

33°55'58.6"S 150°53'01.5"E

CONSULTANT ADVICE NOTICE

To: Ashleigh Keyser
 Company: **EMKC**
 Email: ashleigh.keyser@em-kc.com
 PROJECT: 63 Jedda Road, Prestons
 Subject: **Traffic Volume Summary & Intersection Operation**

From: Sam Mulligan
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 Email: sam@impactaustralia.com.au
 Reference: IMP190624CAN01F01

Hi Ashleigh,

Further to previous correspondence, we have received the traffic survey data at key intersections in the vicinity of the site, in addition to the parking accumulation survey data undertaken at the existing site access points (undertaken by recording all inbound and outbound vehicle movements at all site access points).

The data has been analysed to determine the road network peaks and relevant traffic movements into and out of the site during these periods, in addition to the site generated peak periods, which can be utilised to estimate future traffic and parking characteristics for the site expansion.

Figure 1 and Figure 2 summarise the traffic volumes for the AM and PM peak periods, respectively.

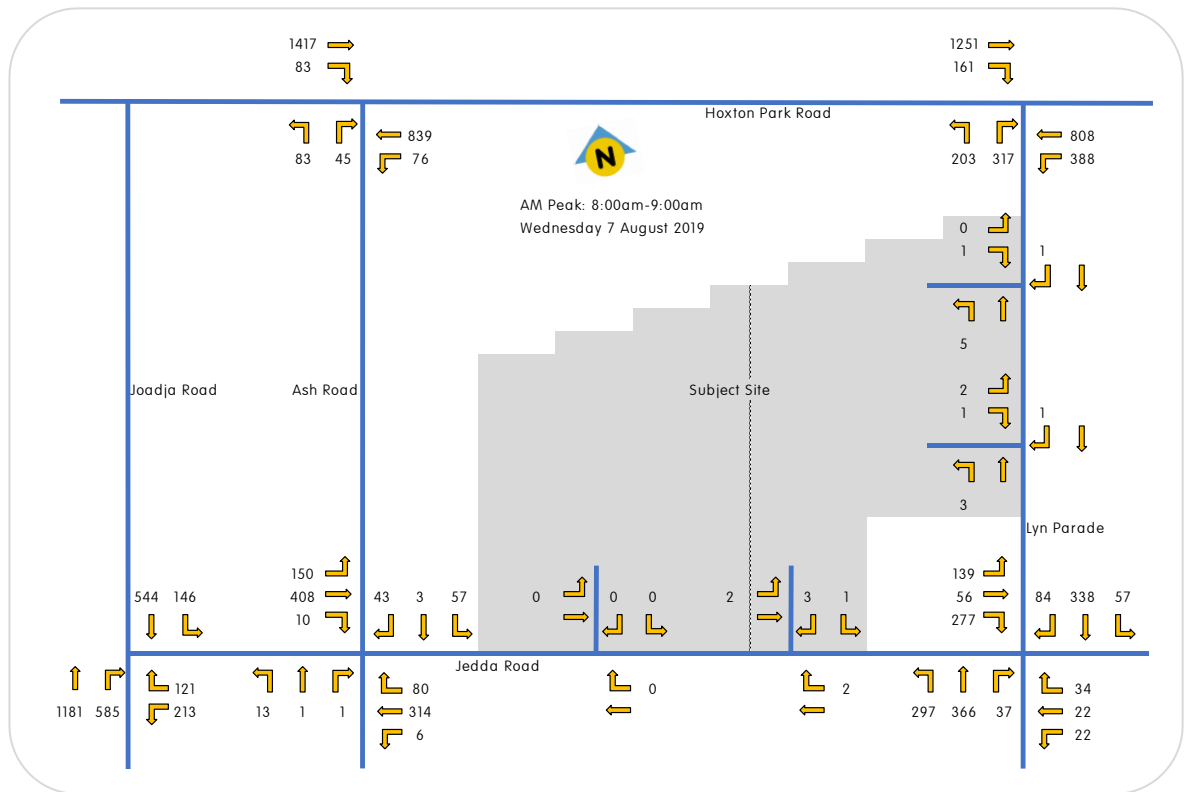


Figure 1 AM Existing Traffic Volume Summary



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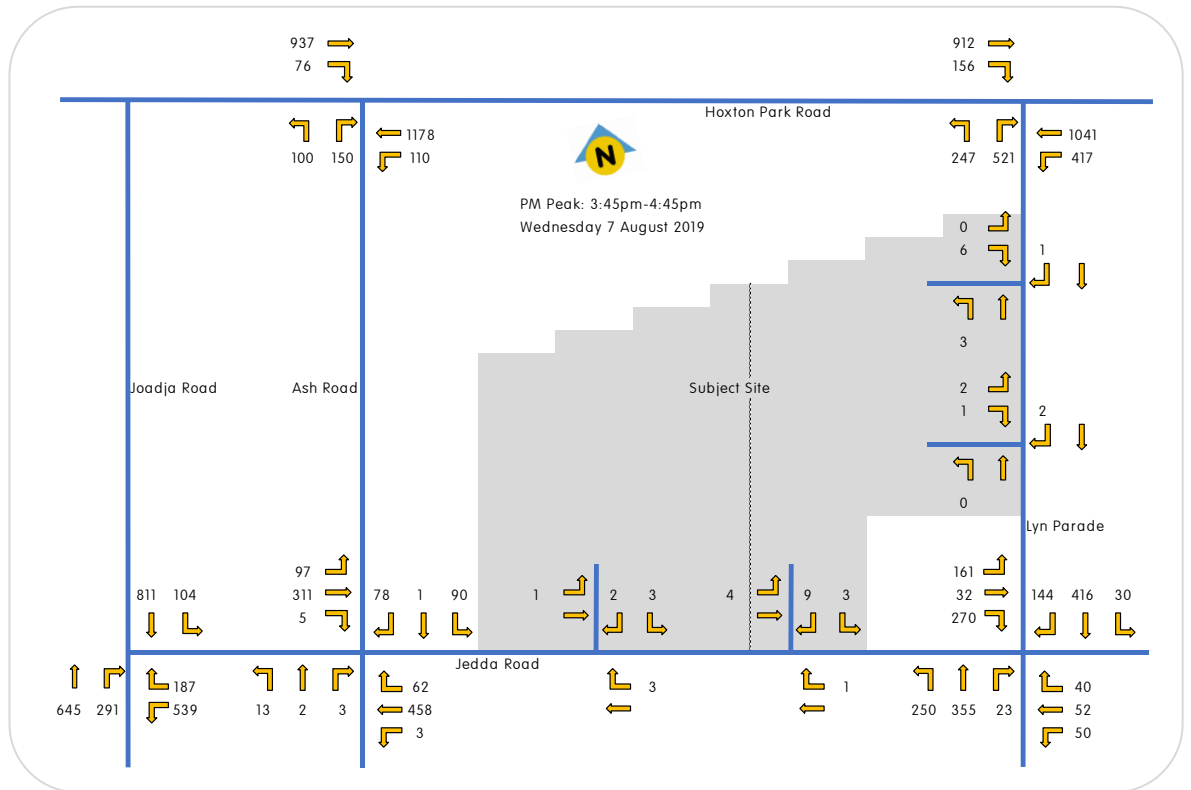


Figure 2 PM Existing Traffic Volume Summary

Existing Intersection Analysis

The operation of the surrounding intersections was analysed using SIDRA Intersection 8. Critical outputs of this network analysis software are:

Degree of Saturation (D.O.S.) - Defined as the ratio of the volume of traffic observed making a movement compared to the maximum capacity for that movement. These are rated as follows:

D.O.S.	Rating
Up to 0.6	Excellent
0.6 to 0.7	Very Good
0.7 to 0.8	Good
0.8 to 0.9	Fair
0.9 to 1.0	Poor
Above 1.0	Very Poor

Some critical movements at an intersection can operate in the range of 0.9 to 1.0 during the high peak periods, reflecting actual conditions in a significant proportion of suburban signalised intersections.



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95th Percentile (95%ile) Queue - Defined as the maximum queue length, in metres, that can be expected in 95% of observed queue lengths in the peak hour.

Average Delay - Defined as the delay time, in seconds, which can be expected over all vehicles making a movement in the peak hour.

Joadja Road / Jedda Road

The analysis of the Joadja Road / Jedda Road intersection is based on the concept functional layout shown as modelled in Figure 3.

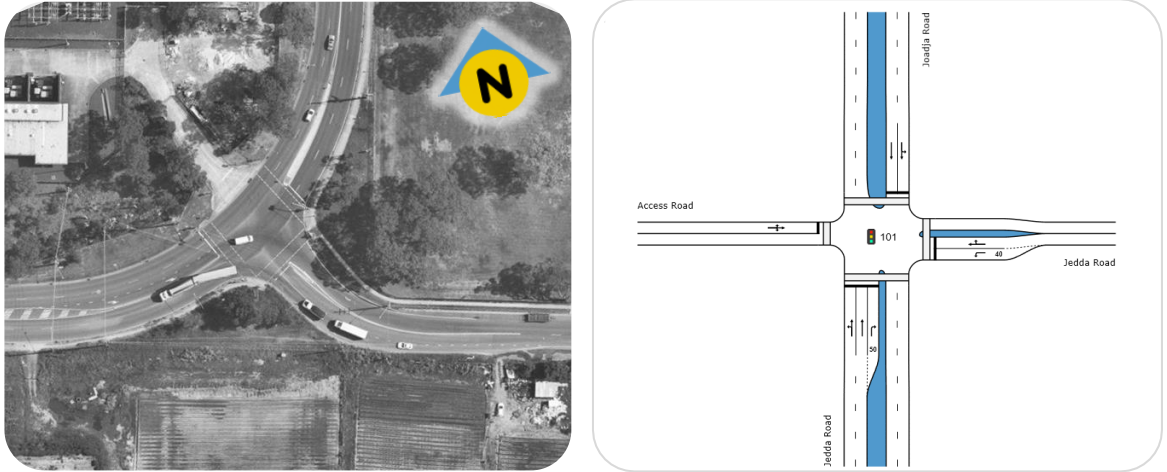


Figure 3 Intersection Layout

The results of analysis are summarised in Table 1.

Table 1 Summary - SIDRA Intersection 8 Analysis - Joadja Road / Jedda Road

	Approach	Degree of Saturation	95 th ile Queue	Average Delay
AM Peak	Jedda Road (sw)	0.79	160 metres	12 seconds
	Jedda Road (e)	0.60	54 metres	30 seconds
	Joadja Road (n)	0.86	170 metres	59 seconds
PM Peak	Jedda Road (sw)	0.52	61 metres	14 seconds
	Jedda Road (e)	0.86	158 metres	34 seconds
	Joadja Road (n)	0.73	25 metres	37 seconds

Note: For the purpose of this assessment, the west approach (private site access) has been excluded from the results.

The above results reveal that the Joadja Road / Jedda Road intersection currently operates within acceptable parameters.

Assumptions: South approach right turn movement has been modelled as a filtered turn during northbound and southbound through movements phase.

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Ash Road / Jemma Road

The analysis of the Ash Road / Jemma Road intersection is based on the concept functional layout shown as modelled in Figure 4.

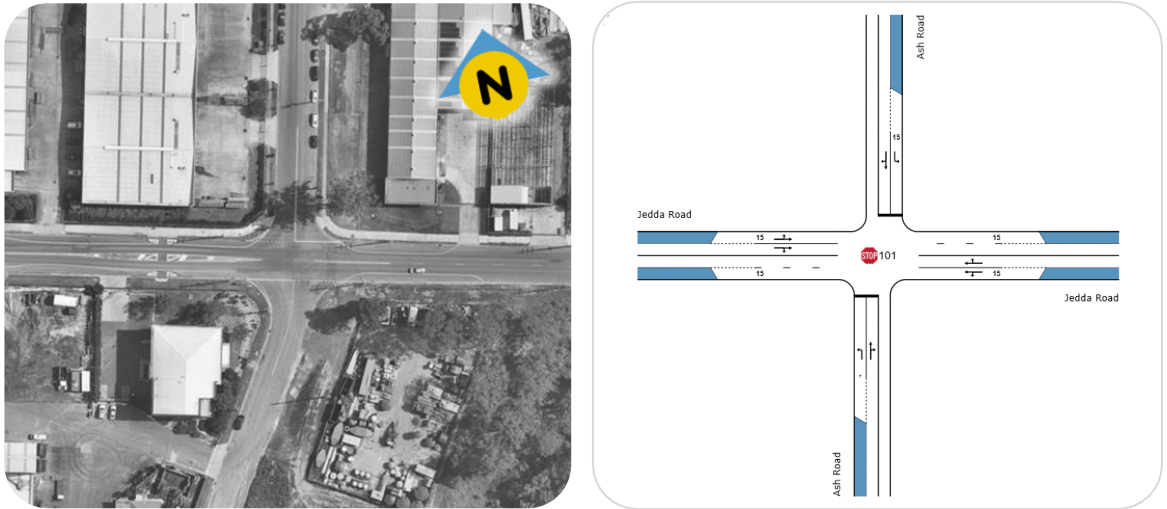


Figure 4 Intersection Layout

The results of analysis are summarised in Table 2.

Table 2 Summary - SIDRA Intersection 8 Analysis - Ash Road / Jemma Road

	Approach	Degree of Saturation	95 th ile Queue	Average Delay
AM Peak	Ash Road (s)	0.01	1 metre	11 seconds
	Jemma Road (e)	0.25	10 metres	3 seconds
	Ash Road (n)	0.33	9 metres	21 seconds
	Jemma Road (w)	0.24	1 metre	2 seconds
PM Peak	Ash Road (s)	0.04	1 metre	15 seconds
	Jemma Road (e)	0.28	7 metres	2 seconds
	Ash Road (n)	0.57	18 metres	26 seconds
	Jemma Road (w)	0.18	1 metre	2 seconds

The above results reveal that the Ash Road / Jemma Road intersection currently operates within acceptable parameters.

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Lyn Parade / Jemma Road

The analysis of the Lyn Parade / Jemma Road intersection is based on the concept functional layout shown as modelled in Figure 5.

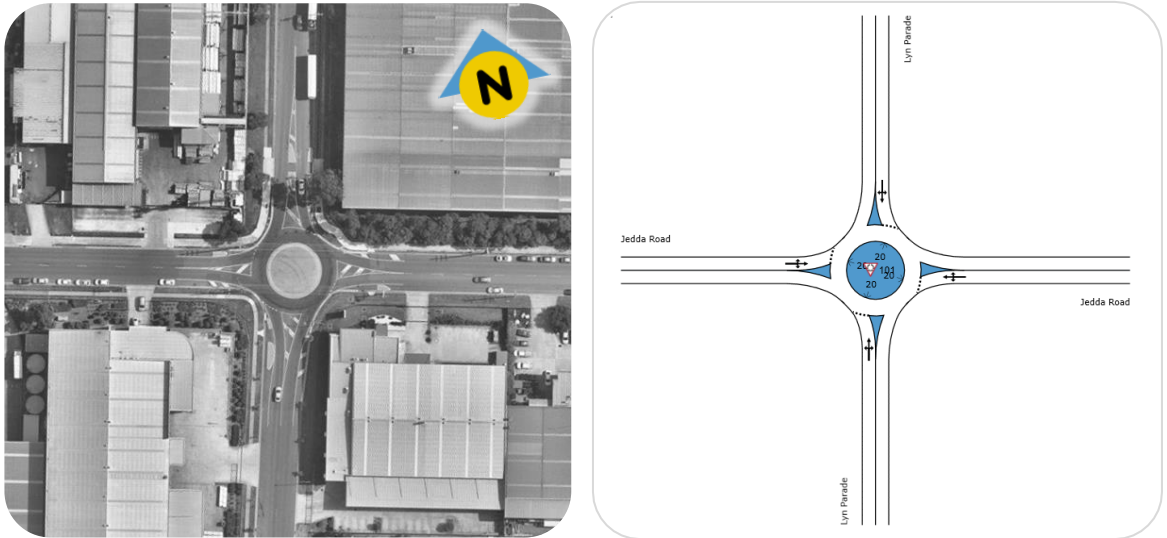


Figure 5 Intersection Layout

The results of analysis are summarised in Table 3.

Table 3 Summary - SIDRA Intersection 8 Analysis - Lyn Parade / Jemma Road

	Approach	Degree of Saturation	95 th ile Queue	Average Delay
AM Peak	Lyn Parade (s)	0.58	38 metres	6 seconds
	Jemma Road (e)	0.12	5 metres	11 seconds
	Lyn Parade (n)	0.54	34 metres	8 seconds
	Jemma Road (w)	0.55	35 metres	11 seconds
PM Peak	Lyn Parade (s)	0.59	37 metres	6 seconds
	Jemma Road (e)	0.26	13 metres	12 seconds
	Lyn Parade (n)	0.62	46 metres	9 seconds
	Jemma Road (w)	0.54	34 metres	11 seconds

The above results reveal that the Lyn Parade / Jemma Road intersection currently operates within acceptable parameters.

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Hoxton Park Road / Lyn Parade

The analysis of the Hoxton Park Road / Lyn Parade intersection is based on the concept functional layout shown as modelled in Figure 6.



Figure 6 Intersection Layout

The results of analysis are summarised in Table 4.

Table 4 Summary - SIDRA Intersection 8 Analysis - Hoxton Park Road / Lyn Parade

	Approach	Degree of Saturation	95 th ile Queue	Average Delay
AM Peak	Lyn Parade (s)	0.59	84 metres	37 seconds
	Hoxton Park Road (e)	0.60	106 metres	25 seconds
	Hoxton Park Road (w)	0.57	116 metres	14 seconds
PM Peak	Lyn Parade (s)	0.74	126 metres	37 seconds
	Hoxton Park Road (e)	0.77	165 metres	29 seconds
	Hoxton Park Road (w)	0.75	85 metres	17 seconds

The above results reveal that the Hoxton Park Road / Lyn Parade intersection currently operates within acceptable parameters.

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Hoxton Park Road / Ash Road

The analysis of the Hoxton Park Road / Ash Road intersection is based on the concept functional layout shown as modelled in Figure 7.

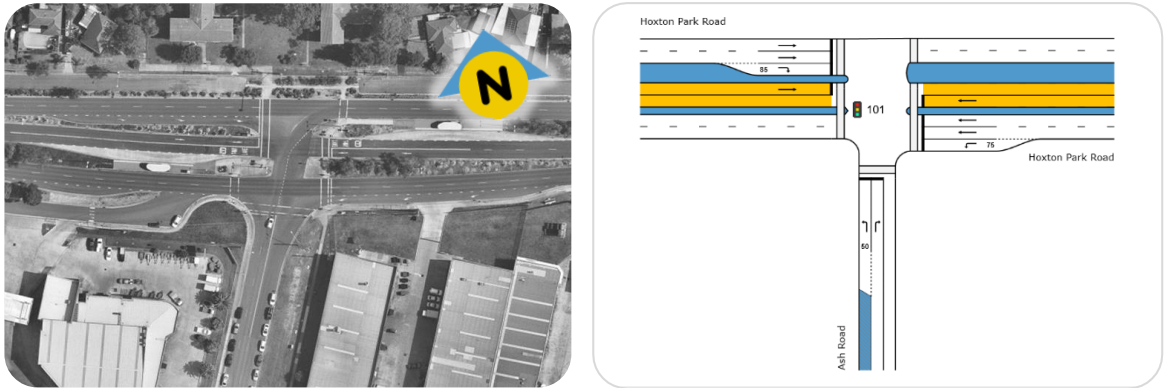


Figure 7 Intersection Layout

The results of analysis are summarised in Table 5.

Table 5 Summary - SIDRA Intersection 8 Analysis - Hoxton Park Road / Ash Road

	Approach	Degree of Saturation	95 th ile Queue	Average Delay
AM Peak	Ash Road (s)	0.40	22 metres	41 seconds
	Hoxton Park Road (e)	0.39	74 metres	11 seconds
	Hoxton Park Road (w)	0.50	85 metres	6 seconds
PM Peak	Ash Road (s)	0.61	50 metres	41 seconds
	Hoxton Park Road (e)	0.59	129 metres	14 seconds
	Hoxton Park Road (w)	0.57	62 metres	9 seconds

The above results reveal that the Hoxton Park Road / Ash Road intersection currently operates within acceptable parameters.

Site Characteristics

The parking accumulation surveys identified the following:

Passenger Vehicles

- Peak passenger vehicle parking demands were observed to occur at 1:00pm where a total of **41 spaces** were occupied equating to a peak parking demand of **0.13 spaces per 100sqm**;
- Passenger vehicles equated to a traffic generation rate of **0.03 movements per 100sqm**, during the AM peak and **0.06 movements per 100sqm**, during the PM peak. A passenger vehicle site peak of **0.10 movements per 100sqm**, was observed to occur between 12:30pm - 1:30pm.

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Heavy Vehicles

- Peak on-site truck occupancy was observed to also occur at 1:00pm where a peak total of **29 trucks** were observed on-site equating to a peak parking demand of **0.09 trucks per 100sqm**;
- Heavy vehicles equated to a traffic generation rate of **0.04 movements per 100sqm**, during the AM peak and **0.07 movements per 100sqm**, during the PM peak. A site peak of **0.13 movements per 100sqm**, was observed to occur between 12:30pm - 1:30pm.

The above rates are based on the assumption that 32,000sqm (approx.) of cold storage warehousing floor area is currently provided at the facility.

The proposal results in the demolition of 13,000sqm (approx.) of existing floor area and the construction of new cold storage warehousing floor area and ancillary uses to increase the total on-site building floor area to 52,000sqm (approx.).

On the basis of the above, the following additional passenger vehicle and heavy vehicle movements are anticipated assuming linear growth of the business:

Passenger Vehicles

- 4 inbound and 2 outbound vehicle movements in the AM peak;
- 4 inbound and 8 outbound vehicle movements in the PM peak.

Heavy Vehicles

- 4 inbound and 3 outbound vehicle movements in the AM peak;
- 6 inbound and 9 outbound vehicle movements in the PM peak.

Site Access Intersection Operation

The operation of the two site access intersections was analysed using SIDRA Intersection 8.

The analysis of each site to Jeddah Road is based on the concept functional layout shown as modelled in Figure 8.

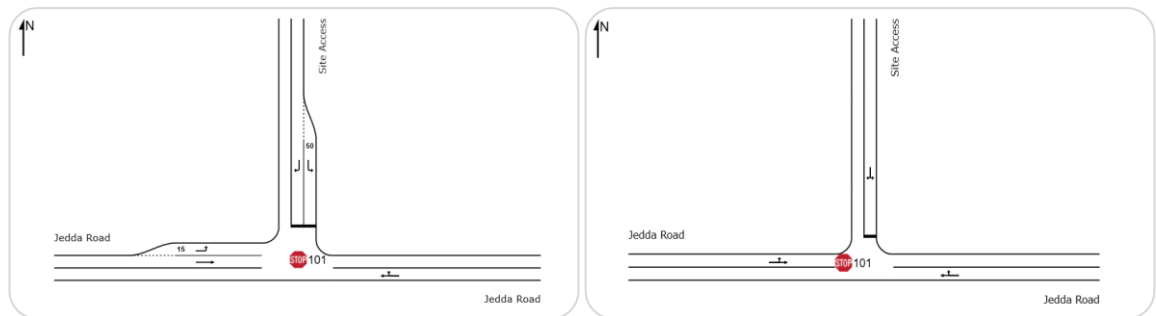


Figure 8 Intersection Layout

The results of analysis are summarised in Table 6.

For the purpose of the assessment, gap acceptance parameters have been factored up by 20% at the heavy vehicle access location to allow for slower moving heavy vehicles accepting gaps within the traffic flows along Jeddah Road.

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Table 6 Summary - SIDRA Intersection 8 Analysis - Site Access Intersections / Jedda Parade

	Approach	Degree of Saturation	95 th ile Queue	Average Delay
Car Park Access				
AM Peak	Jedda Road (e)	0.23	1 metre	1 second
	Site Access (n)	0.01	1 metre	13 seconds
	Jedda Road (w)	0.26	N/A	N/A
PM Peak	Jedda Road (e)	0.25	1 metre	1 seconds
	Site Access (n)	0.04	1 metre	13 seconds
	Jedda Road (w)	0.23	N/A	N/A
Heavy Vehicle Access				
AM Peak	Jedda Road (e)	0.28	9 metres	37 seconds
	Site Access (n)	0.03	1 metre	25 seconds
	Jedda Road (w)	0.26	N/A	N/A
PM Peak	Jedda Road (e)	0.30	8 metres	2 seconds
	Site Access (n)	0.11	4 metres	33 seconds
	Jedda Road (w)	0.23	N/A	N/A

The above results reveal that each site access connection to Jedda Road will operate within acceptable parameters.

The minor increase in site generated traffic volumes to surrounding intersections will have a negligible effect on intersection operation and is considered satisfactory.

Regards,

Sam

