0%	
Total	**2.320 ha**	**100.0%**	

SCALE @A1 1:600 @A3 1:1200 - LENGTHS ARE IN METRES

10 0 10 20 30 40 50 60 70

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CLIENT
LGR DEVELOPMENTS PTY LTD

SITE ADDRESS
WARRIGAL ROAD, RUNCORN

RP DESCRIPTION
LOT 910 ON SP315946, LOT 1 ON RP103201

DRAWN
JC

DATE
13/10/2026

DRAWING NO.
13163 P 06 Rev B - STG 01

PROPOSAL PLAN - STAGE 2



DEVELOPMENT STATISTICS - Stages 2				
RESIDENTIAL ALLOTMENTS	**Typical Width**	**No. Lots**	**%**	**Net Area**
25m Deep Lots				
Courtyard	14m	1	3.3%	0.042 ha
Premium Courtyard	16m	1	3.3%	0.047 ha
Sub Total		**2**	**6.7%**	**0.089 ha**
30m Deep Lots				
Villa	10.5m	5	16.7%	0.159 ha
Premium Villa	12.5m	9	30.0%	0.391 ha
Courtyard	14m	6	20.0%	0.252 ha
Premium Courtyard	16m	2	6.7%	0.096 ha
Traditional	18m	2	6.7%	0.108 ha
Sub Total		**24**	**80.0%**	**1.006 ha**
32m Deep Lots				
Premium Villa	12.5m	1	3.3%	0.045 ha
Courtyard	14m	3	10.0%	0.165 ha
Sub Total		**4**	**13.3%**	**0.210 ha**
Total Allotments		**30**	**100%**	**1.305 ha**

Land Budget	**Area (Ha)**	**%**
Area of Subject Site / Stage	4.644 ha	—
Net Residential Area (no roads)	1.305 ha	28.1%
Open Space / Drainage	0.658 ha	14.2%
Road Areas	1.096 ha	23.6%
Low Medium Dwelling up to 50dw/ha (Lot 5000)	0.961 ha	20.7%
Low Medium Dwelling up to 50dw/ha (Lot 5001)	0.624 ha	13.4%
Total	**4.644 ha**	**100.0%**

SCALE @A1 1:600 @A3 1:1200 - LENGTHS ARE IN METRES

10 0 10 20 30 40 50 60 70

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CLIENT
LGR DEVELOPMENTS PTY LTD

SITE ADDRESS
WARRIGAL ROAD, RUNCORN

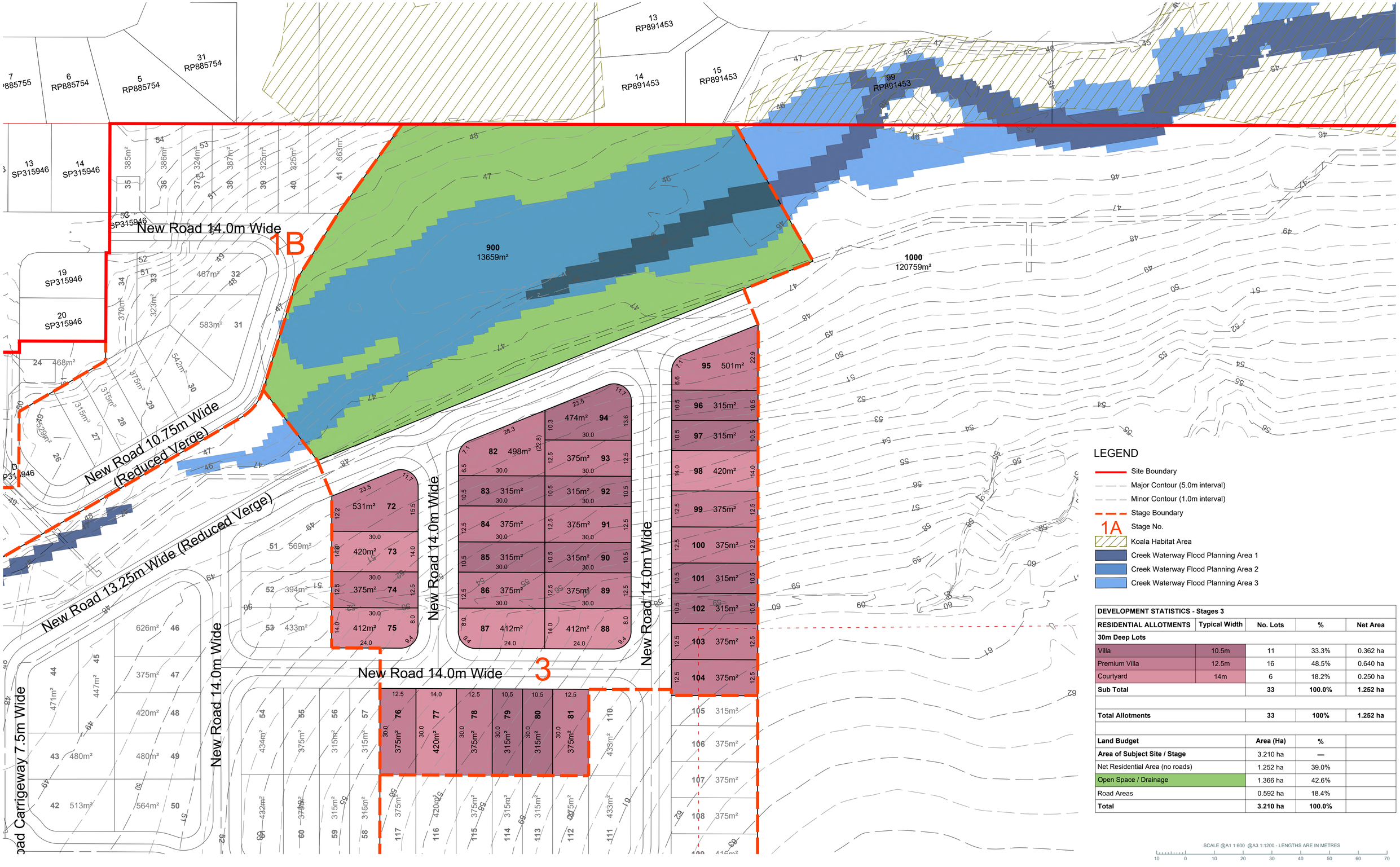
DRAWN
JC

DATE
13/10/2026

RP DESCRIPTION
LOT 910 ON SP315946, LOT 1 ON RP103201

DRAWING NO.
13163 P 06 Rev B - STG 02

PROPOSAL PLAN - STAGE 3



LEGEND

- Site Boundary
- Major Contour (5.0m interval)
- Minor Contour (1.0m interval)
- Stage Boundary
- 1A Stage No.
- Koala Habitat Area
- Creek Waterway Flood Planning Area 1
- Creek Waterway Flood Planning Area 2
- Creek Waterway Flood Planning Area 3

DEVELOPMENT STATISTICS - Stages 3

RESIDENTIAL ALLOTMENTS	Typical Width	No. Lots	%	Net Area
30m Deep Lots				
Villa	10.5m	11	33.3%	0.362 ha
Premium Villa	12.5m	16	48.5%	0.640 ha
Courtyard	14m	6	18.2%	0.250 ha
Sub Total		**33**	**100.0%**	**1.252 ha**
Total Allotments		**33**	**100%**	**1.252 ha**

Land Budget	Area (Ha)	%	
Area of Subject Site / Stage	3.210 ha	—	
Net Residential Area (no roads)	1.252 ha	39.0%	
Open Space / Drainage	1.366 ha	42.6%	
Road Areas	0.592 ha	18.4%	
Total	**3.210 ha**	**100.0%**	

SCALE @A1 1:600 @A3 1:1200 - LENGTHS ARE IN METRES

10 0 10 20 30 40 50 60 70

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SITE ADDRESS
WARRIGAL ROAD, RUNCORN

RP DESCRIPTION
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DATE
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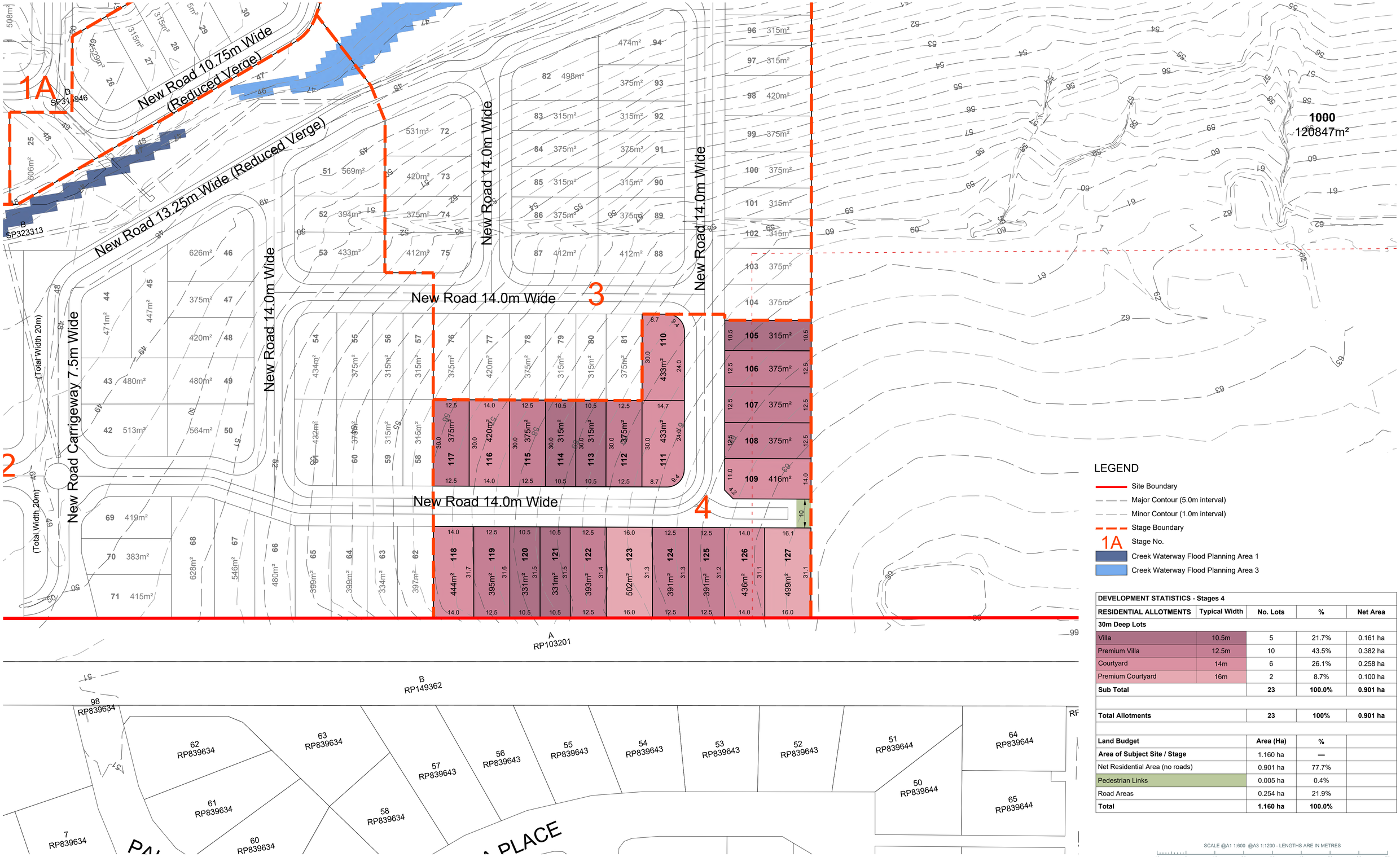
13163 P 06 Rev B - STG 03

PROPOSAL PLAN - STAGE 4



DEVELOPMENT STATISTICS - Stages 4				
RESIDENTIAL ALLOTMENTS	**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots				
Villa	10.5m	5	21.7%	0.161 ha
Premium Villa	12.5m	10	43.5%	0.382 ha
Courtyard	14m	6	26.1%	0.258 ha
Premium Courtyard	16m	2	8.7%	0.100 ha
Sub Total		**23**	**100.0%**	**0.901 ha**
Total Allotments		**23**	**100%**	**0.901 ha**
Land Budget		**Area (Ha)**	**%**	
Area of Subject Site / Stage		1.160 ha	—	
Net Residential Area (no roads)		0.901 ha	77.7%	
Pedestrian Links		0.005 ha	0.4%	
Road Areas		0.254 ha	21.9%	
Total		**1.160 ha**	**100.0%**	

SCALE @A1 1:600 @A3 1:1200 - LENGTHS ARE IN METRES

10 0 10 20 30 40 50 60 70

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SITE ADDRESS
WARRIGAL ROAD, RUNCORN

DRAWN
JC

DATE
13/10/2026

RP DESCRIPTION
LOT 910 ON SP315946, LOT 1 ON RP103201

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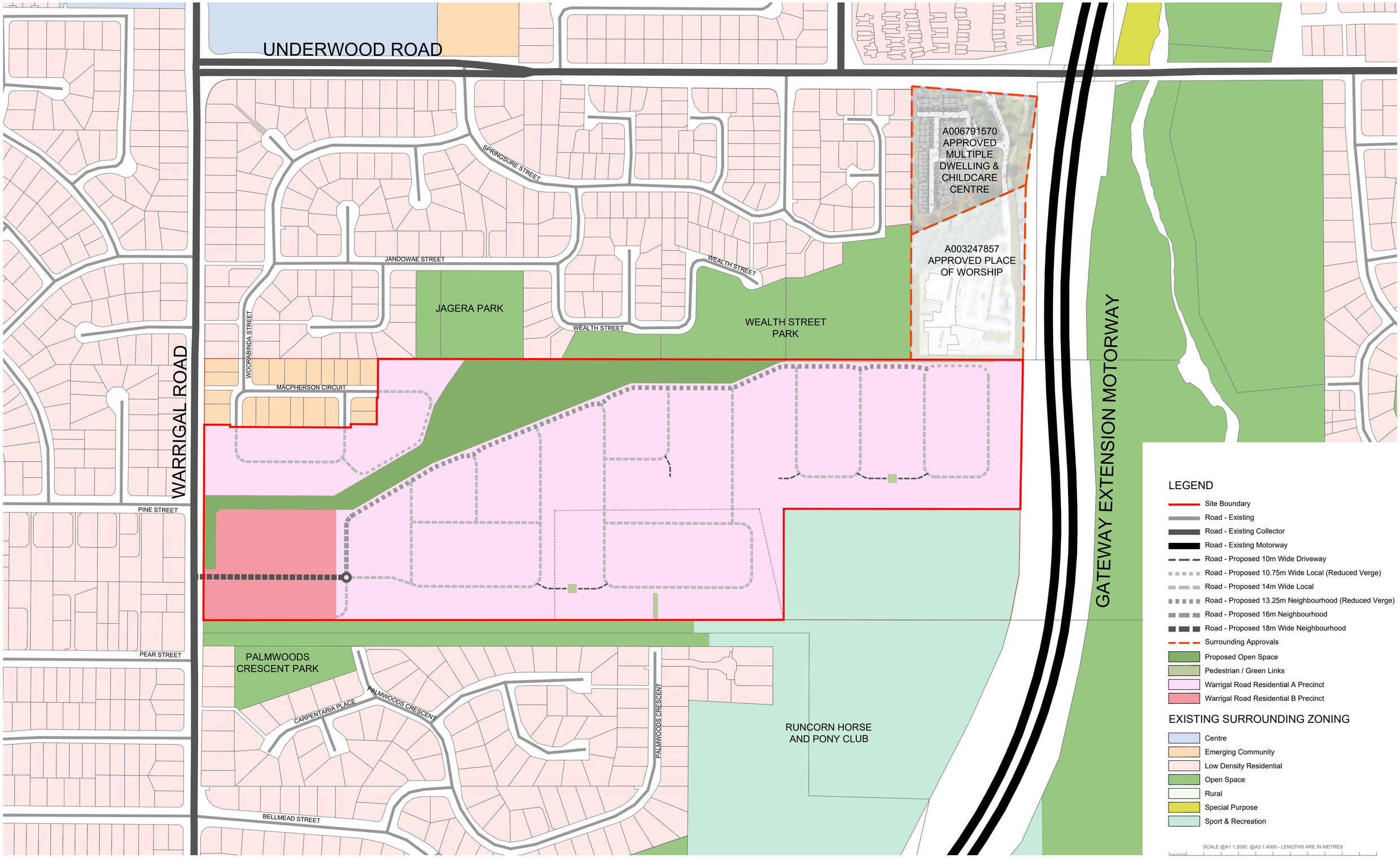
13163 P 06 Rev B - STG 04

WARRIGAL RD STRUCTURE PLAN



LEGEND

- Site Boundary
- Road - Existing
- Road - Existing Collector
- Road - Existing Motorway
- Road - Proposed 10m Wide Driveway
- Road - Proposed 10.75m Wide Local (Reduced Verge)
- Road - Proposed 14m Wide Local
- Road - Proposed 13.25m Neighbourhood (Reduced Verge)
- Road - Proposed 16m Neighbourhood
- Road - Proposed 18m Wide Neighbourhood
- Surrounding Approvals
- Proposed Open Space
- Pedestrian / Green Links
- Warrigal Road Residential A Precinct
- Warrigal Road Residential B Precinct

EXISTING SURROUNDING ZONING

- Centre
- Emerging Community
- Low Density Residential
- Open Space
- Rural
- Special Purpose
- Sport & Recreation

SCALE @A1 1:2000 @A3 1:4000 - LENGTHS ARE IN METRES

20 0 20 40 60 80 100 120 140 160 180 200 220

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CLIENT
LGR DEVELOPMENTS PTY LTD

SITE ADDRESS
WARRIGAL ROAD, RUNCORN

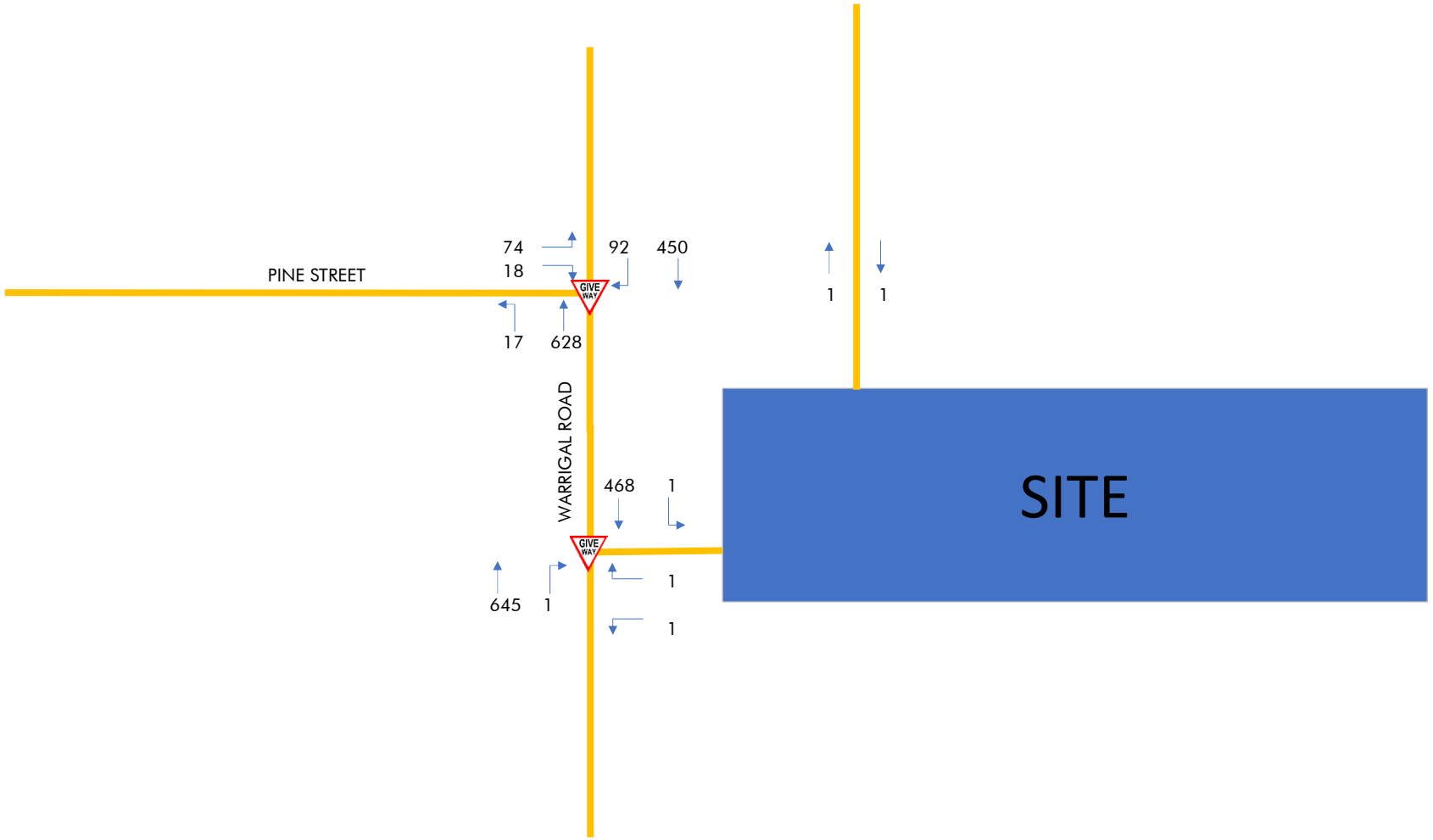
DRAWN
JC

DATE
13/10/2026

RP DESCRIPTION
LOT 910 ON SP315946, LOT 1 ON RP103201

DRAWING NO.
13163 P 07 Rev D - STR 01

APPENDIX D
TURNING MOVEMENT FORECASTS



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TRAFFIC & TRANSPORT ENGINEERING

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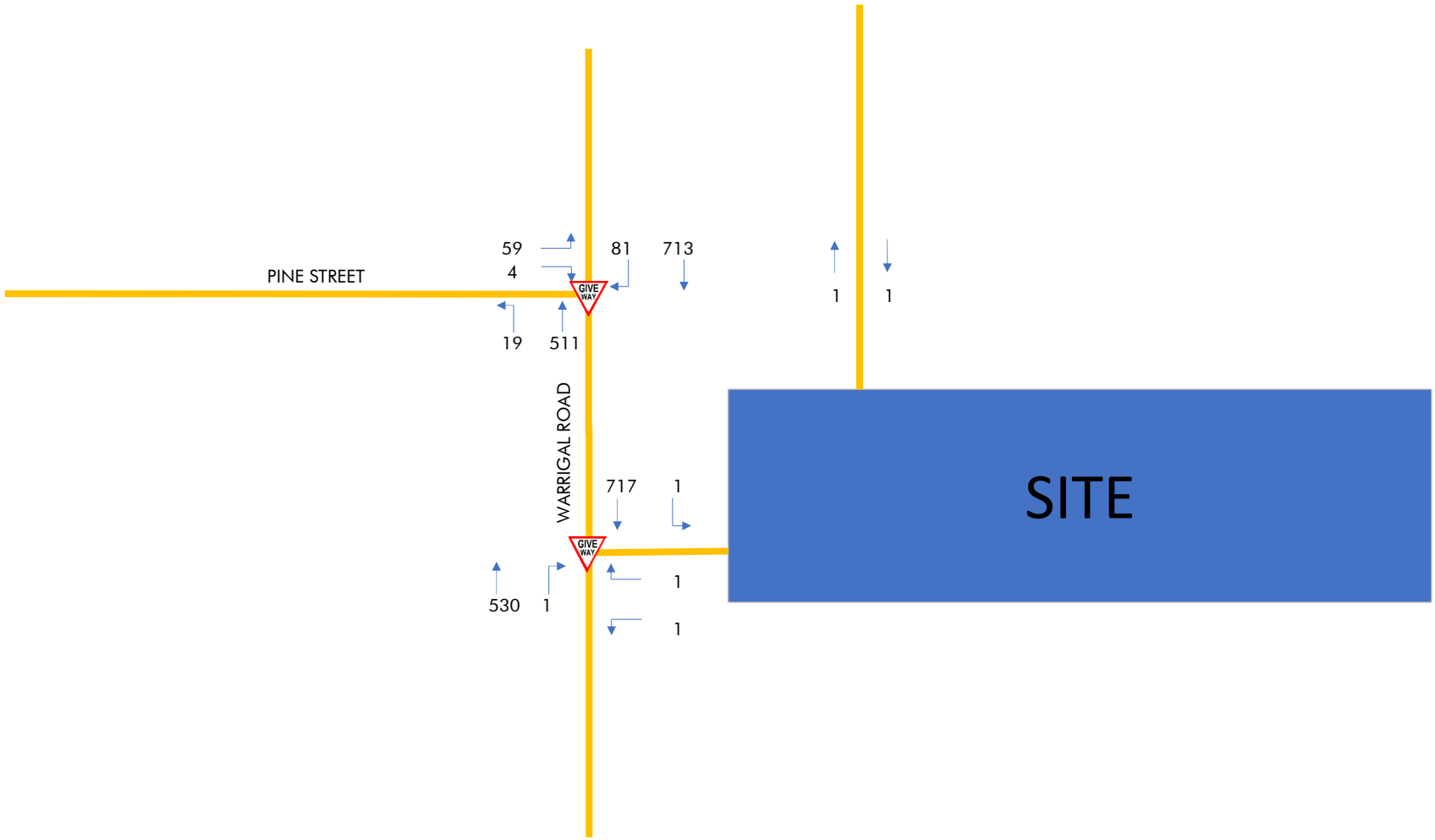
ABN 96 067 593 962
P 07 3839 6771 WWW.PTT.COM.AU
Level 2, 62 Astor Tce, Spring Hill QLD 4000

Client	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn upto 280 lots
Date	26/05/2026	**Figure**	Figure 1
Job No.	26-570		

2026 Existing Morning Peak Hour



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TRAFFIC & TRANSPORT ENGINEERING

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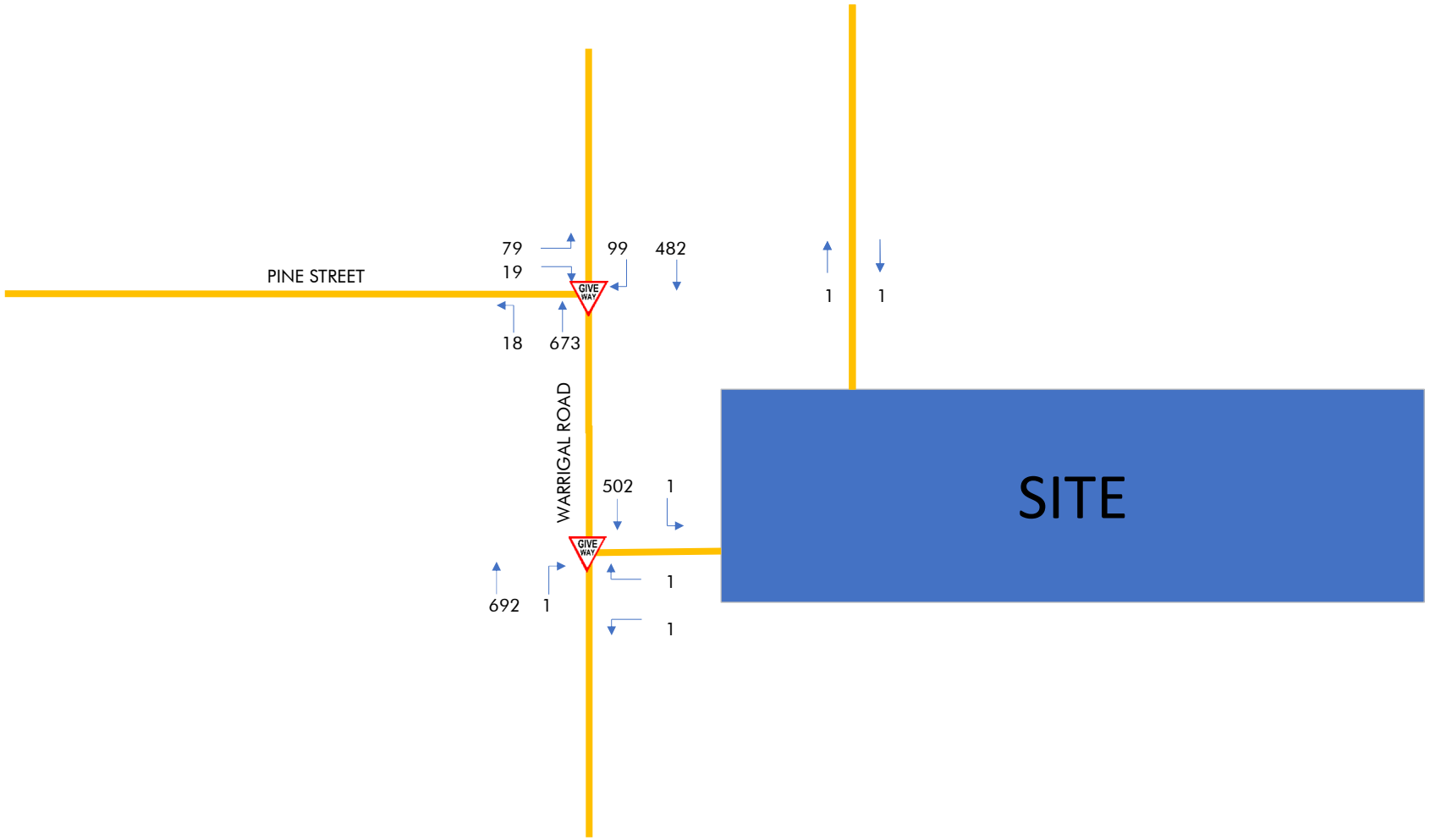
ABN 96 067 593 962
P 07 3839 6771 WWW.PTT.COM.AU
Level 2, 62 Astor Tce, Spring Hill QLD 4000

Client	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn upto 280 lots
Date	26/05/2026	**Figure**	Figure 2
Job No.	26-570		

2026 Existing Evening Peak Hour



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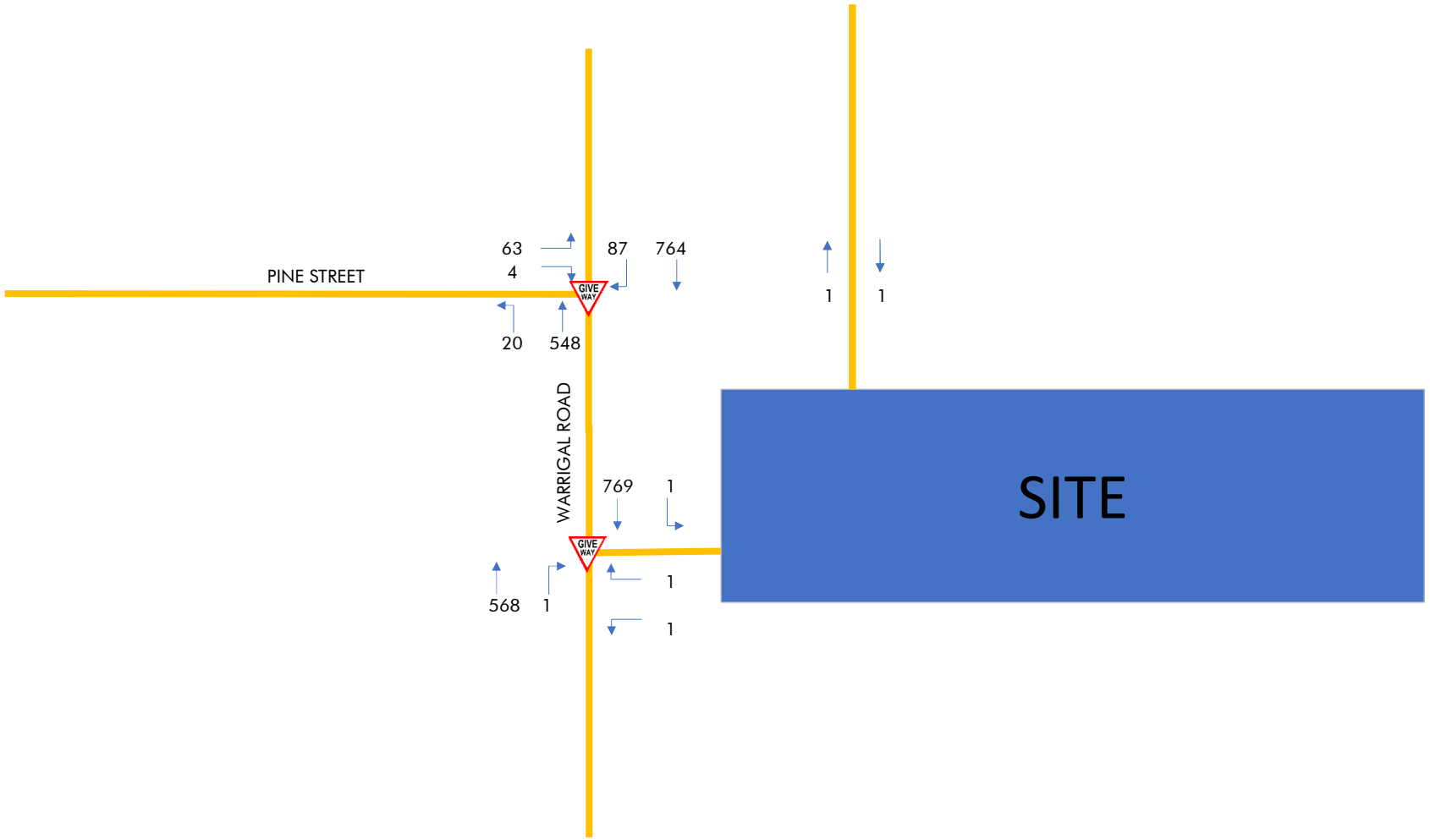
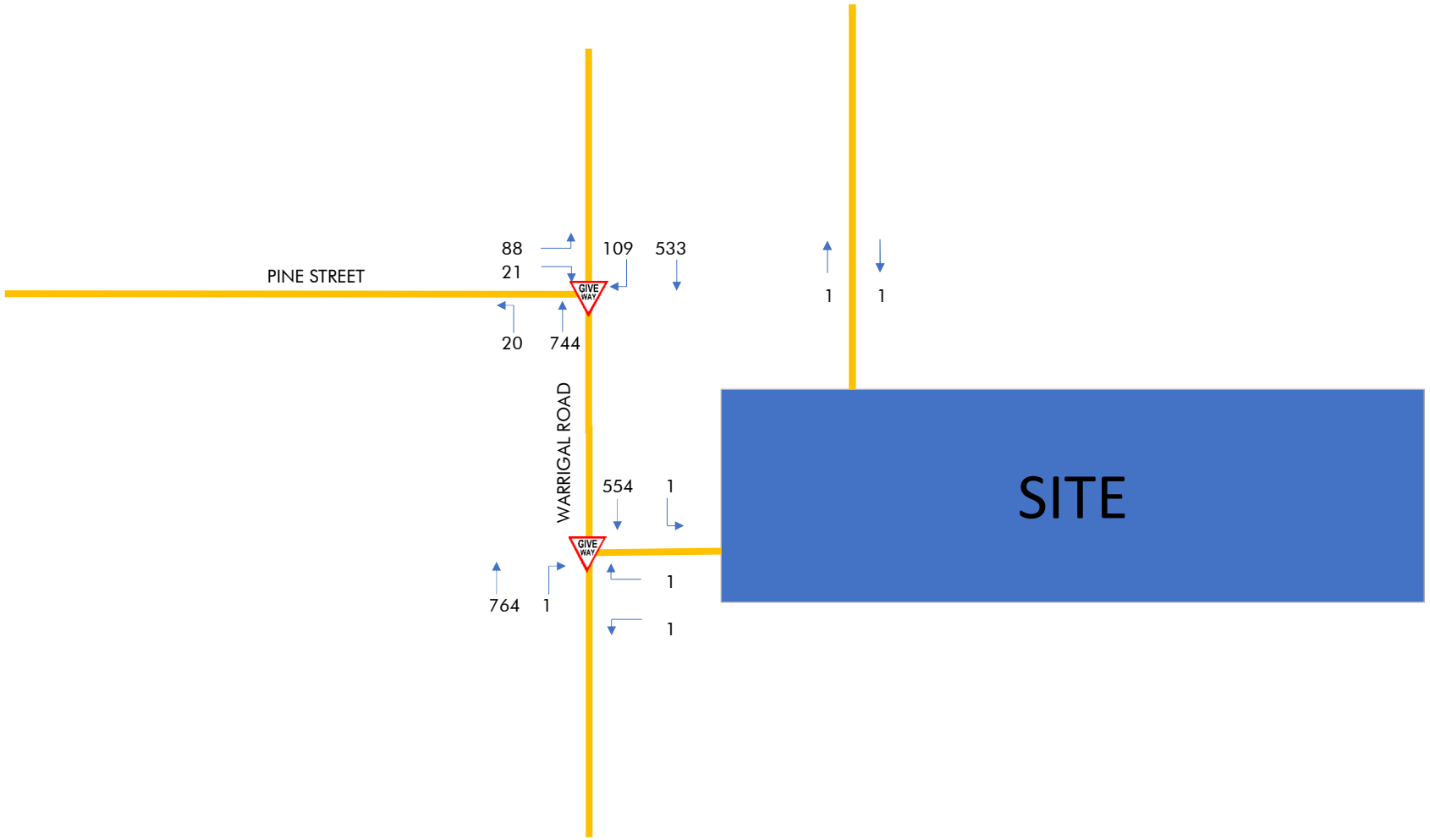
PTT
ABN 96 067 593 962
P 07 3839 6771 WWW.PTT.COM.AU
Level 2, 62 Astor Tce, Spring Hill QLD 4000

Client	LGR Developments Pty Ltd		**Project**	97 & 145 Warrigal Road, Runcorn upto 280 lots	
Date	26/05/2026	**Figure**	Figure 3	**Job No.**	26-570

2033 Pre-Development Morning Peak Hour



PTT TRAFFIC & TRANSPORT ENGINEERING PTT ABN 96 067 593 962 P 07 3839 6771 WWW.PTT.COM.AU Level 2, 62 Astor Tce, Spring Hill QLD 4000	**Client**	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn upto 280 lots	
	Date	26/05/2026	**Figure**	Figure 4	**Job No.** 26-570
	2033 Pre-Development Evening Peak Hour				



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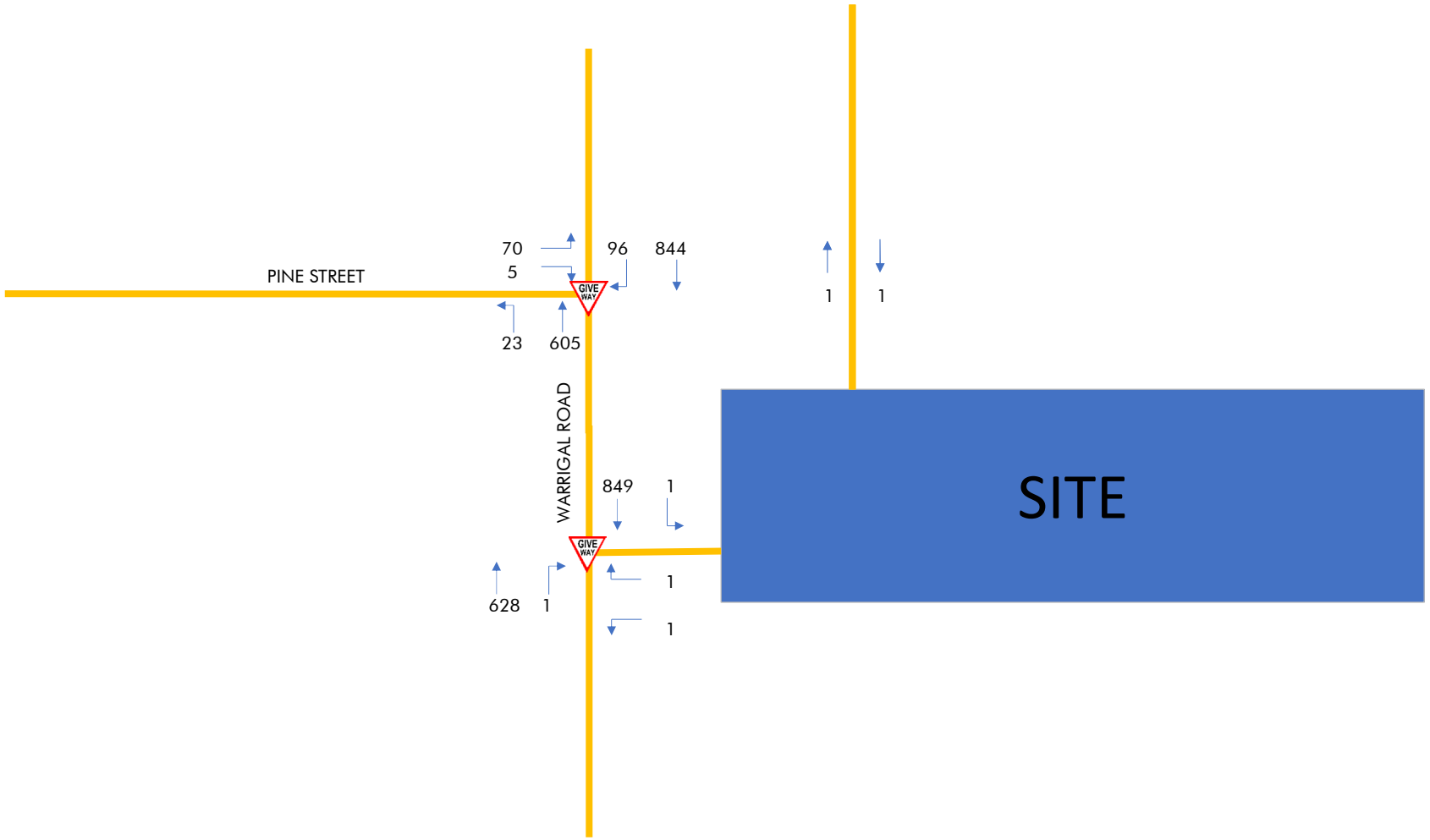
Level 2, 62 Astor Tce, Spring Hill QLD 4000

Client	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn upto 280 lots
Date	26/05/2026	**Figure**	Figure 5
Job No.	26-570		

2043 Pre-Development Morning Peak Hour



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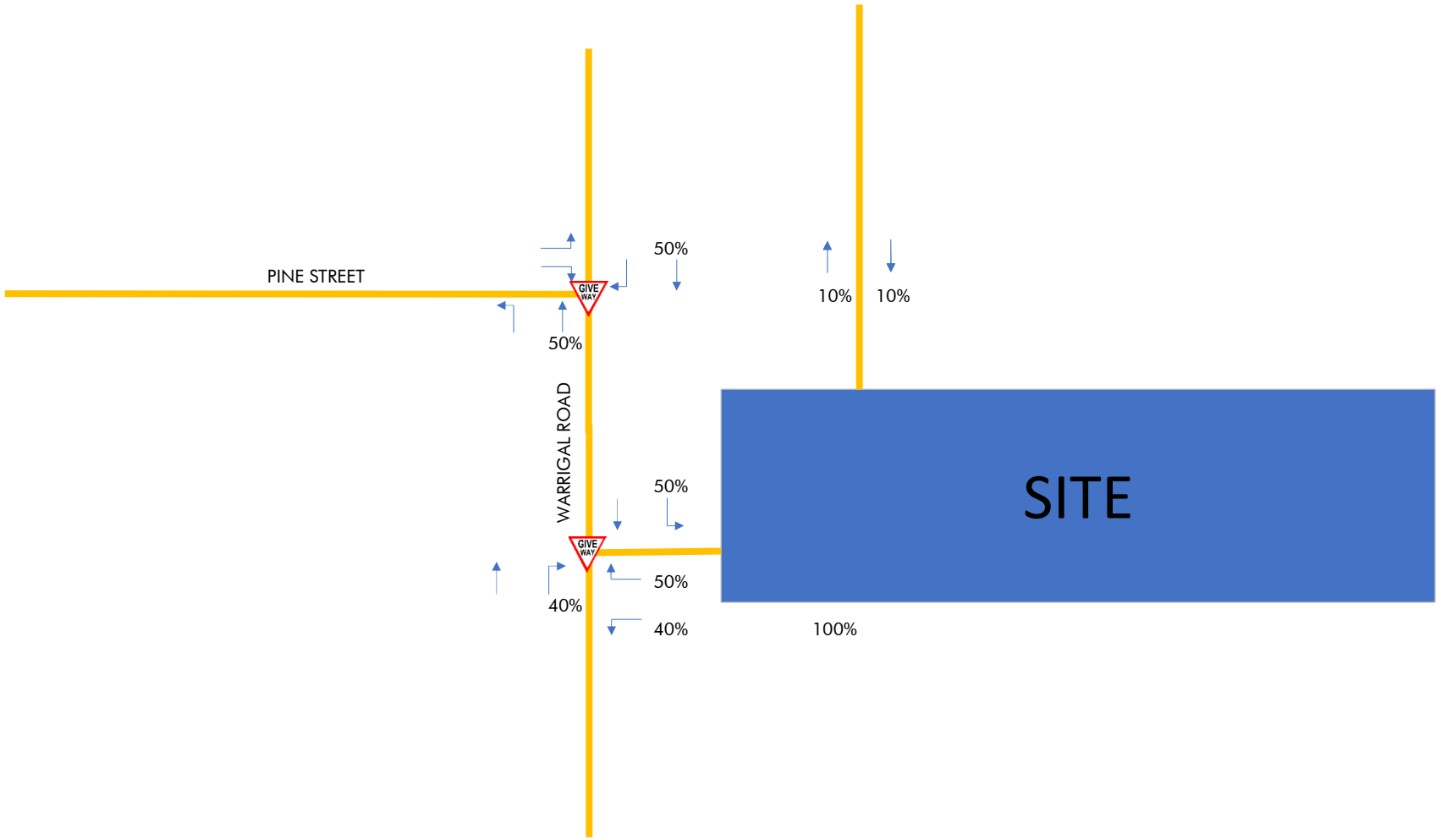
Client	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn upto 280 lots
Date	26/05/2026	**Figure**	Figure 6
Job No.	26-570		

2043 Pre-Development Evening Peak Hour



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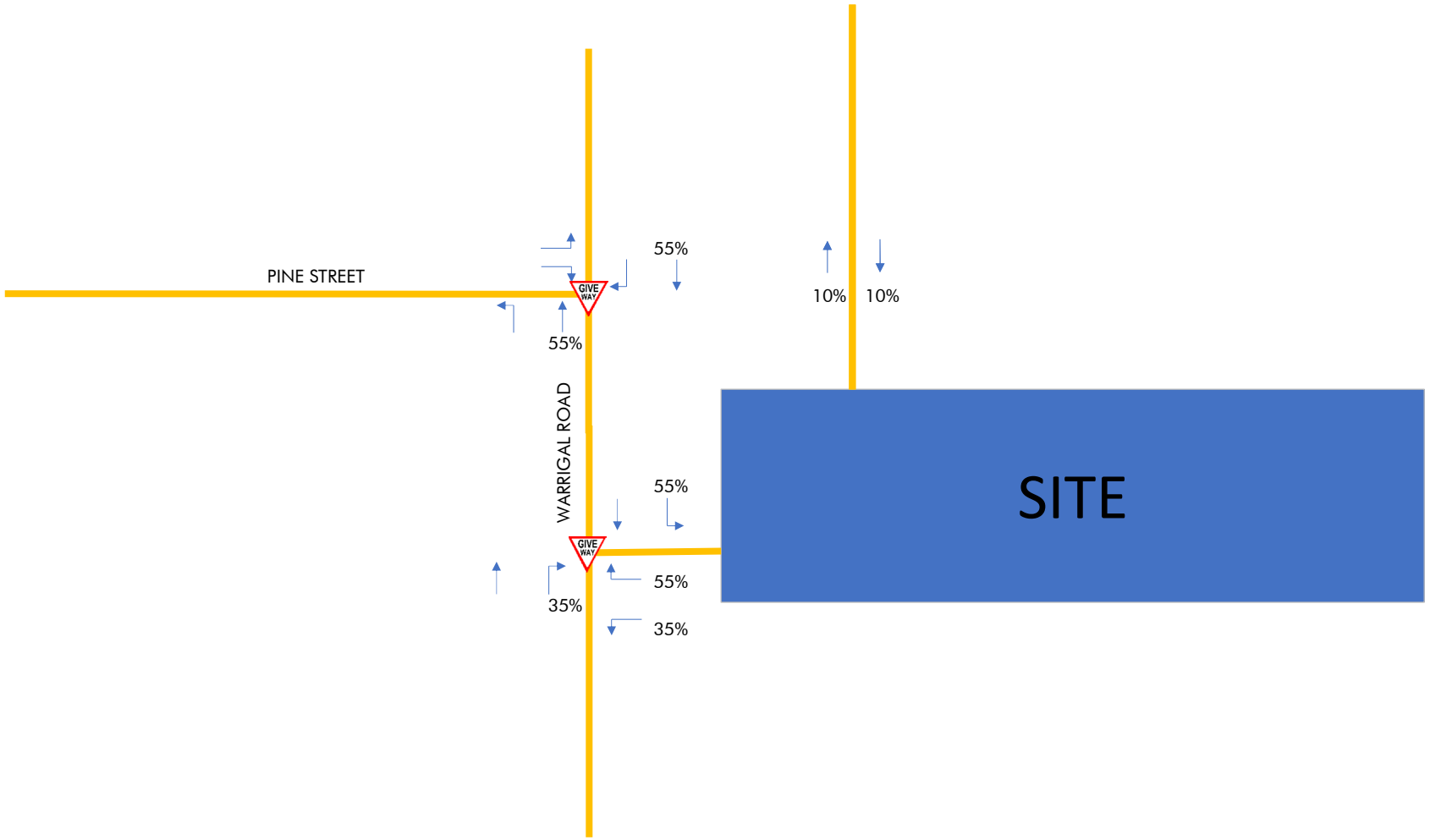
Client	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn upto 280 lots
Date	26/05/2026	**Figure**	Figure 7
Job No.	26-570		

Development Traffic Distribution - Morning Peak Hour



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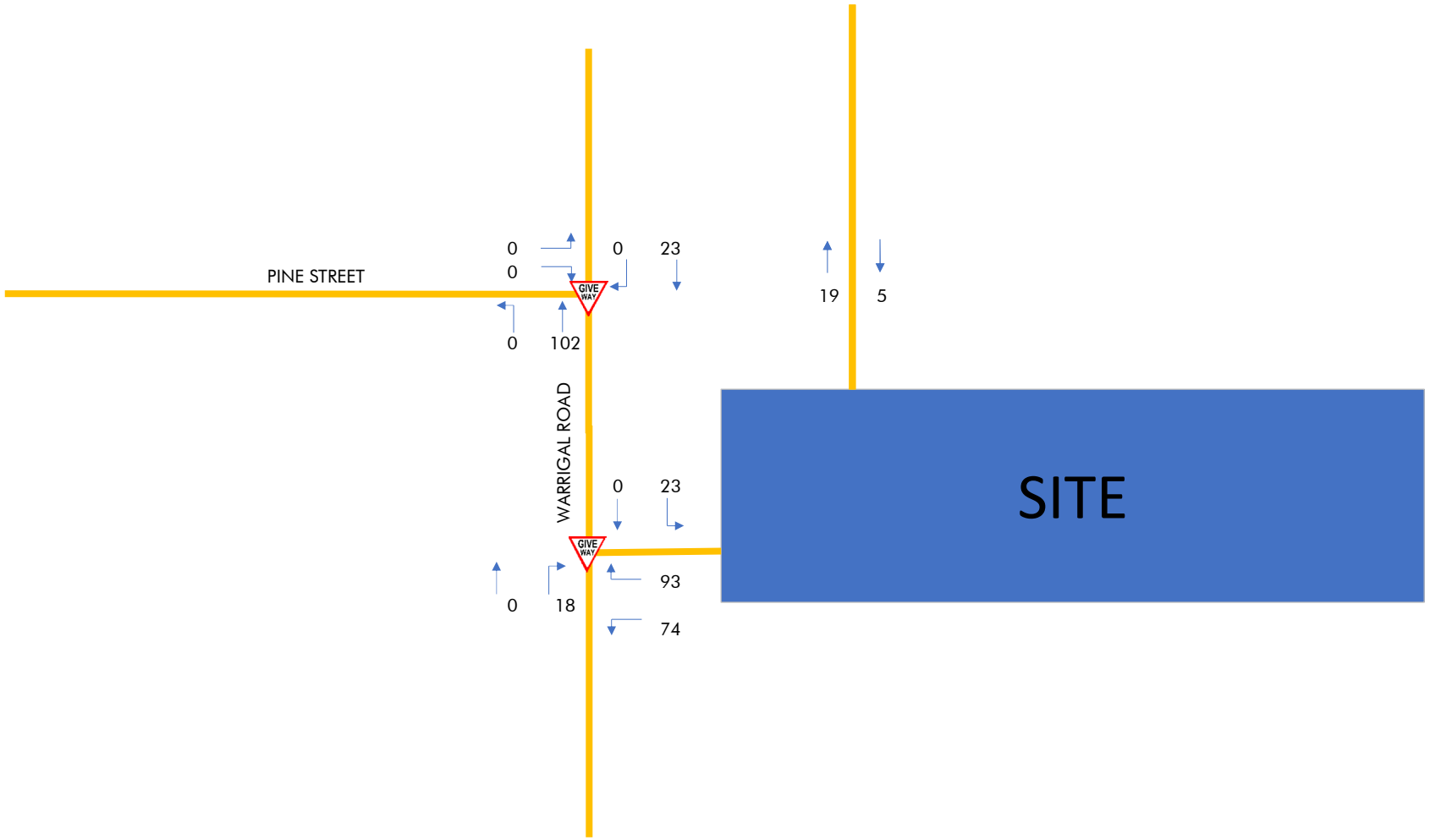
Client	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn upto 280 lots
Date	26/05/2026	**Figure**	Figure 8
Job No.	26-570		

Development Traffic Distribution - Evening Peak Hour



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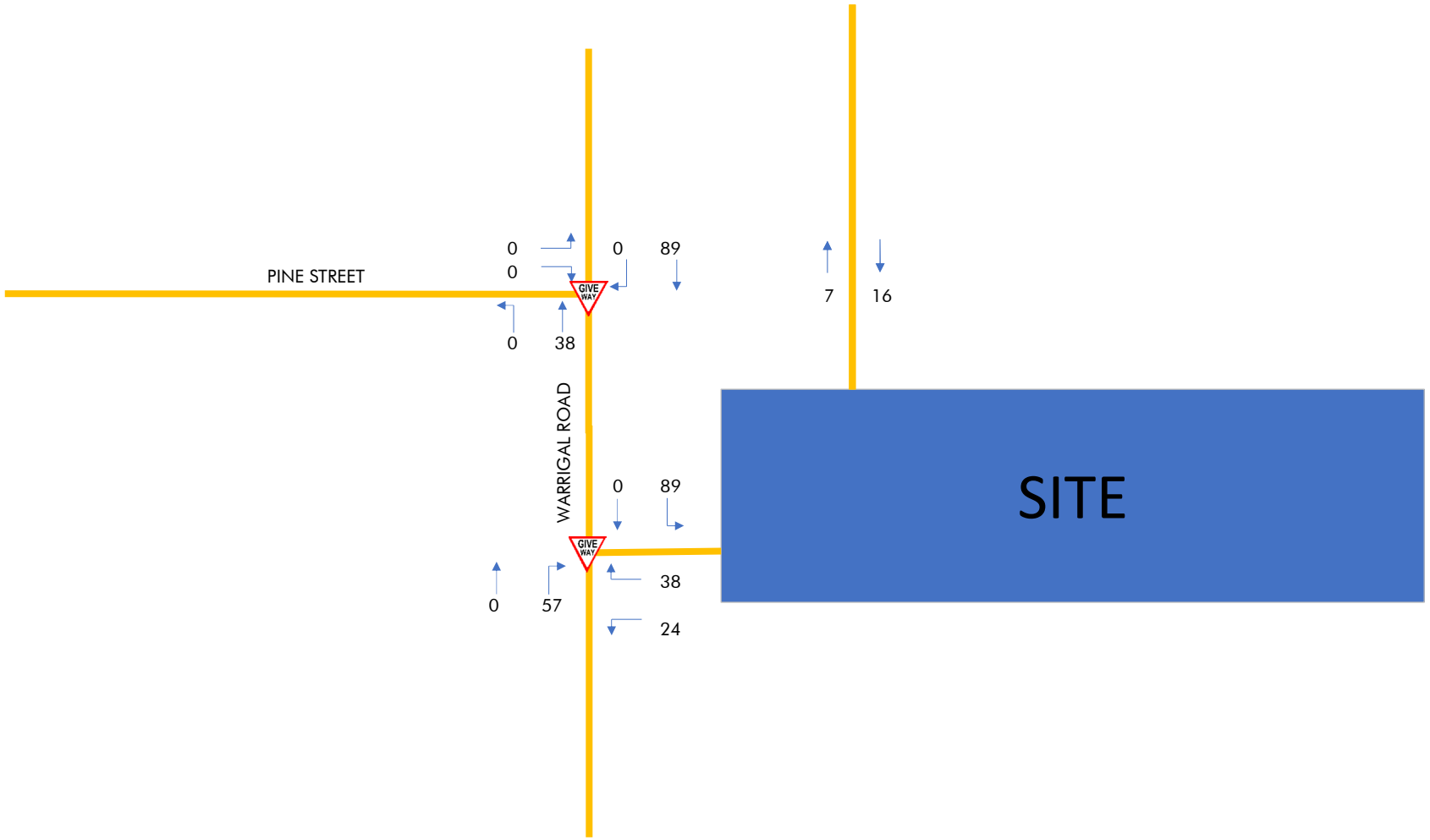
Client	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn upto 280 lots
Date	26/05/2026	**Figure**	Figure 9
Job No.	26-570		

Development Traffic Generation - Morning Peak Hour



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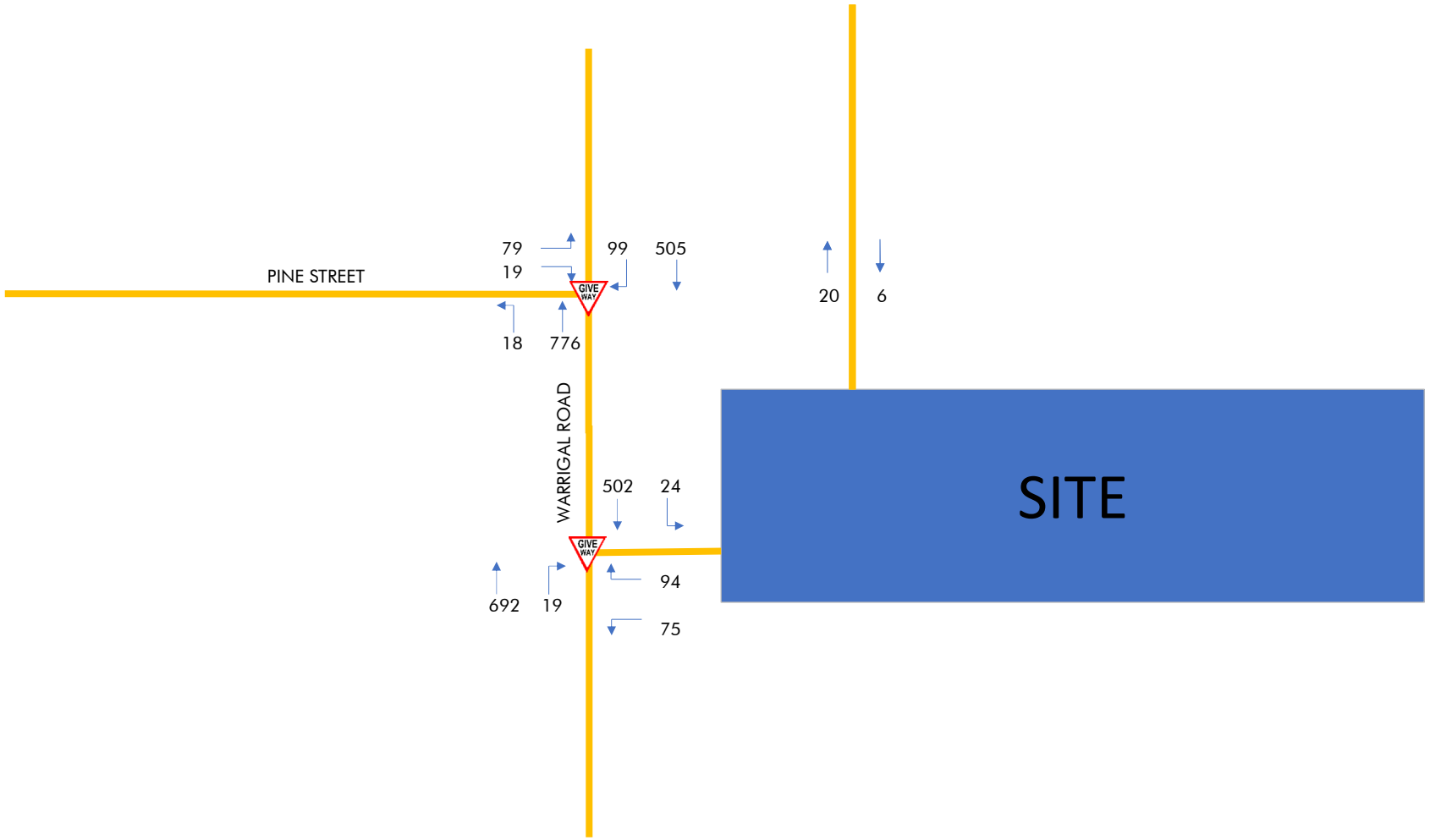
Client	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn upto 280 lots
Date	26/05/2026	**Figure**	Figure 10
Job No.	26-570		

Development Traffic Generation - Evening Peak Hour



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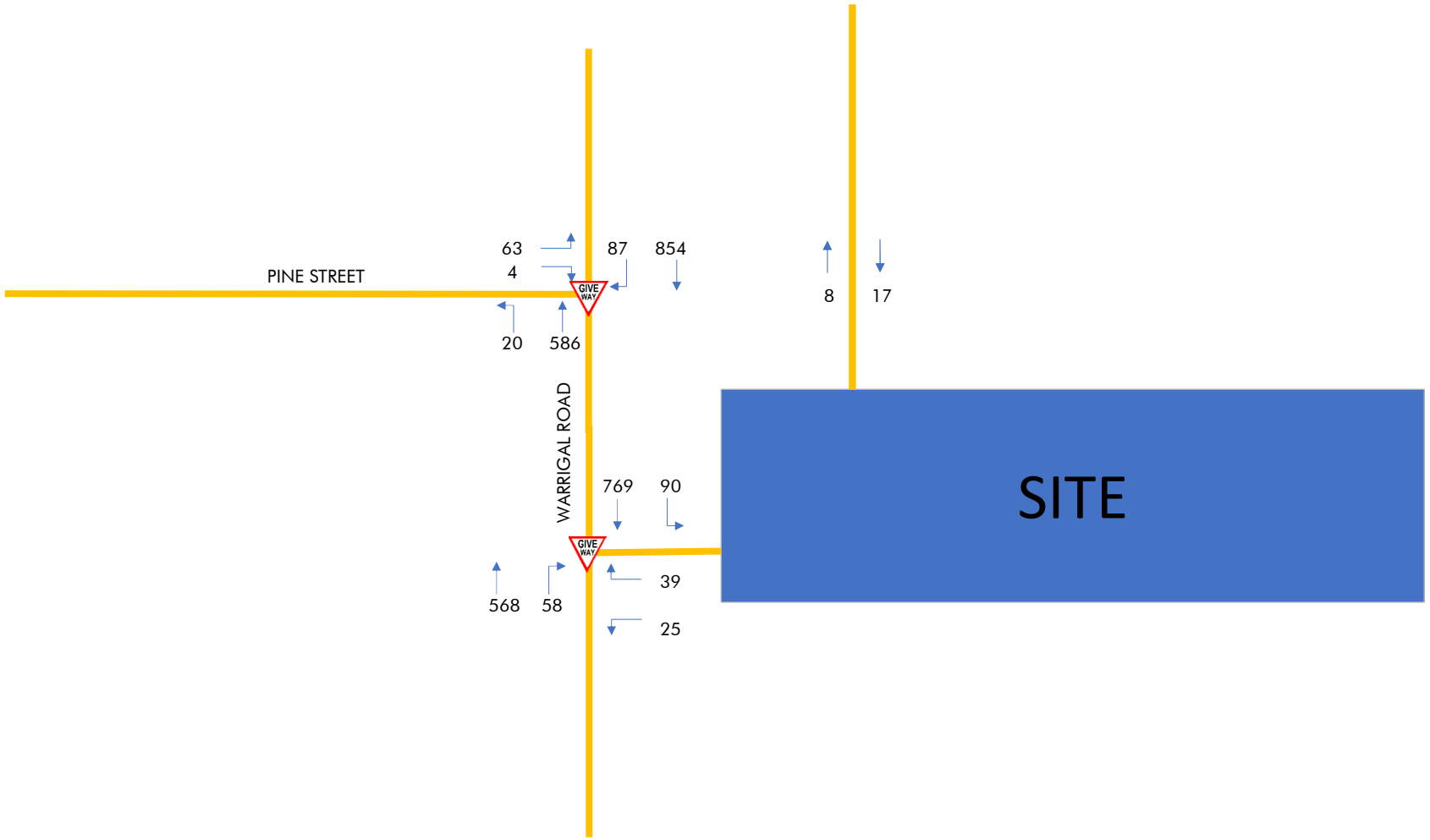
Client	LGR Developments Pty Ltd		**Project**	97 & 145 Warrigal Road, Runcorn upto 280 lots	
Date	26/05/2026	**Figure**	Figure 11	**Job No.**	26-570

2033 Post-Development Morning Peak Hour



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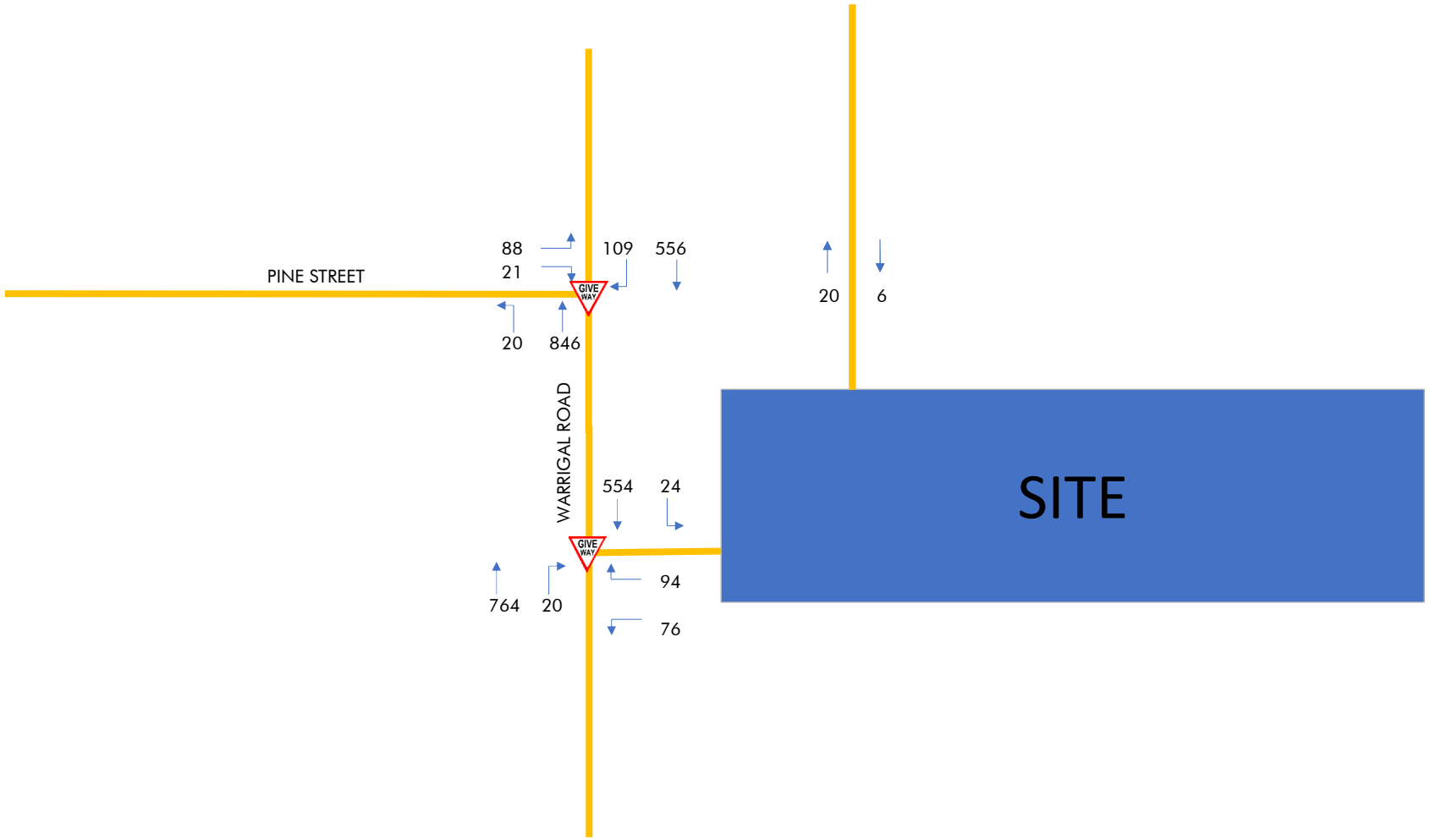
Client	LGR Developments Pty Ltd		**Project**	97 & 145 Warrigal Road, Runcorn upto 280 lots	
Date	26/05/2026	**Figure**	Figure 12	**Job No.**	26-570

2033 Post-Development Evening Peak Hour



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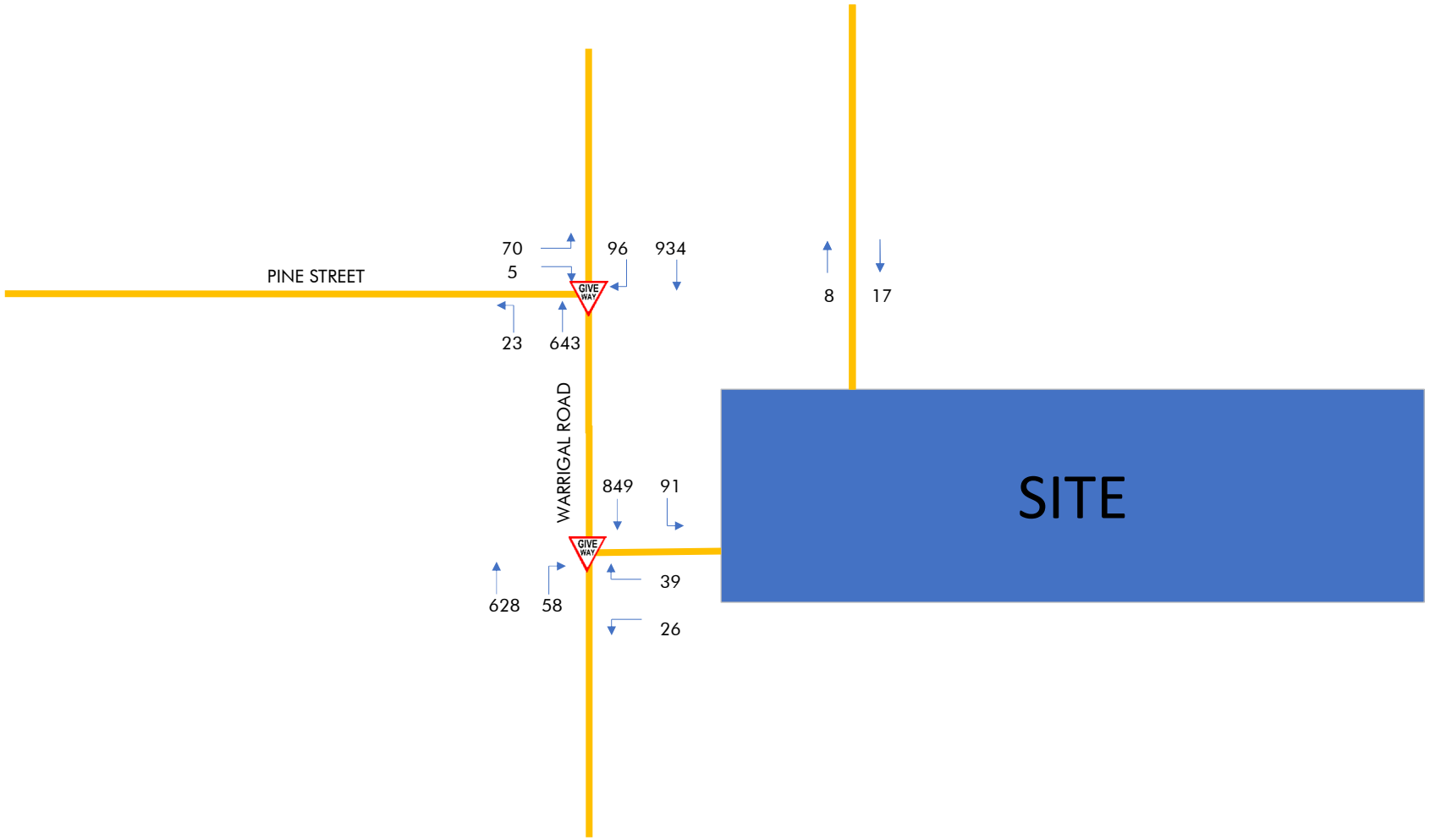
Client	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn upto 280 lots
Date	26/05/2026	**Figure**	Figure 13
Job No.	26-570		

2043 Post-Development Morning Peak Hour



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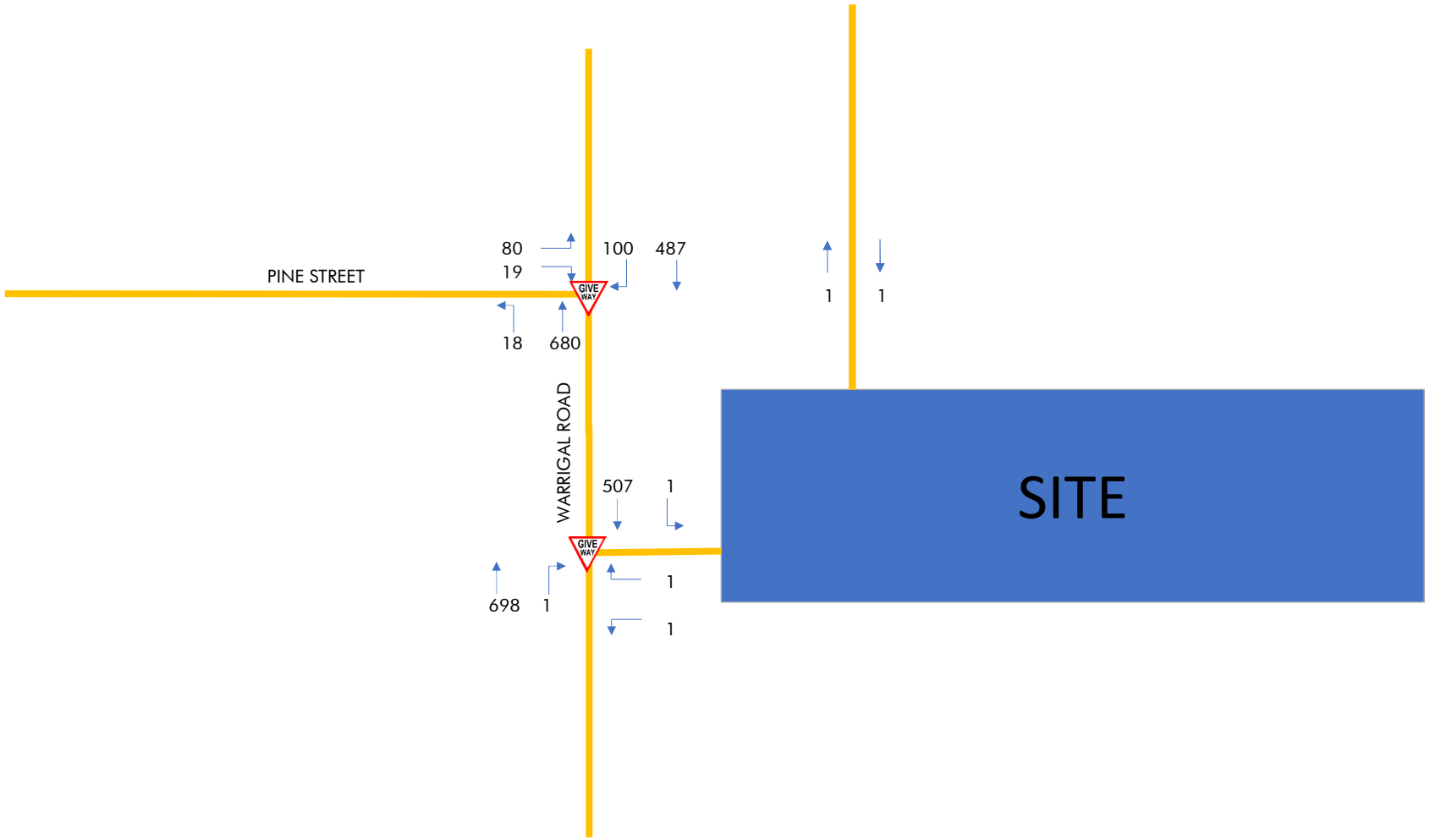
Client	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn upto 280 lots
Date	26/05/2026	**Figure**	Figure 14
Job No.	26-570		

2043 Post-Development Evening Peak Hour



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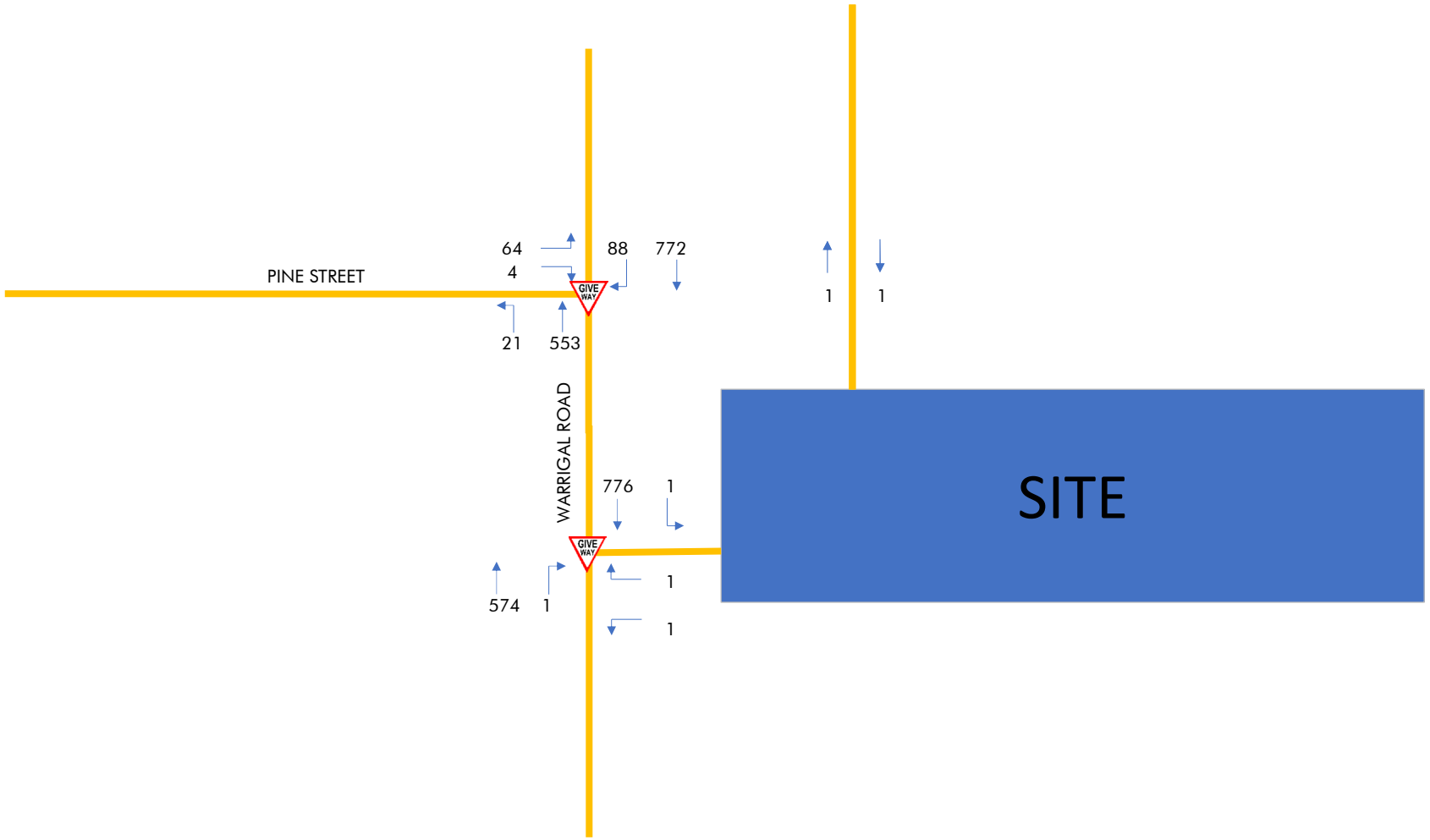
Client	LGR Developments Pty Ltd		**Project**	97 & 145 Warrigal Road, Runcorn	
Date	26/05/2026	**Figure**	Figure 3	**Job No.**	26-570

2034 Pre-Development Morning Peak Hour



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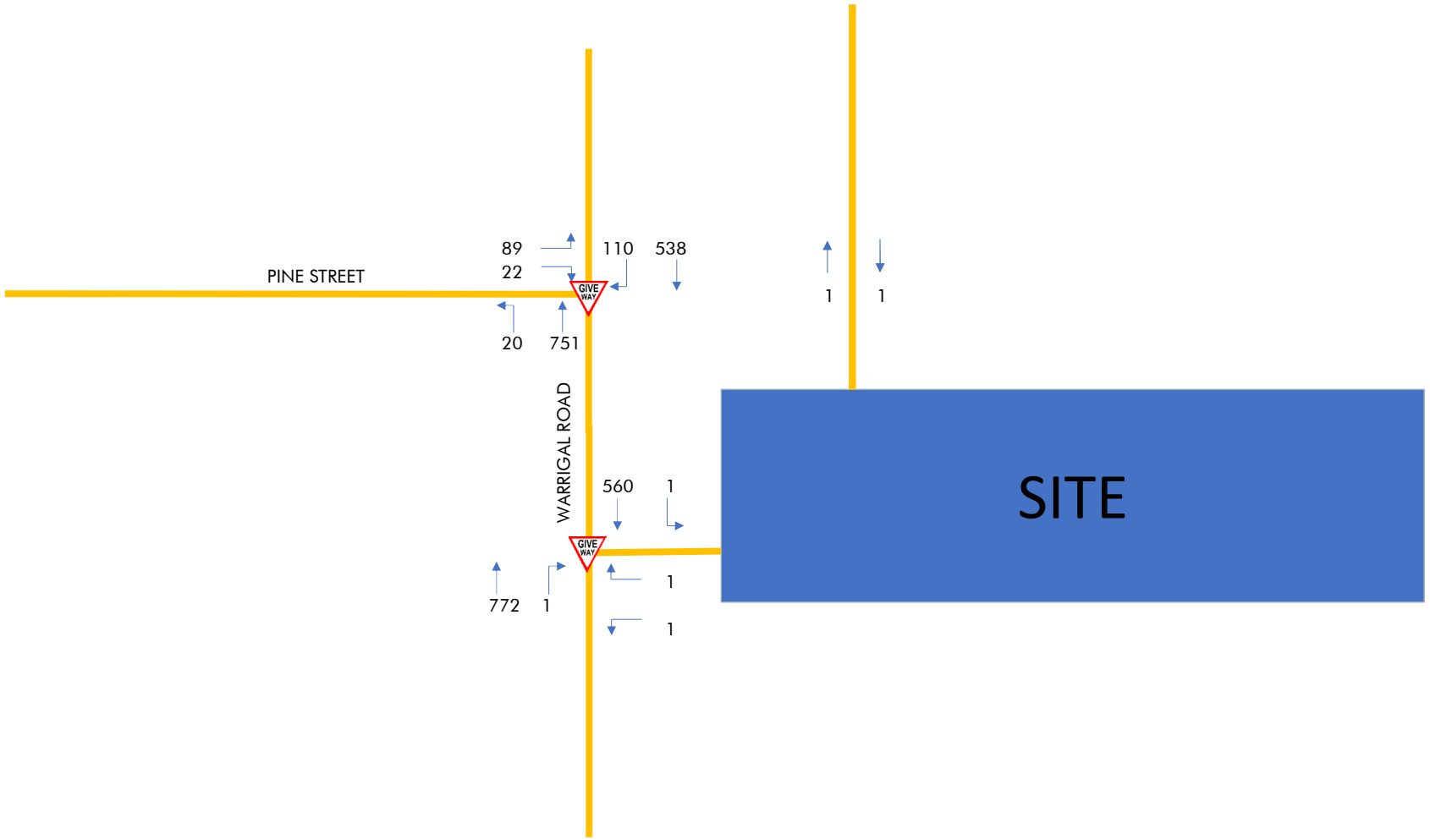
Client	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn
Date	26/05/2026	**Figure**	Figure 4
Job No.	26-570		

2034 Pre-Development Evening Peak Hour



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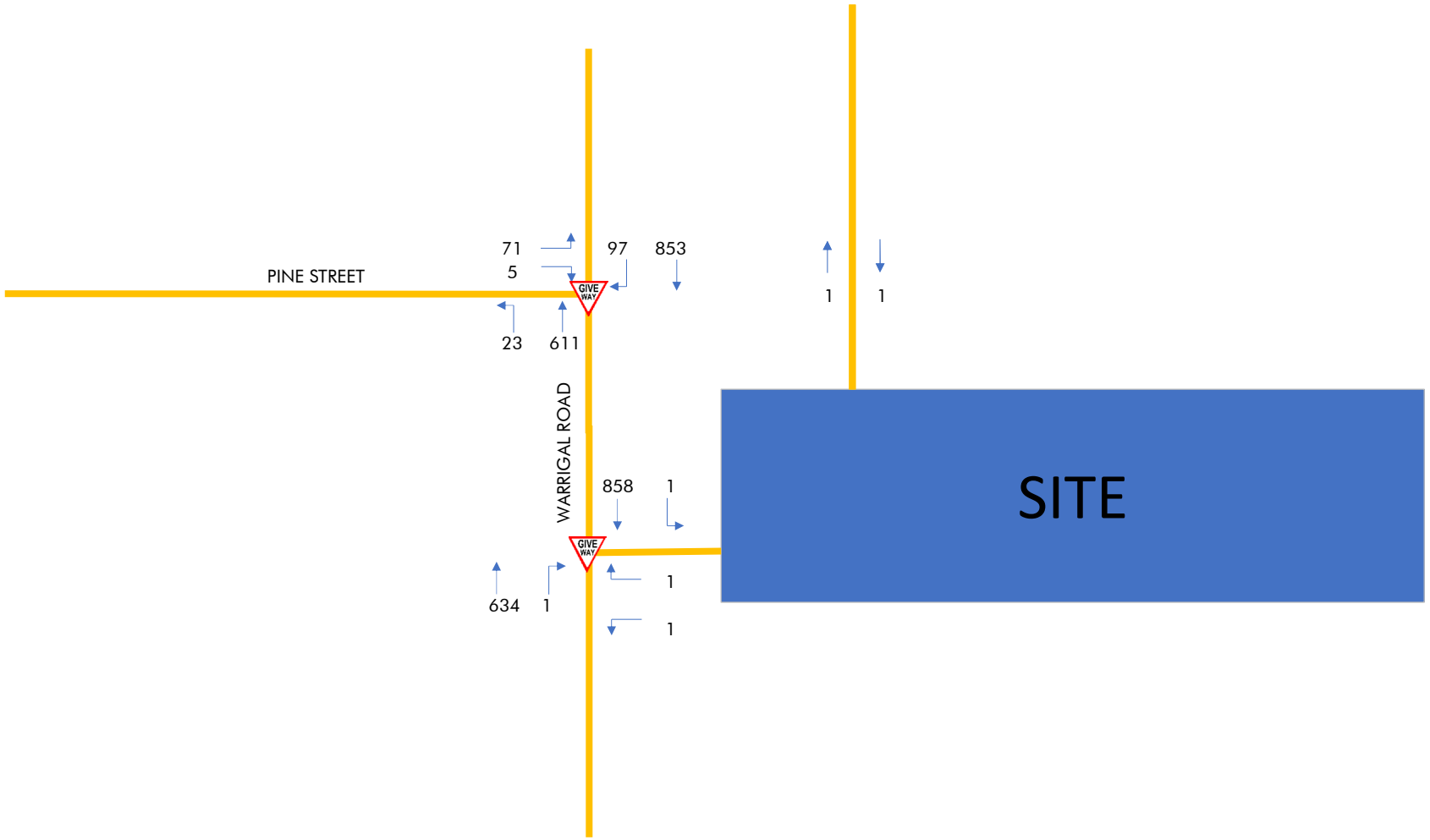
Client	LGR Developments Pty Ltd		**Project**	97 & 145 Warrigal Road, Runcorn	
Date	26/05/2026	**Figure**	Figure 5	**Job No.**	26-570

2044 Pre-Development Morning Peak Hour



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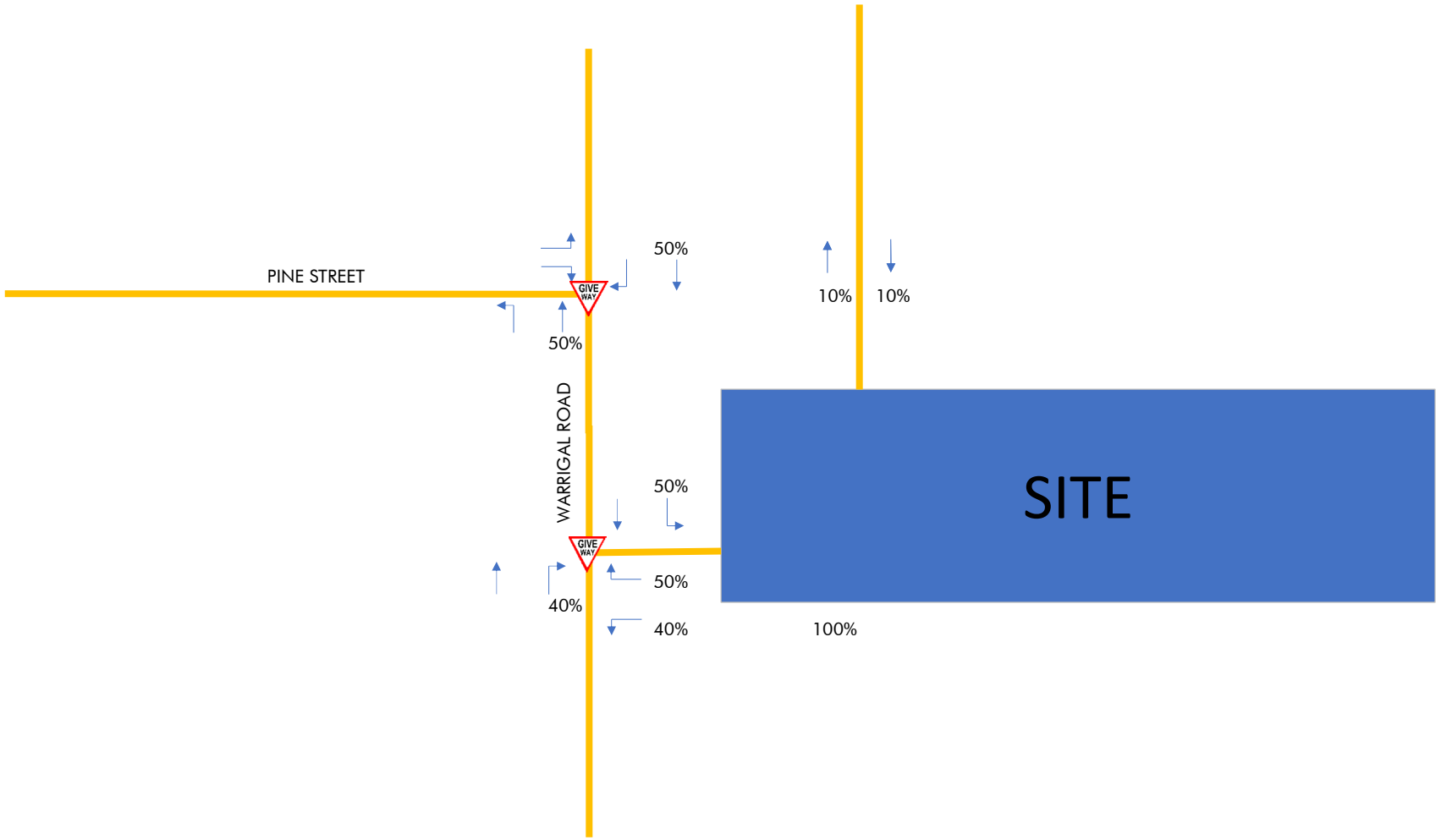
Client	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn
Date	26/05/2026	**Figure**	Figure 6
Job No.	26-570		

2044 Pre-Development Evening Peak Hour



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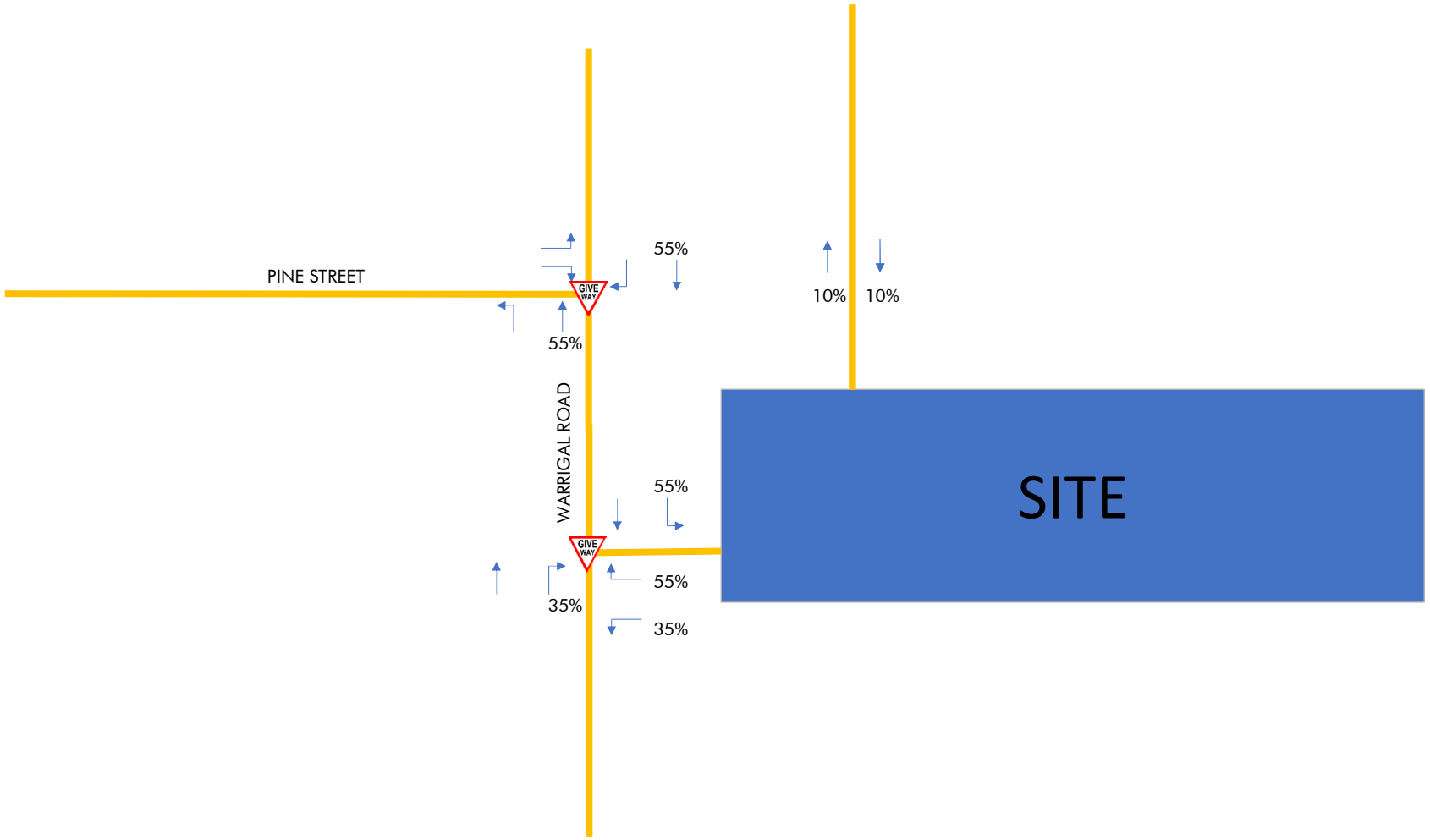
Client	LGR Developments Pty Ltd	Project	97 & 145 Warrigal Road, Runcorn
Date	26/05/2026	Figure	Figure 7
Job No.	26-570		

Development Traffic Distribution - Morning Peak Hour



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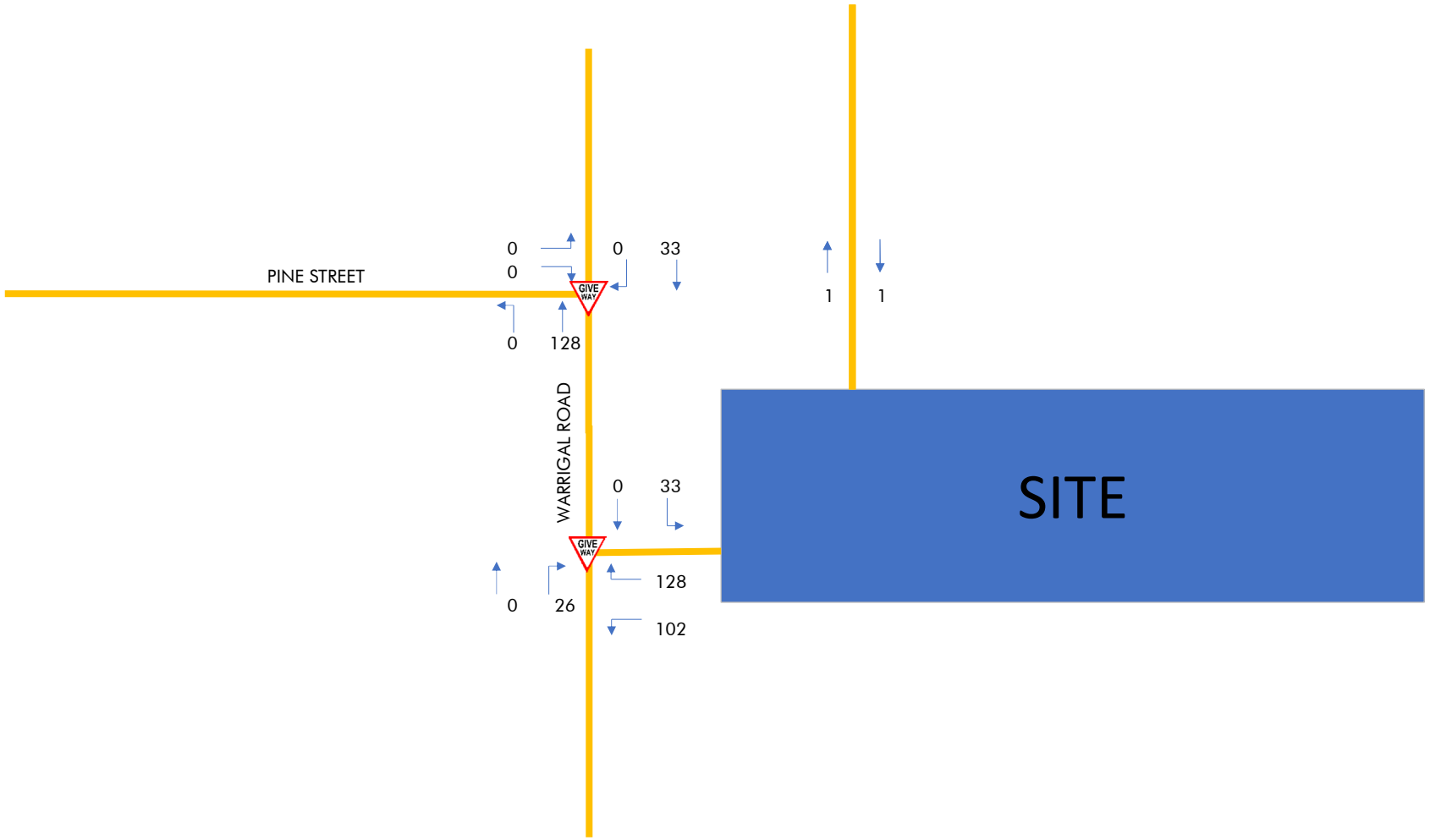
Client	LGR Developments Pty Ltd	Project	97 & 145 Warrigal Road, Runcorn
Date	26/05/2026	Figure	Figure 8
Job No.	26-570		

Development Traffic Distribution - Evening Peak Hour



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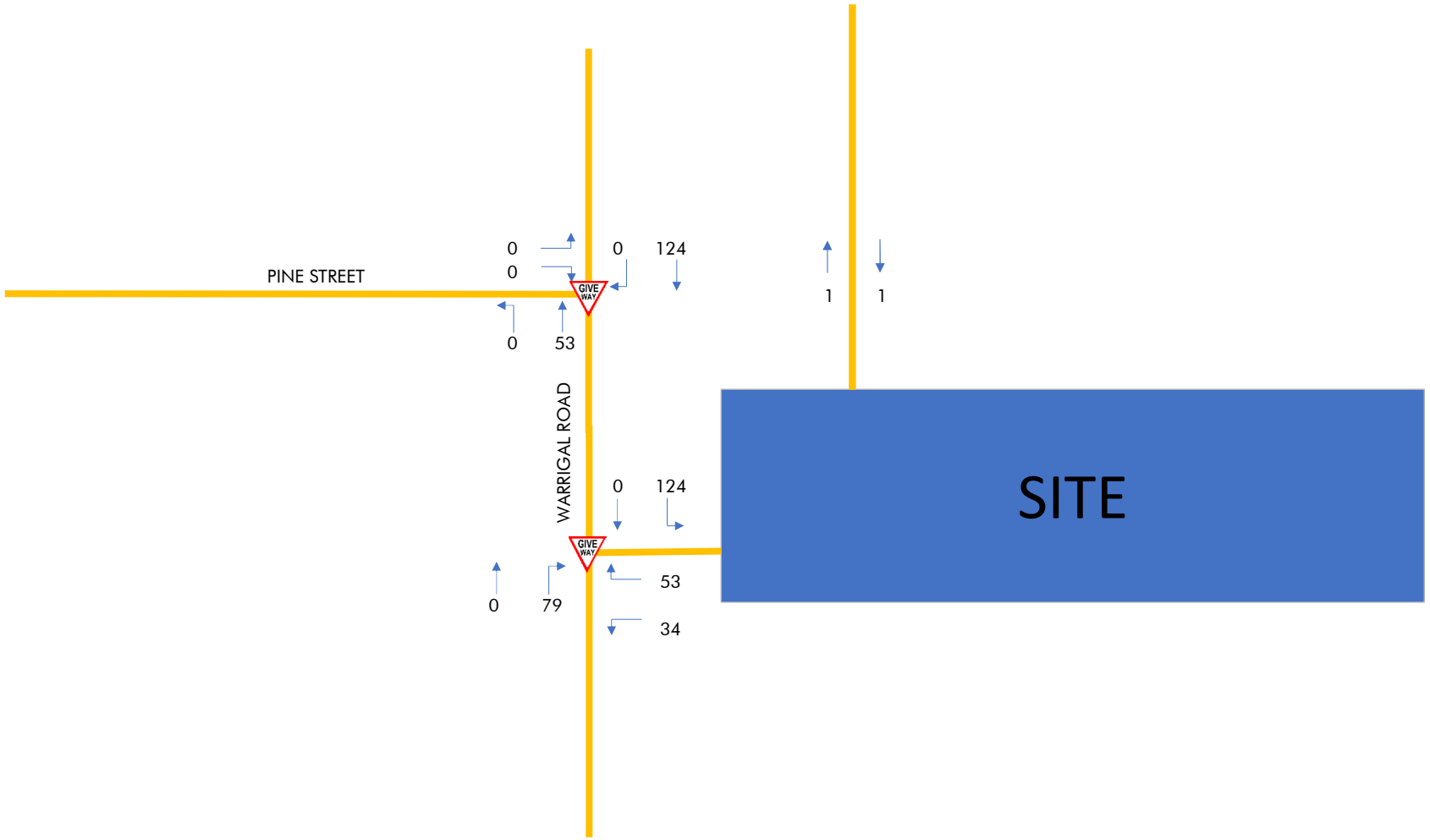
Client	LGR Developments Pty Ltd		**Project**	97 & 145 Warrigal Road, Runcorn	
Date	26/05/2026	**Figure**	Figure 9	**Job No.**	26-570

Development Traffic Generation - Morning Peak Hour



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PTT
ABN 96 067 593 962
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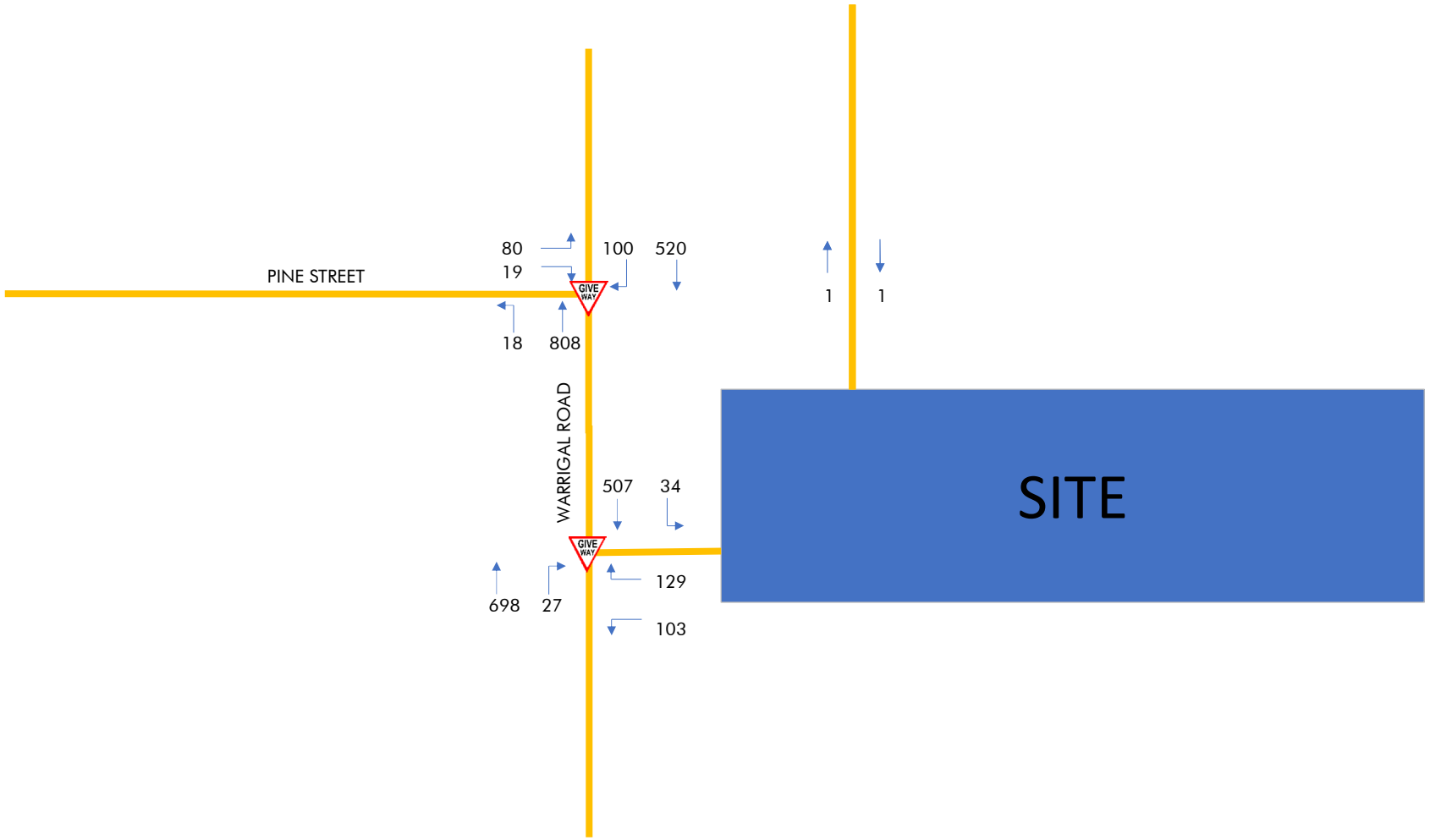
Level 2, 62 Astor Tce, Spring Hill QLD 4000

Client	LGR Developments Pty Ltd		**Project**	97 & 145 Warrigal Road, Runcorn	
Date	26/05/2026	**Figure**	Figure 10	**Job No.**	26-570

Development Traffic Generation - Evening Peak Hour



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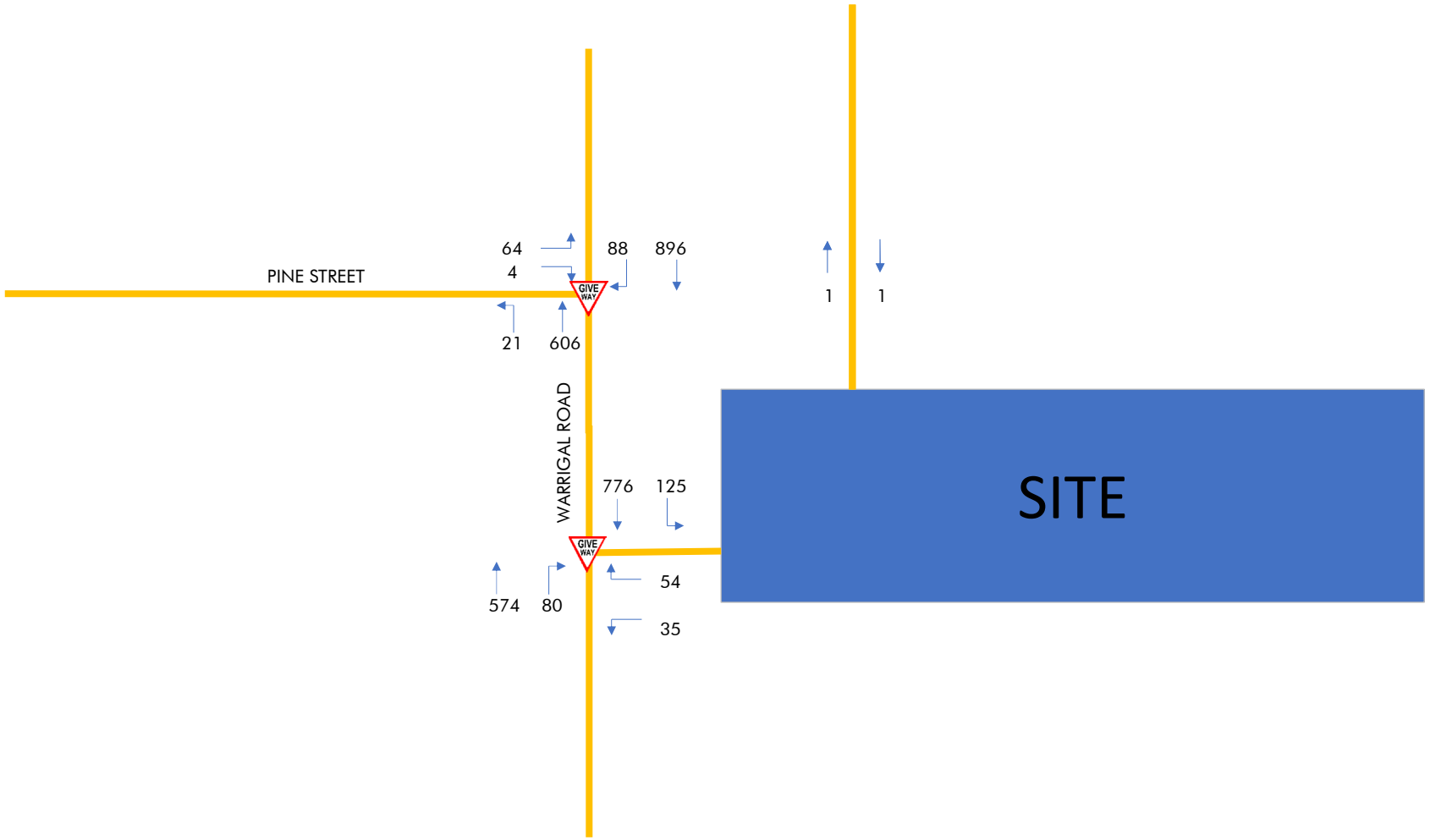
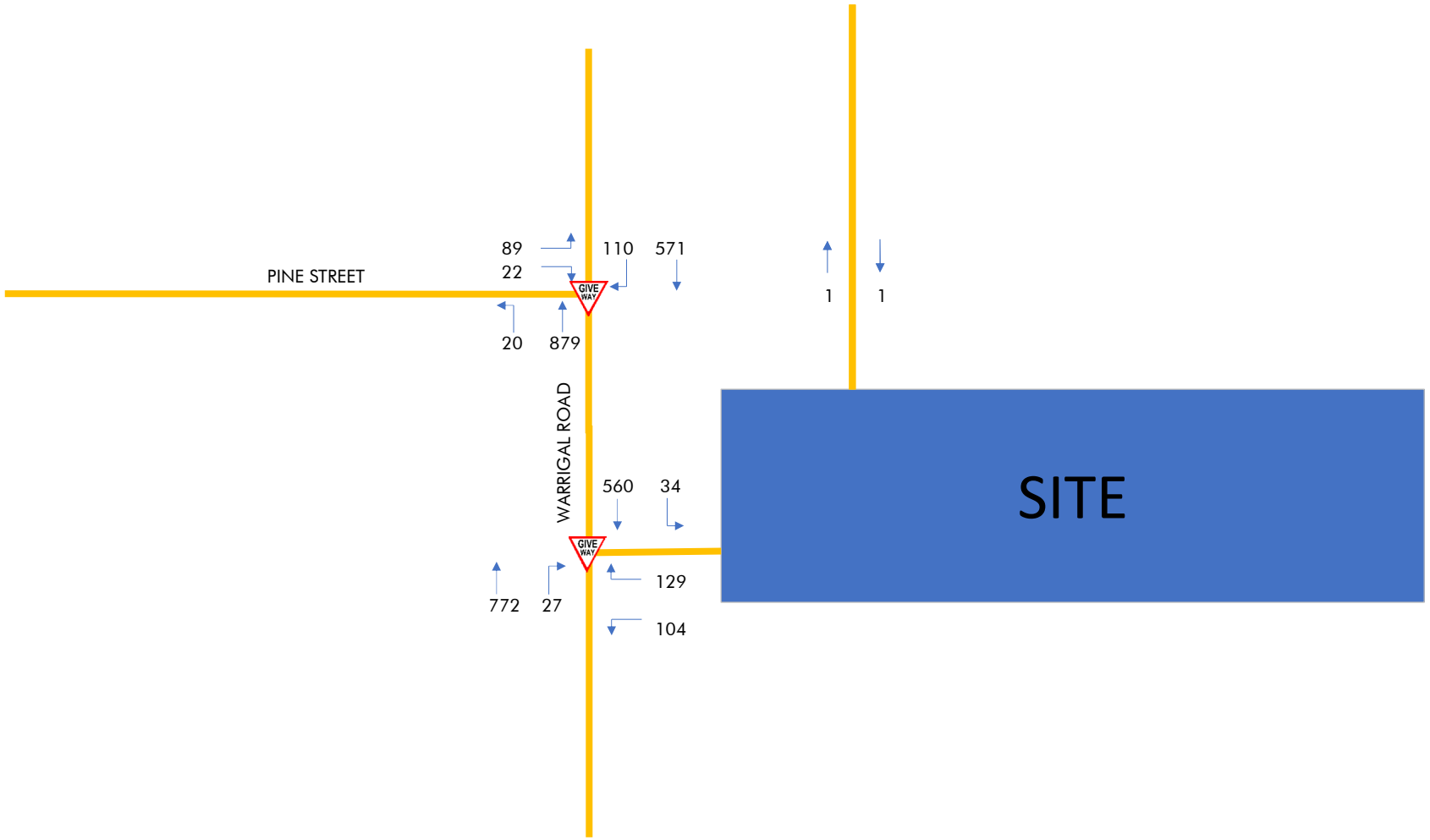
ABN 96 067 593 962
P 07 3839 6771 WWW.PTT.COM.AU
Level 2, 62 Astor Tce, Spring Hill QLD 4000

Client	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn
Date	26/05/2026	**Figure**	Figure 11
Job No.	26-570		

2034 Post-Development Morning Peak Hour



PTT TRAFFIC & TRANSPORT ENGINEERING	PTT ABN 96 067 593 962 P 07 3839 6771 WWW.PTT.COM.AU Level 2, 62 Astor Tce, Spring Hill QLD 4000	**Client**	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn
		Date	26/05/2026	**Figure**	Figure 12
		Job No.	26-570		
		2034 Post-Development Evening Peak Hour			



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ABN 96 067 593 962
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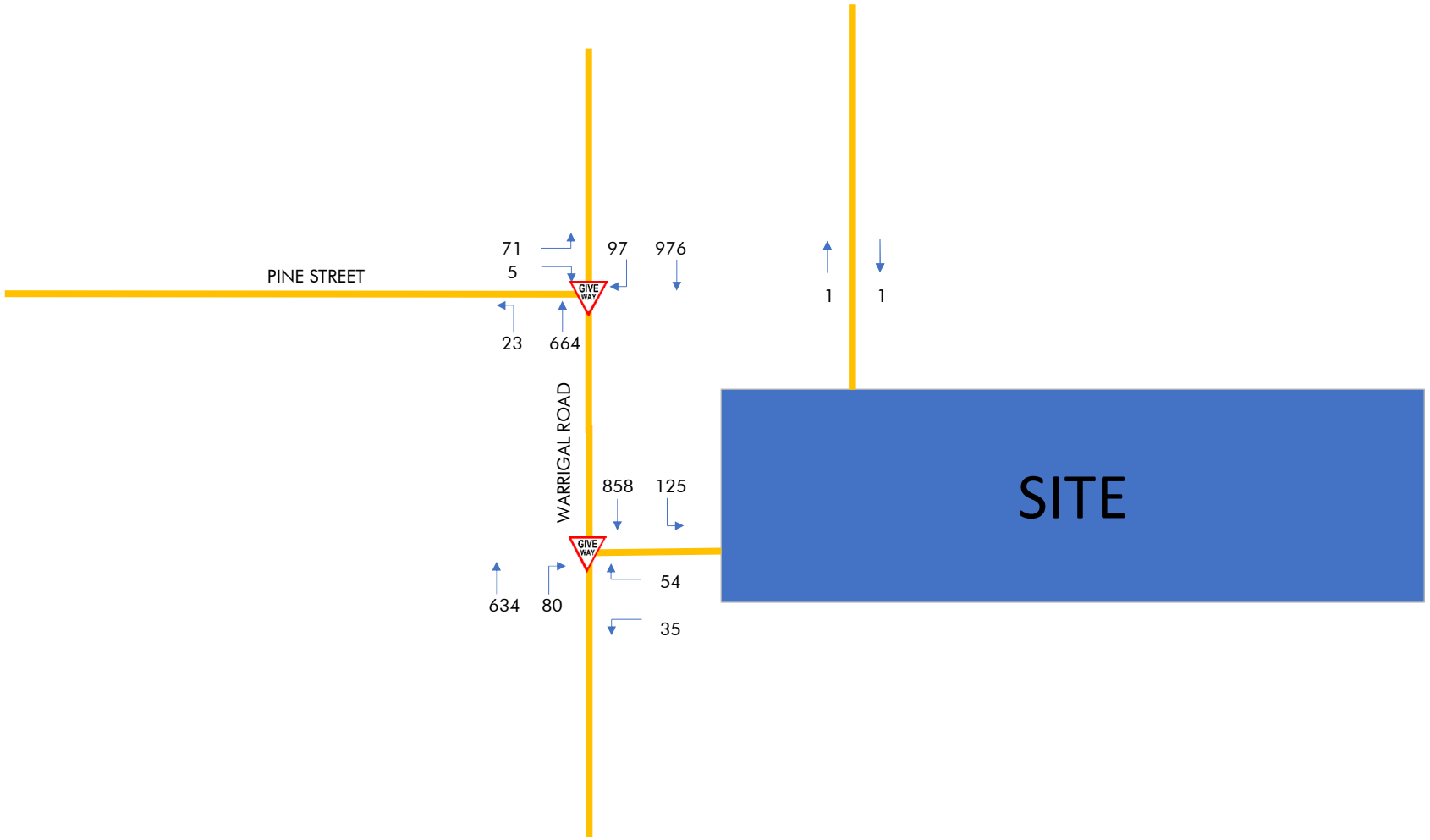
Level 2, 62 Astor Tce, Spring Hill QLD 4000

Client	LGR Developments Pty Ltd		**Project**	97 & 145 Warrigal Road, Runcorn	
Date	26/05/2026	**Figure**	Figure 13	**Job No.**	26-570

2044 Post-Development Morning Peak Hour



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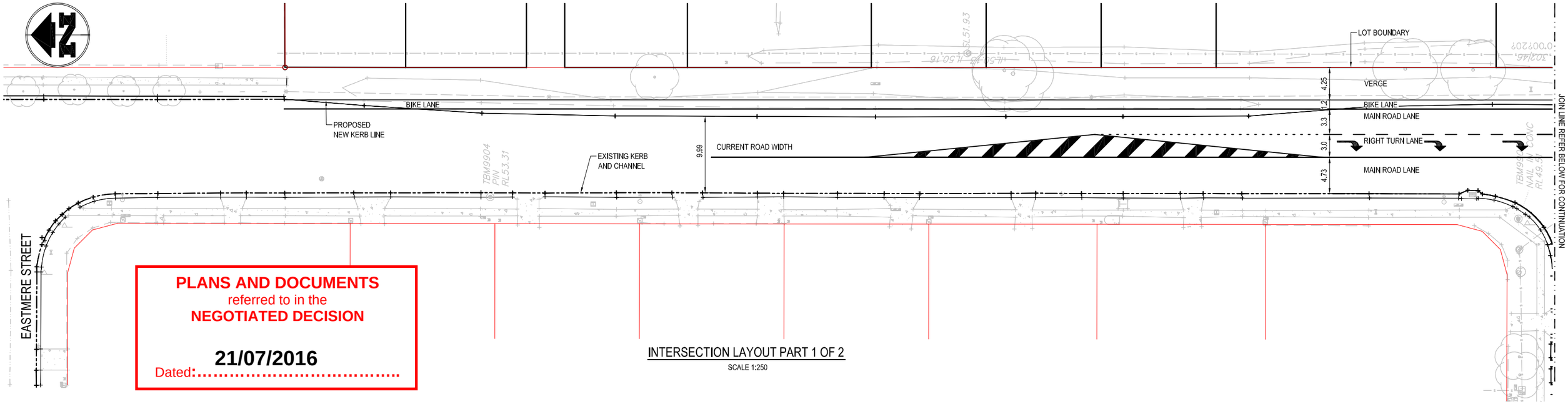
Client	LGR Developments Pty Ltd	**Project**	97 & 145 Warrigal Road, Runcorn
Date	26/05/2026	**Figure**	Figure 14
Job No.	26-570		

2044 Post-Development Evening Peak Hour

APPENDIX E
APPROVED DEVELOPMENT

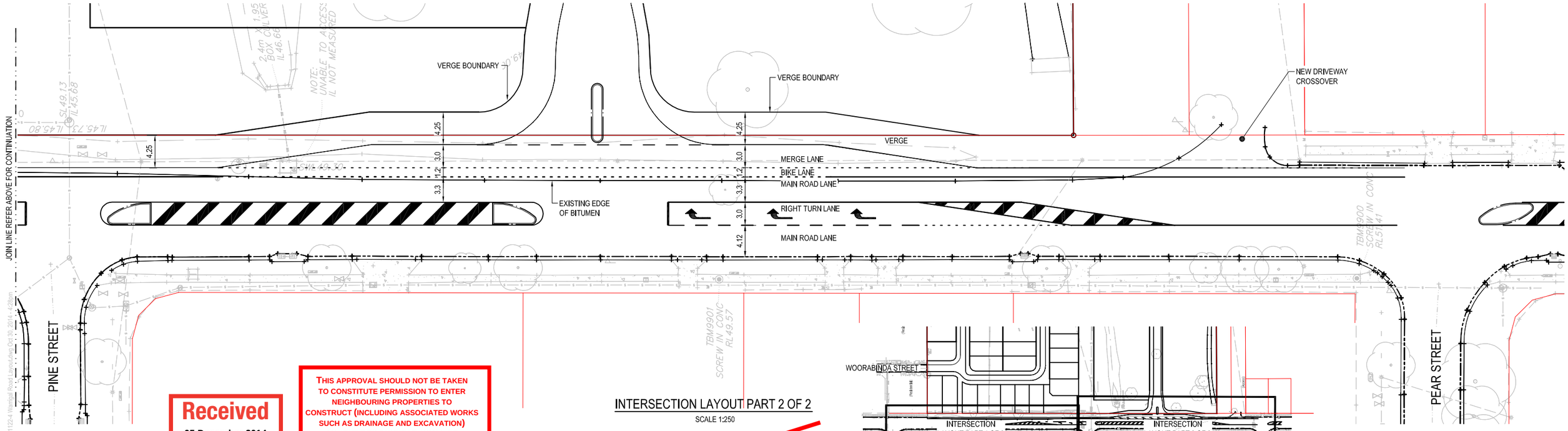


INTERSECTION LAYOUT PART 1 OF 2

SCALE 1:250

PLANS AND DOCUMENTS
referred to in the
NEGOTIATED DECISION

21/07/2016
Dated:.....



INTERSECTION LAYOUT PART 2 OF 2

SCALE 1:250

Received
05 December 2014
BCC DA

THIS APPROVAL SHOULD NOT BE TAKEN TO CONSTITUTE PERMISSION TO ENTER NEIGHBOURING PROPERTIES TO CONSTRUCT (INCLUDING ASSOCIATED WORKS SUCH AS DRAINAGE AND EXCAVATION) ANY BUILT TO BOUNDARY WALL OR FENCES. PERMISSION MUST BE OBTAINED FROM RELEVANT PROPERTY OWNERS.

APPROVED BY COUNCIL
Date: **16/06/2015**

WARRIGAL ROAD LAYOUT

SCALE 1:2000

SCALE 1:250 0 2 4 6 8 10m

NOT FOR CONSTRUCTION

BLIGH TANNER

LEVEL 9, 269 WICKHAM STREET, PO BOX 612
FORTITUDE VALLEY QLD 4006 AUSTRALIA
T 07 3251 8555 F 07 3251 8599

REV	DATE	DESCRIPTION	DESIGN	DRAWN	CHECKED	APPROVED	RPEQ
A	26-09-2014	CONCEPT ISSUE	JC	JC	CT		
B	30-10-2014	FOR INFORMATION	JC	PS	CT		

PROJECT: WARRIGAL FARMS	DRAWING TITLE: WARRIGAL ROAD INTERSECTION FUNCTIONAL LAYOUT	SCALES: 1:250 @ A1	
LOCATION: 97-145 WARRIGAL ROAD, RUNCORN, QLD, 4113	ARCHITECT:	JOB NO: 2010.259.1	
CLIENT: WARRIGAL FARMS	ASSOCIATE CONSULTANT:	DRAWING NO: **SK1011**	REVISION: **B**

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