

16 July 2021

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**Re: Luddenham Resource Recovery Facility (SSD-10446) - Response to request for additional information**

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Dear Will,

This letter provides a response to the matters raised in the letter from Transport for NSW (TfNSW) (dated 25 May 2021) to the Department of Planning, Industry and Environment (DPIE) in relation to the Luddenham Advanced Resource Recovery Centre (SSD-10446) (the project). The matters raised in the TfNSW letter are provided in the grey text boxes with the responses following.

## 1 Future traffic distribution at Elizabeth Drive/Adams Road intersection

1. It is understood that the Elizabeth Drive and Adams Road intersection will be upgraded allowing only left-in movements from Elizabeth Drive into Adams Road. The exiting vehicles from the proposed Resource Recovery Centre will be distributed to the broader road network via The Northern Road and Adams Road intersection. As such, it is requested that The Northern Road / Adams Road intersection should be assessed with this future traffic distribution in the traffic impact assessment and the SIDRA modelling.

Further clarification has been sought from TfNSW regarding the above matter. Based on the outcomes of a telephone conversation with Felix Liu on the 4 June 2021 and a follow-up email dated 9 June 2021 from EMM Consulting Pty Limited (EMM)'s Associate Traffic Engineer Abdullah Uddin (refer Appendix A), it is understood TfNSW has prepared a preliminary concept design for a new Elizabeth Drive/Adams Road intersection as part of wider changes to Elizabeth Drive that are part of the broader road network upgrades required to support the development of the Western Sydney Aerotropolis. This preliminary concept design proposes to remove all turn movements for all road users at the Elizabeth Drive/Adams Road intersection, with the exception of the left in movement from Elizabeth Drive into Adams Road.

Notwithstanding, that any future upgrade of the Elizabeth Drive/Adams Road intersection would be subject to separate environmental assessment by TfNSW, sensitivity analysis has been carried out to determine the potential impact of the project on The Northern Road/Adams Road intersection should TfNSW's preliminary concept design be progressed to construction.

The *Addendum Traffic Impact Assessment* (Addendum TIA) (EMM 2021) assessed two scenarios, 2024 and 2029. Further future scenarios were not modelled due to the uncertainties in the future road network upgrades. However, further to TfNSW's written advice to DPIE, TfNSW verbally requested EMM model the proposed traffic distribution as per the existing road network, as outlined in Section 2.3 of the Addendum TIA, for 2034.

Therefore, the following additional SIDRA scenarios have been modelled to account for the potential TfNSW future upgrades:

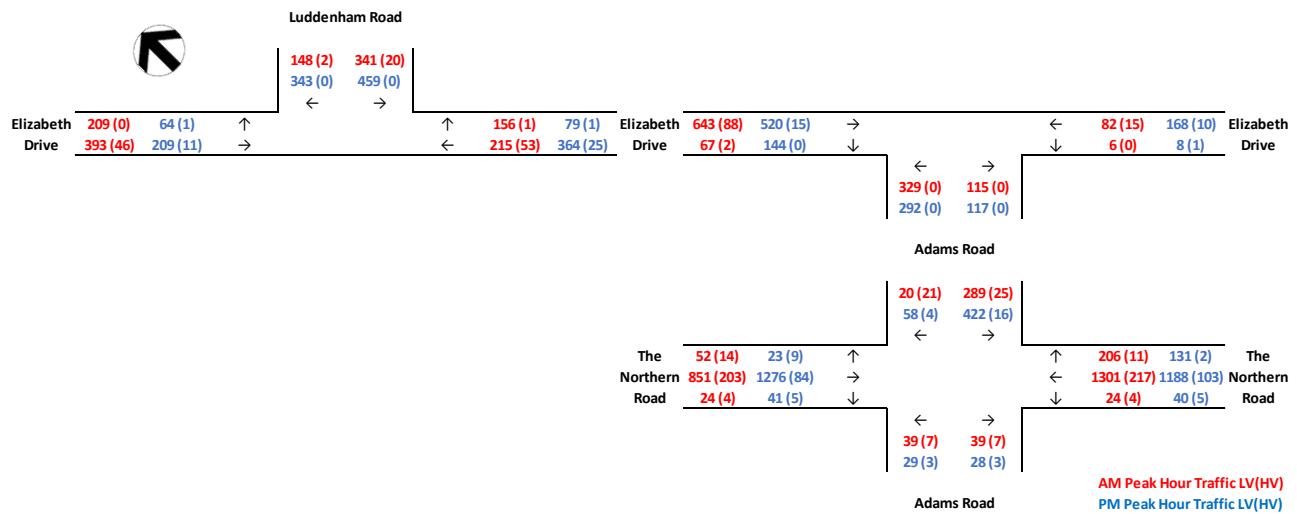
- **2029:** all project traffic via The Northern Road, except the left turn movement from Elizabeth Drive to Adams Road using the left turn deceleration lane; and
- **2034:** all project traffic via The Northern Road, except the left turn movement from Elizabeth Drive to Adams Road using the left turn deceleration lane.

The following sections outline the baseline traffic volumes, the cumulative traffic volumes and the results of the SIDRA analyses.

## 1.1 Traffic generation

### 1.1.1 Baseline traffic volumes

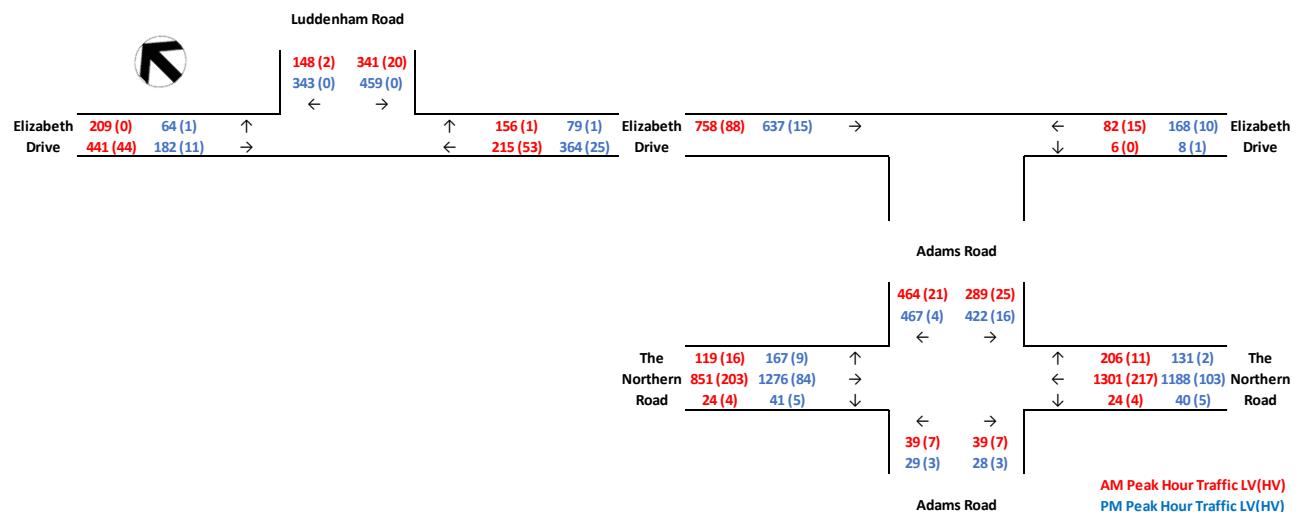
As per the Addendum TIA, the TfNSW Strategic Travel Forecasting Model (STFM) has been used to forecast the future traffic in 2029 and 2034. The 2029 and 2034 peak hourly baseline traffic volumes are presented in Figure 1.1 and Figure 1.2 respectively.



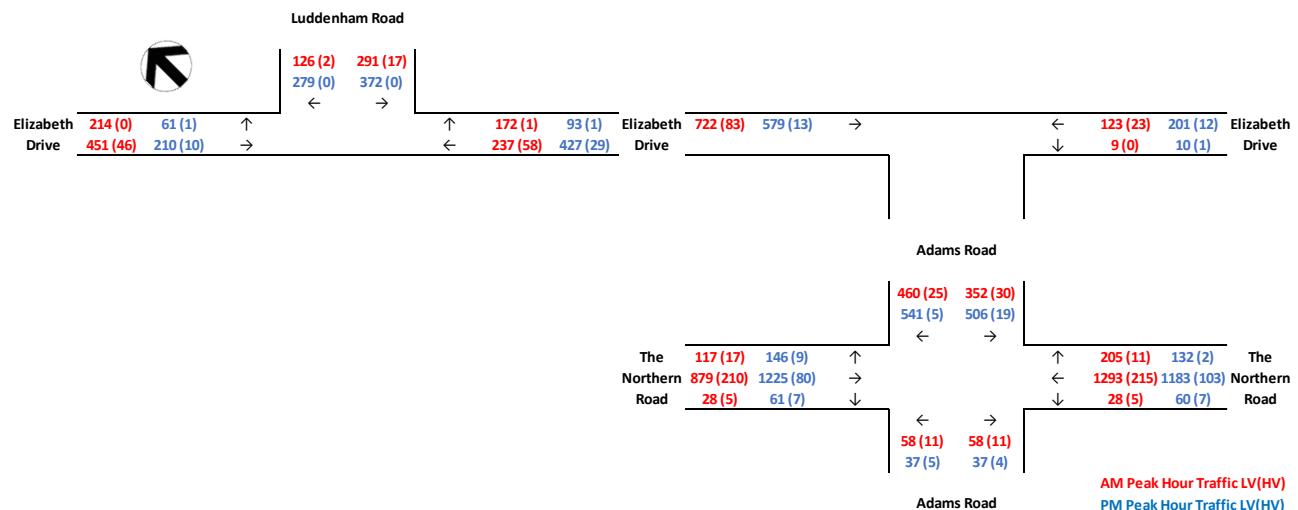
As discussed above, the TfNSW preliminary concept design for the new Elizabeth Drive/Adams Road intersection proposes to restrict all turning movements except for the left turn from Elizabeth Drive into Adams Road. Therefore, the following rerouting has been assumed for baseline (non-project) traffic:

- the right turn traffic from Elizabeth Drive into Adams Road will use The Northern Road/Adams Road intersection to access Adams Road;
- the left turn traffic from Adams Road into Elizabeth Drive will use The Northern Road/Adams Road intersection to travel to the west; and
- the right turn traffic from Adams Road into Elizabeth Drive will travel south on Adams Road and turn right into The Northern Road and turn right again at The Northern Road/Elizabeth Drive intersection into Elizabeth Drive to travel east.

The 2029 and 2034 peak hourly baseline traffic volumes and distribution assuming TfNSW's preliminary concept design is progressed to construction are presented in Figure 1.3 and Figure 1.4 respectively.



**Figure 1.3** 2029 baseline traffic volumes (with restriction of all turn movements except left into Adams Road at Elizabeth Drive/Adams Road intersection)

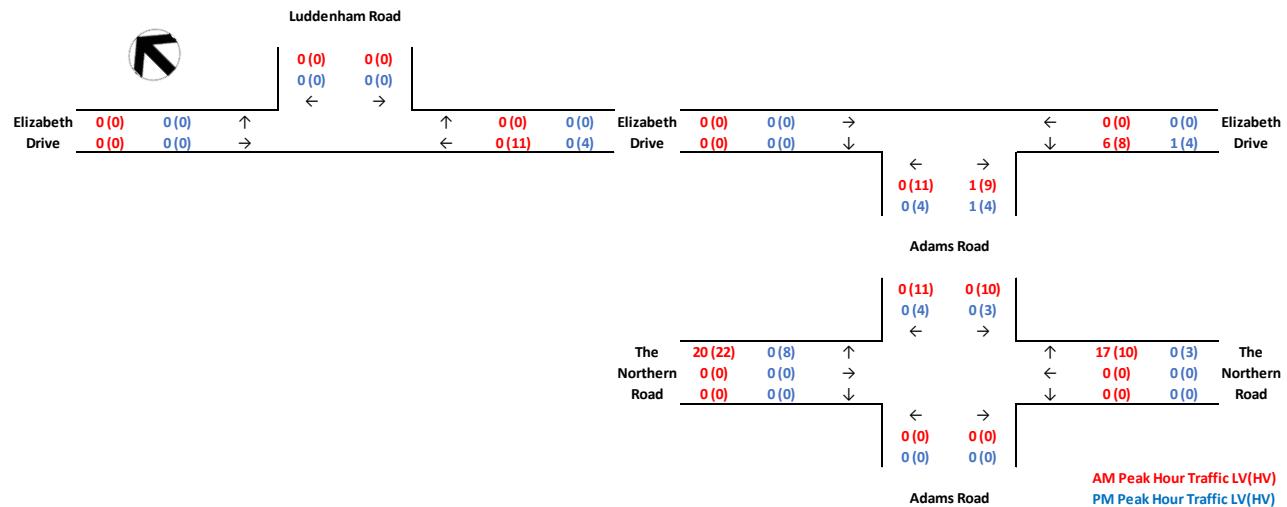


**Figure 1.4** 2034 baseline traffic volumes (with restriction of all turn movements except left into Adams Road at Elizabeth Drive/Adams Road intersection)

## 1.1.2 Site traffic volumes

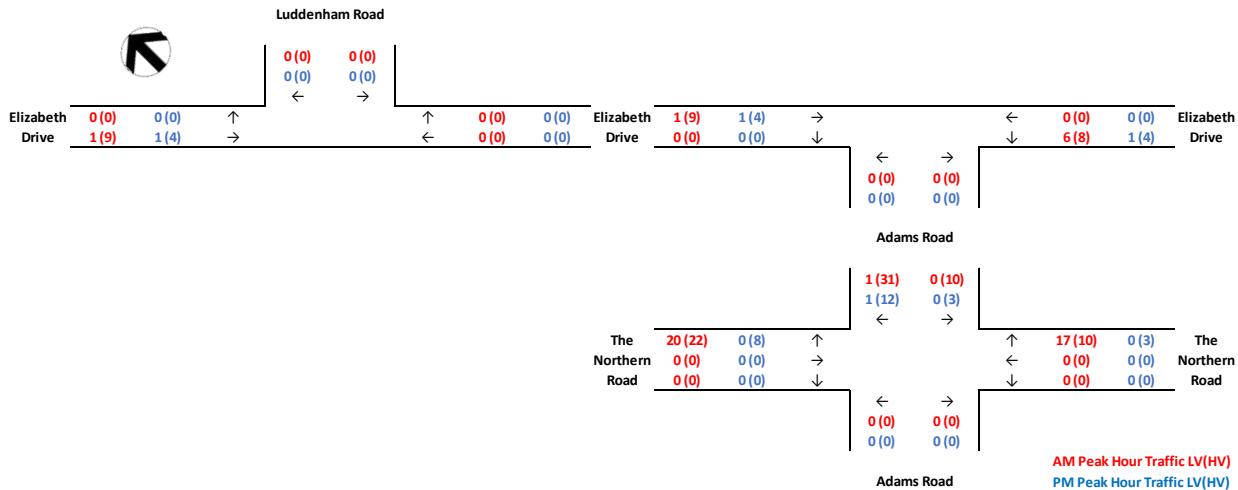
The Addendum TIA modelled site traffic from all development on the subject property (275 Adams Road Luddenham) including project traffic and traffic associated with approved quarry extraction and subsequent quarry infilling (direct import of part of the infill material which will be subject to a future development application). The site traffic volume assumes that extraction/infill material importation and the ARRC are operating at full capacity in all years.

The 2029 site traffic volumes (as outlined in Table 2.2 of the Addendum TIA) and distribution for the existing road network is presented in Figure 1.5. This traffic generation will be unchanged in 2034.



**Figure 1.5 Development with site traffic generation (existing road network)**

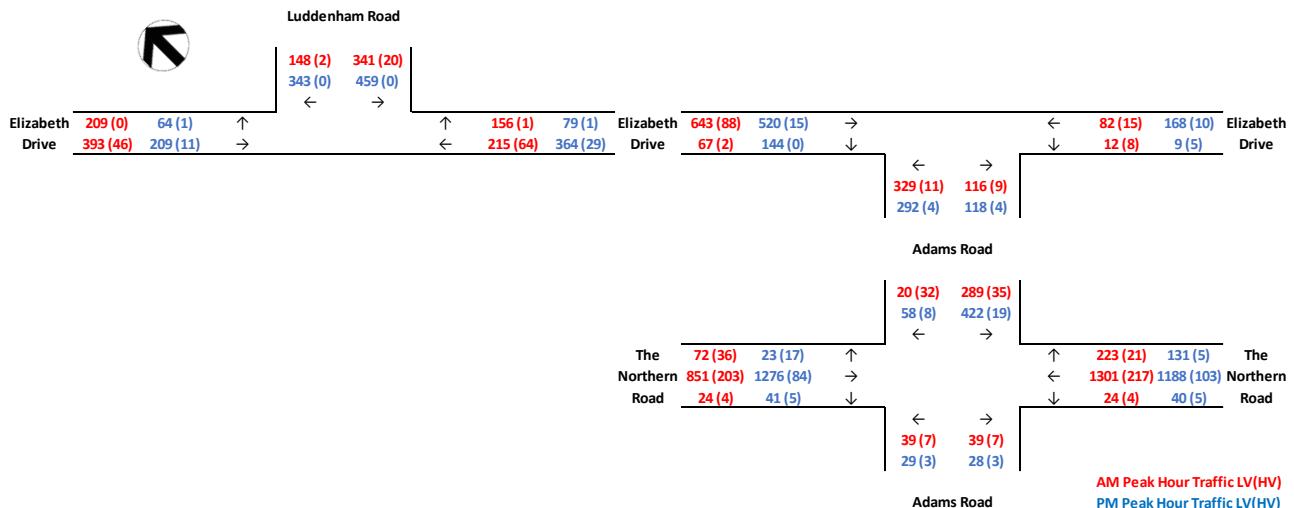
Should TfNSW's preliminary design be progressed, site traffic will be rerouted, as shown in Figure 1.6.



**Figure 1.6 Development with site traffic generation (with restriction of all turn movements except left into Adams Road at Elizabeth Drive/Adams Road intersection)**

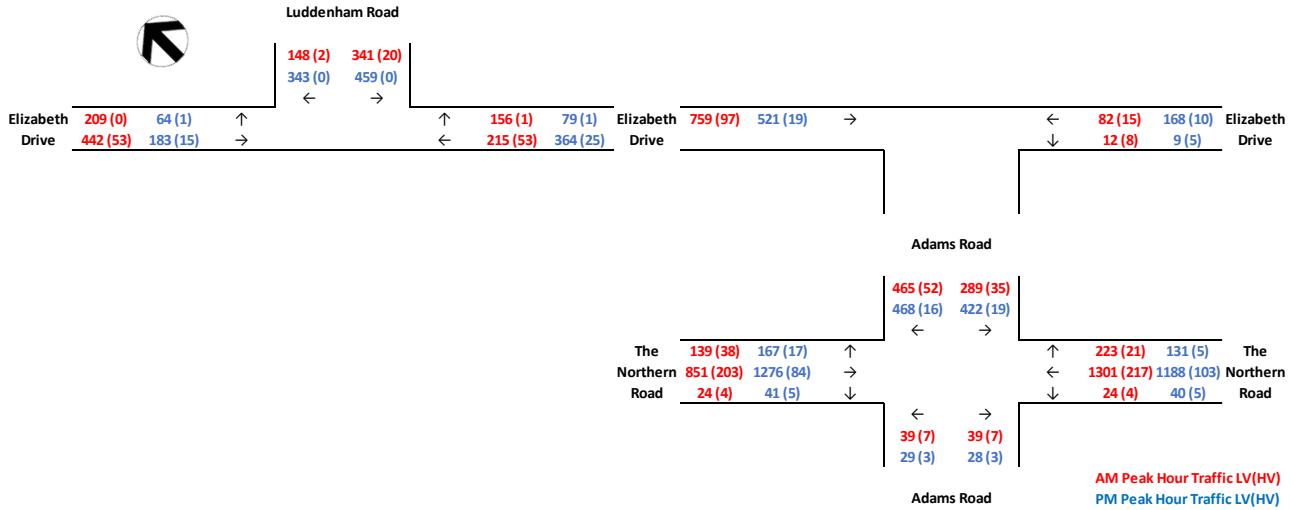
### 1.1.3 Cumulative traffic volumes

The cumulative<sup>1</sup> traffic volumes (baseline traffic plus site traffic) and distribution for 2029 and 2034, as per the existing road network and with the restriction of all turn movements except left into Adams Road at Elizabeth Drive/Adams Road intersection are presented respectively in Figure 1.7 through to Figure 1.10.

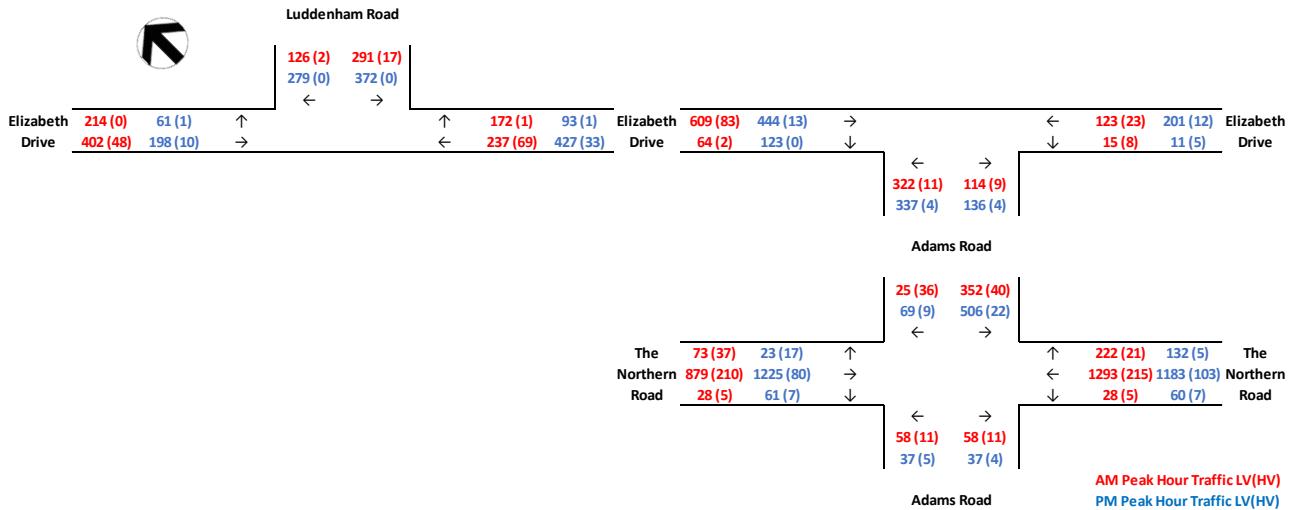


**Figure 1.7 Cumulative traffic in 2029 (existing road network)**

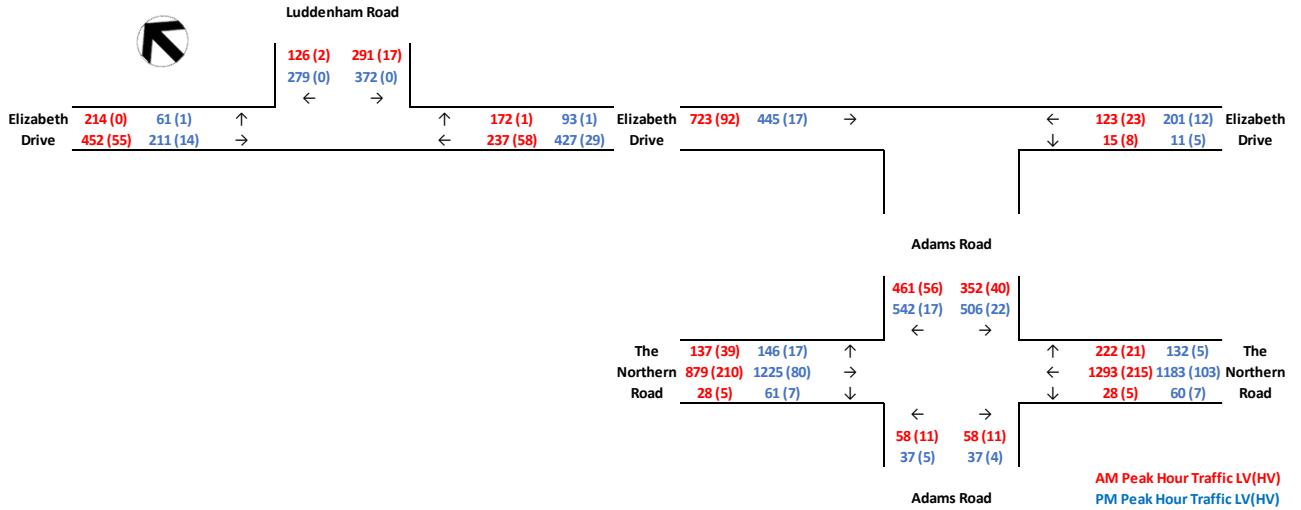
<sup>1</sup> The Addendum TIA uses 'Cumulative' project development traffic to refer to all traffic from the subject property. Here it is used to refer to all traffic on the road network (baseline + all site traffic) should the projects proceed.



**Figure 1.8 Cumulative traffic in 2029 (with restriction of all turn movements except left into Adams Road at Elizabeth Drive/Adams Road intersection)**



**Figure 1.9 Cumulative traffic in 2034 (existing road network)**



**Figure 1.10 Cumulative traffic in 2034 (with restriction of all turn movements except left into Adams Road at Elizabeth Drive/Adams Road intersection)**

## 1.2 Intersection performance

### 1.2.1 SIDRA results

The SIDRA results for The Northern Road/Adams intersection for the modelled scenarios are presented in Table 1.1 and Table 1.2. Detailed SIDRA outputs are contained in Appendix B.

**Table 1.1 SIDRA modelling results for The Northern Road/Adams Road - existing road network**

Control/ Scenarios	AM Peak					PM Peak					
	Signalised	Traffic volume	DEL [seconds] (movement)	LOS	DOS	Q95 [m] (approach)	Traffic volume	DEL [seconds] (movement)	LOS	DOS	Q95 [m] (approach)
<b>2029 (as per Table 3.2 of Addendum TIA)</b>											
Baseline		3,539	32.2 (overall)	C	0.861	332.9 (south)	3,657	35.5 (overall)	C	0.902	319.9 (north)
Cumulative (site + baseline)		3,634	33.9 (overall)	C	0.866	339.5 (south)	3,676	33.8 (overall)	C	0.922	305.8 (north)
<b>2034</b>											
Baseline		3,706	33.7 (overall)	C	0.904	325.3 (south)	3,766	56.1 (overall)	D	1.084	488.4 (north)
Cumulative (site + baseline)		3,801	37.2 (overall)	C	0.874	346.6 (south)	3,785 <sup>1</sup>	42.7 (overall)	D	1.009	388.4 (north)

1. It is noted that for this modelled scenario, the SiDRA program has changed the phase time assumed in the model in response to higher traffic volumes to allow extra traffic to pass through the intersection (refer Appendix B).

**Table 1.2 SIDRA modelling results for The Northern Road/Adams Road - restriction of all turn movements except left into Adams Road at Elizabeth Drive/Adams Road intersection**

Control/ Scenarios	AM Peak					PM Peak					
	Signalised	Traffic volume	DEL [seconds] (movement)	LOS	DOS	Q95 [m] (approach)	Traffic volume	DEL [seconds] (movement)	LOS	DOS	Q95 [m] (approach)
<b>2029</b>											
With new Elizabeth Dr/Adams Rd intersection	Baseline	4,079	164.4 (overall)	F	1.182	969.5 (south)	4,239	139.6 (overall)	F	1.180	797.7 (north)
	Cumulative (site + baseline)	4,196	206.3 (overall)	F	1.224	1073.9 (south)	4,267	265.7 (overall)	F	1.202	828.7 (north)
<b>2034</b>											
	Baseline	4,234	174.0 (overall)	F	1.174	979.6 (south)	4,393	190.5 (overall)	F	1.255	861.1 (north)
	Cumulative (site + baseline)	4,351	210.6 (overall)	F	1.223	1054.3 (south)	4,421	200.4 (overall)	F	1.259	863.4 (north)

### **1.2.2 Existing road network**

The existing road network can accommodate cumulative traffic (baseline and site traffic) with an acceptable level of service (LOS) C for the 2029 scenario (AM and PM peaks) and the 2034 AM peak scenario.

The LoS will deteriorate to a LOS D in the PM peak for the 2034 scenario for both the baseline traffic and cumulative traffic scenarios.

### **1.2.3 Impact of new Elizabeth Drive/Adams Road intersection on Northern Road/Adams Road intersection**

The restriction of all turn movements except left into Adams Road at Elizabeth Drive/Adams Road intersection, would result in significant strain at the Northern Road/Adams Road intersection due to the redirected traffic. A LOS F is predicted for this intersection as a result in the change in baseline traffic flow, regardless of whether the project proceeds. This indicates that further consideration should be given to the proposed new Elizabeth Drive/Adams Road intersection, particularly noting the potential for future traffic volumes associated with the development of the agribusiness precinct.

If the site is operating at full capacity in 2029, the site would add 2.9% to the baseline traffic during the AM peak and 0.7% to the baseline traffic during the PM peak. The percentage contributions would be smaller in 2034. Site traffic would not reduce the LoS at the Northern Road/Adams Road intersection.

### **1.2.4 Impact of site traffic on Elizabeth Drive/Adams Road intersection**

SIDRA analysis of the above scenarios was also carried out for the Elizabeth Drive/Adams Road intersection and the Elizabeth Drive/Luddenham Road intersection. The results show the cumulative site traffic will not reduce the LOS of either intersection for any of the modelled scenarios. SIDRA outputs for these intersections are contained in Appendix B.

## 2 Elizabeth Drive/Adams Road intersection interim upgrade

2. TfNSW understands that the proposed 90m long deceleration lane in the interim upgrade of Elizabeth Drive and Adams Road intersection is based on the requirements set out in Austroads for a design speed of 90 km/h with the deceleration rate of 3.5 m/s to a stop condition. As the left turn lane will mainly accommodate heavy vehicles, such as 26m B-Doubles, a deceleration rate of 2.5 m/s should be used with a turning speed of 20 km/h. This will require 120 metres including taper for the deceleration lane for the left turn movement.

As such, the concept design plan should be updated to address the above issue with showing the dimensions and submitted to TfNSW for review and approval.

3. A civil design plan of the interim intersection upgrade with relevant lane dimensions should also be submitted to TfNSW for review and approval.

4. It is also requested that a stormwater management plan for the proposed intersection upgrade should be provided to TfNSW for review and approval. A table drain system could be considered subject to the further design and approval by TfNSW.

The concept design for the proposed interim Elizabeth Drive/Adams Road intersection upgrade required to accommodate project related traffic is contained in Appendix C. This concept design has been updated to include a 120 m deceleration lane, relevant lane dimensions and stormwater management plan.

## 3 Closing

We trust the responses contained in this letter and appendices address the matters raised in TfNSW submission on the project's Submission Report. We would welcome the opportunity to further discuss these responses as required.

Yours sincerely



**Janet Krick**

Associate

[jkrick@emmconsulting.com.au](mailto:jkrick@emmconsulting.com.au)

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Appendix A

## Consultation with TfNSW

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## Janet Krick

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**From:** Abdullah Uddin  
**Sent:** Wednesday, 9 June 2021 10:48 AM  
**To:** Felix Liu  
**Cc:** Janet Krick; Phil Towler; Pascal Bobillier; John Scarlis; Eric Lei  
**Subject:** Luddenham Quarry SSD-10446 (TfNSW reference: SYD20/00390/05)  
**Attachments:** 20210525 - TfNSW Response - SYD09-00807-15.pdf

Good morning Felix

As discussed on last Friday, in regard to item 1 of the attached TfNSW letter, due to uncertainty of Elizabeth Drive upgrade in the longer term, we are undertaking the following SIDRA sensitivity testing, as agreed:

- 2029 : all development traffic via The Northern Road, except the left turn movement from Elizabeth Drive to Adams Road by the left turn deceleration lane;
- 2034: all development traffic via The Northern Road, except the left turn movement from Elizabeth Drive to Adams Road by the left turn deceleration lane; and
- 2034: all development traffic movements permitted at Elizabeth Drive/ Adams Road intersection, except the right turn movement from Elizabeth Drive to Adams Road.

In regard to TfNSW request for a 120m long deceleration lane (item 2), instead of a 90m long lane in accordance with Austroads requirement, we are undertaking further analysis and investigation for possible amendment of the turn radius from Elizabeth Drive to Adams Road so that 26m long B-double vehicles can execute the turn at a higher speed. I will get back to you on this later.

Also as discussed, I understand that the concept plans for Elizabeth Drive upgrade has been prepared by TfNSW. Could you please send us the plans for our review.

Please feel free to call if you have any questions.

Best Regards

**Abdullah Uddin**

Associate Traffic Engineer



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Appendix B

## SIDRA results

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## MOVEMENT SUMMARY

Site: 101 [2029 baseline The Northern Rd/ Adams Rd AM (Site Folder: General)]

Network: N201 [2029 baseline AM (Network Folder: existing arrangement)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
South: The Northern Road														
1b	L3	29	14.3	29	14.3	0.032	16.3	LOS B	0.6	4.7	0.38	0.68	0.38	52.9
2	T1	1599	14.4	1599	14.4	* 0.861	28.7	LOS C	42.4	332.9	0.89	0.89	0.98	49.1
3a	R1	228	5.1	228	5.1	* 0.716	33.3	LOS C	7.8	57.1	1.00	0.84	1.06	33.2
Approach		1857	13.2	1857	13.2	0.861	29.1	LOS C	42.4	332.9	0.90	0.88	0.98	47.6
NorthEast: Adams Road														
24a	L1	331	8.0	331	8.0	0.558	31.6	LOS C	11.4	85.1	0.87	0.85	0.87	43.7
8	T1	1	0.0	1	0.0	0.005	49.1	LOS D	0.1	0.4	0.92	0.56	0.92	34.7
26b	R3	43	51.2	43	51.2	* 0.649	70.3	LOS E	2.6	25.8	1.00	0.81	1.18	26.9
Approach		375	12.9	375	12.9	0.649	36.1	LOS C	11.4	85.1	0.89	0.84	0.91	40.8
North: The Northern Road														
7b	L3	69	21.2	69	21.2	0.107	19.1	LOS B	1.3	11.1	0.59	0.72	0.59	45.6
8	T1	1111	19.3	1111	19.3	0.800	34.2	LOS C	27.7	225.9	0.95	0.89	1.00	45.7
9a	R1	29	14.3	29	14.3	0.207	59.5	LOS E	1.5	12.2	0.97	0.72	0.97	32.5
Approach		1209	19.3	1209	19.3	0.800	33.9	LOS C	27.7	225.9	0.93	0.87	0.98	45.3
SouthWest: Adams Road														
30a	L1	48	15.2	48	15.2	0.119	42.6	LOS D	2.0	16.2	0.82	0.72	0.82	36.5
2	T1	1	0.0	1	0.0	0.005	48.0	LOS D	0.1	0.4	0.92	0.54	0.92	23.6
32b	R3	48	15.2	48	15.2	0.600	67.2	LOS E	2.8	22.2	1.00	0.78	1.10	28.7
Approach		98	15.1	98	15.1	0.600	54.8	LOS D	2.8	22.2	0.91	0.75	0.96	32.1
All Vehicles		3539	15.3	3539	15.3	0.861	32.2	LOS C	42.4	332.9	0.91	0.87	0.97	45.3

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist m				sec	m	m/sec
South: The Northern Road												
P11 Stage 1		53	49.3	LOS E	0.2	0.2		0.95	0.95	75.6	34.2	0.45
P12 Stage 2		53	23.0	LOS C	0.1	0.1		0.89	0.89	46.7	30.9	0.66
P1B Slip/ Bypass		53	49.3	LOS E	0.2	0.2		0.95	0.95	68.0	24.3	0.36
NorthEast: Adams Road												
P3 Full		53	49.3	LOS E	0.2	0.2		0.95	0.95	81.2	41.5	0.51

North: The Northern Road										
P31 Stage 1	53	49.3	LOS E	0.2	0.2	0.95	0.95	75.6	34.2	0.45
P32 Stage 2	53	49.3	LOS E	0.2	0.2	0.95	0.95	73.0	30.9	0.42
P3B Slip/ Bypass	53	23.0	LOS C	0.1	0.1	0.89	0.89	41.7	24.3	0.58
SouthWest: Adams Road										
P1 Full	53	49.3	LOS E	0.2	0.2	0.95	0.95	80.4	40.5	0.50
All Pedestrians	421	42.7	LOS E	0.2	0.2	0.93	0.93	67.8	32.6	0.48

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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Project: T:\Jobs\2019\J190749 - CPG Luddenham Quarry\Technical studies\Transport\SIDRA\210608 Addendum TIA additional scenarios.sip9

## MOVEMENT SUMMARY

▼ Site: 101 [2029 baseline Elizabeth Dr/ Adams Rd AM (Site Folder: General)]

■ Network: N201 [2029 baseline AM (Network Folder: existing arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
21	L2	6	0.0	6	0.0	0.003	6.9	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	102	15.5	102	15.5	0.056	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	80.0
Approach		108	14.6	108	14.6	0.056	0.4	NA	0.0	0.0	0.00	0.04	0.00	78.6
NorthWest: Elizabeth Drive														
28	T1	769	12.0	769	12.0	0.456	0.1	LOS A	0.7	5.7	0.07	0.06	0.07	77.7
29	R2	73	2.9	73	2.9	0.456	7.6	LOS A	0.7	5.7	0.07	0.06	0.07	73.4
Approach		842	11.3	842	11.3	0.456	0.7	NA	0.7	5.7	0.07	0.06	0.07	77.6
SouthWest: Adams Road														
30	L2	346	0.0	346	0.0	0.178	6.6	LOS A	0.8	5.9	0.20	0.57	0.20	55.1
32	R2	121	0.0	121	0.0	0.233	12.3	LOS A	0.7	4.9	0.70	0.90	0.76	56.6
Approach		467	0.0	467	0.0	0.233	8.1	LOS A	0.8	5.9	0.33	0.66	0.34	55.7
All Vehicles		1418	7.8	1418	7.8	0.456	3.1	NA	0.8	5.9	0.15	0.25	0.15	69.0

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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Project: T:\Jobs\2019\J190749 - CPG Luddenham Quarry\Technical studies\Transport\SIDRA\210608 Addendum TIA additional scenarios.sip9

## MOVEMENT SUMMARY

▼ Site: 101 [2029 baseline Elizabeth Dr/ Luddenham Rd AM  
 (Site Folder: General)]

■ Network: N201 [2029  
 baseline AM (Network Folder:  
 existing arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
22	T1	282	19.8	282	19.8	0.159	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
23	R2	165	0.6	165	0.6	0.190	10.4	LOS A	0.8	5.8	0.61	0.83	0.61	56.7
Approach		447	12.7	447	12.7	0.190	3.8	NA	0.8	5.8	0.23	0.31	0.23	69.4
NorthEast: Luddenham Road														
24	L2	380	5.5	380	5.5	0.391	10.2	LOS A	2.2	16.1	0.58	0.86	0.72	55.7
26	R2	158	1.3	158	1.3	0.385	16.5	LOS B	1.5	10.7	0.77	0.97	1.01	55.6
Approach		538	4.3	538	4.3	0.391	12.1	LOS A	2.2	16.1	0.64	0.89	0.80	55.6
NorthWest: Elizabeth Drive														
27	L2	220	0.0	220	0.0	0.114	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	65.4
28	T1	462	10.5	462	10.5	0.244	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach		682	7.1	682	7.1	0.244	2.3	NA	0.0	0.0	0.00	0.20	0.00	72.1
All Vehicles		1667	7.7	1667	7.7	0.391	5.9	NA	2.2	16.1	0.27	0.45	0.32	65.4

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

Site: 101 [2029 baseline The Northern Rd/ Adams Rd PM (Site Folder: General)]

Network: N201 [2029 baseline PM (Network Folder: existing arrangement)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	Veh. veh	Dist m					
South: The Northern Road														
1b	L3	47	11.1	47	11.1	0.050	16.0	LOS B	0.9	7.1	0.37	0.69	0.37	53.1
2	T1	1360	8.0	1360	8.0	0.672	19.1	LOS B	25.9	193.7	0.78	0.70	0.78	56.4
3a	R1	140	1.5	140	1.5	*0.509	32.8	LOS C	4.7	33.3	0.97	0.78	0.97	33.5
Approach		1547	7.6	1547	7.6	0.672	20.2	LOS B	25.9	193.7	0.78	0.71	0.78	54.5
NorthEast: Adams Road														
24a	L1	461	3.7	461	3.7	*0.824	49.0	LOS D	18.8	135.6	0.99	1.03	1.10	37.1
8	T1	1	0.0	1	0.0	0.005	49.1	LOS D	0.1	0.4	0.92	0.56	0.92	34.7
26b	R3	65	6.5	65	6.5	*0.767	70.5	LOS E	3.9	28.8	1.00	0.85	1.31	29.6
Approach		527	4.0	527	4.0	0.824	51.6	LOS D	18.8	135.6	0.99	1.01	1.13	36.0
North: The Northern Road														
7b	L3	34	28.1	34	28.1	0.052	18.0	LOS B	0.6	5.6	0.54	0.69	0.54	46.9
8	T1	1433	6.2	1433	6.2	*0.902	44.9	LOS D	43.4	319.9	1.00	1.04	1.19	40.3
9a	R1	48	10.9	48	10.9	0.333	60.2	LOS E	2.6	19.7	0.98	0.74	0.98	32.3
Approach		1515	6.9	1515	6.9	0.902	44.8	LOS D	43.4	319.9	0.99	1.02	1.16	40.1
SouthWest: Adams Road														
30a	L1	34	9.4	34	9.4	0.079	41.2	LOS C	1.4	10.6	0.81	0.70	0.81	37.3
2	T1	1	0.0	1	0.0	0.005	48.0	LOS D	0.1	0.4	0.92	0.54	0.92	23.6
32b	R3	33	9.7	33	9.7	0.391	65.4	LOS E	1.8	13.9	1.00	0.73	1.00	29.5
Approach		67	9.4	67	9.4	0.391	53.0	LOS D	1.8	13.9	0.90	0.71	0.90	32.9
All Vehicles		3657	6.8	3657	6.8	0.902	35.5	LOS C	43.4	319.9	0.90	0.88	0.99	44.0

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist m				sec	m	m/sec
South: The Northern Road												
P11 Stage 1		53	49.3	LOS E	0.2	0.2		0.95	0.95	75.6	34.2	0.45
P12 Stage 2		53	23.0	LOS C	0.1	0.1		0.89	0.89	46.7	30.9	0.66
P1B Slip/ Bypass		53	49.3	LOS E	0.2	0.2		0.95	0.95	68.0	24.3	0.36
NorthEast: Adams Road												
P3 Full		53	49.3	LOS E	0.2	0.2		0.95	0.95	81.2	41.5	0.51

North: The Northern Road										
P31 Stage 1	53	49.3	LOS E	0.2	0.2	0.95	0.95	75.6	34.2	0.45
P32 Stage 2	53	49.3	LOS E	0.2	0.2	0.95	0.95	73.0	30.9	0.42
P3B Slip/ Bypass	53	23.0	LOS C	0.1	0.1	0.89	0.89	41.7	24.3	0.58
SouthWest: Adams Road										
P1 Full	53	49.3	LOS E	0.2	0.2	0.95	0.95	80.4	40.5	0.50
All Pedestrians	421	42.7	LOS E	0.2	0.2	0.93	0.93	67.8	32.6	0.48

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: 101 [2029 baseline Elizabeth Dr/ Adams Rd PM (Site Folder: General)]

■ Network: N201 [2029 baseline PM (Network Folder: existing arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
21	L2	9	11.1	9	11.1	0.005	7.1	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	187	5.6	187	5.6	0.096	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		197	5.9	197	5.9	0.096	0.4	NA	0.0	0.0	0.00	0.03	0.00	78.8
NorthWest: Elizabeth Drive														
28	T1	563	2.8	563	2.8	0.386	0.3	LOS A	1.4	10.1	0.20	0.14	0.20	74.6
29	R2	152	0.0	152	0.0	0.386	7.9	LOS A	1.4	10.1	0.20	0.14	0.20	65.5
Approach		715	2.2	715	2.2	0.386	1.9	NA	1.4	10.1	0.20	0.14	0.20	73.8
SouthWest: Adams Road														
30	L2	307	0.0	307	0.0	0.169	6.9	LOS A	0.8	5.6	0.28	0.59	0.28	54.5
32	R2	123	0.0	123	0.0	0.206	11.0	LOS A	0.6	4.5	0.64	0.86	0.66	57.7
Approach		431	0.0	431	0.0	0.206	8.1	LOS A	0.8	5.6	0.38	0.67	0.39	55.9
All Vehicles		1342	2.0	1342	2.0	0.386	3.7	NA	1.4	10.1	0.23	0.29	0.23	67.1

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

▼ Site: 101 [2029 baseline Elizabeth Dr/ Luddenham Rd PM  
 (Site Folder: General)]

■ Network: N201 [2029  
 baseline PM (Network Folder:  
 existing arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h	
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
22	T1	409	6.4	409	6.4	0.213	0.0	LOS A	0.0	0.00	0.00	0.00	79.9	
23	R2	84	1.3	84	1.3	0.062	8.0	LOS A	0.3	2.0	0.39	0.62	0.39	58.7
Approach		494	5.5	494	5.5	0.213	1.4	NA	0.3	2.0	0.07	0.11	0.07	75.2
NorthEast: Luddenham Road														
24	L2	483	0.0	483	0.0	0.364	8.0	LOS A	1.9	13.1	0.41	0.66	0.41	58.4
26	R2	361	0.0	361	0.0	0.607	15.1	LOS B	3.6	25.4	0.75	1.04	1.31	57.1
Approach		844	0.0	844	0.0	0.607	11.1	LOS A	3.6	25.4	0.55	0.82	0.79	57.6
NorthWest: Elizabeth Drive														
27	L2	68	1.5	68	1.5	0.036	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	64.9
28	T1	232	5.0	232	5.0	0.118	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		300	4.2	300	4.2	0.118	1.6	NA	0.0	0.0	0.00	0.14	0.00	73.6
All Vehicles		1638	2.4	1638	2.4	0.607	6.4	NA	3.6	25.4	0.30	0.48	0.43	64.6

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

■ Site: 101 [2029 dev The Northern Rd/ Adams Rd AM (Site Folder: General)]

■■ Network: N201 [2029 dev AM (Network Folder: existing arrangement)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	Veh. veh	Dist m					
South: The Northern Road														
1b	L3	29	14.3	29	14.3	0.032	16.3	LOS B	0.6	4.7	0.38	0.68	0.38	52.9
2	T1	1599	14.4	1599	14.4	* 0.866	29.5	LOS C	43.2	339.5	0.90	0.89	0.99	48.6
3a	R1	257	8.6	257	8.6	* 0.746	33.2	LOS C	8.8	65.8	1.00	0.86	1.08	33.3
Approach		1885	13.6	1885	13.6	0.866	29.8	LOS C	43.2	339.5	0.90	0.89	0.99	47.0
NorthEast: Adams Road														
24a	L1	341	10.8	341	10.8	0.555	28.6	LOS C	11.6	88.9	0.86	0.82	0.86	45.0
8	T1	1	0.0	1	0.0	0.005	49.1	LOS D	0.1	0.4	0.92	0.56	0.92	34.7
26b	R3	55	61.5	55	61.5	* 0.865	77.7	LOS F	3.5	37.4	1.00	0.95	1.60	25.1
Approach		397	17.8	397	17.8	0.865	35.5	LOS C	11.6	88.9	0.88	0.84	0.96	40.5
North: The Northern Road														
7b	L3	114	33.3	114	33.3	0.194	20.4	LOS B	2.3	20.5	0.64	0.74	0.64	44.5
8	T1	1111	19.3	1111	19.3	0.838	39.2	LOS C	29.9	243.6	0.98	0.95	1.08	43.0
9a	R1	29	14.3	29	14.3	0.207	59.5	LOS E	1.5	12.2	0.97	0.72	0.97	32.5
Approach		1254	20.5	1254	20.5	0.838	38.0	LOS C	29.9	243.6	0.95	0.92	1.04	42.7
SouthWest: Adams Road														
30a	L1	48	15.2	48	15.2	0.119	42.6	LOS D	2.0	16.2	0.82	0.72	0.82	36.5
2	T1	1	0.0	1	0.0	0.005	48.0	LOS D	0.1	0.4	0.92	0.54	0.92	23.6
32b	R3	48	15.2	48	15.2	0.600	67.2	LOS E	2.8	22.2	1.00	0.78	1.10	28.7
Approach		98	15.1	98	15.1	0.600	54.8	LOS D	2.8	22.2	0.91	0.75	0.96	32.1
All Vehicles		3634	16.5	3634	16.5	0.866	33.9	LOS C	43.2	339.5	0.91	0.89	1.00	44.1

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist m				sec	m	m/sec
South: The Northern Road												
P11 Stage 1		53	49.3	LOS E	0.2	0.2		0.95	0.95	75.6	34.2	0.45
P12 Stage 2		53	23.0	LOS C	0.1	0.1		0.89	0.89	46.7	30.9	0.66
P1B Slip/ Bypass		53	49.3	LOS E	0.2	0.2		0.95	0.95	68.0	24.3	0.36
NorthEast: Adams Road												
P3 Full		53	49.3	LOS E	0.2	0.2		0.95	0.95	81.2	41.5	0.51

North: The Northern Road										
P31 Stage 1	53	49.3	LOS E	0.2	0.2	0.95	0.95	75.6	34.2	0.45
P32 Stage 2	53	49.3	LOS E	0.2	0.2	0.95	0.95	73.0	30.9	0.42
P3B Slip/ Bypass	53	23.0	LOS C	0.1	0.1	0.89	0.89	41.7	24.3	0.58
SouthWest: Adams Road										
P1 Full	53	49.3	LOS E	0.2	0.2	0.95	0.95	80.4	40.5	0.50
All Pedestrians	421	42.7	LOS E	0.2	0.2	0.93	0.93	67.8	32.6	0.48

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: 101 [2029 dev Elizabeth Dr/ Adams Rd AM (Site Folder: Network: N201 [2029 dev AM General]) (Network Folder: existing arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec		[ Veh. veh ]	Dist m				
<b>SouthEast: Elizabeth Drive</b>														
21	L2	21	40.0	21	40.0	0.014	7.7	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	102	15.5	102	15.5	0.056	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	80.0
Approach		123	19.7	123	19.7	0.056	1.3	NA	0.0	0.0	0.00	0.11	0.00	76.1
<b>NorthWest: Elizabeth Drive</b>														
28	T1	769	12.0	769	12.0	0.456	0.1	LOS A	0.8	5.8	0.07	0.06	0.07	77.7
29	R2	73	2.9	73	2.9	0.456	7.7	LOS A	0.8	5.8	0.07	0.06	0.07	73.2
Approach		842	11.3	842	11.3	0.456	0.7	NA	0.8	5.8	0.07	0.06	0.07	77.5
<b>SouthWest: Adams Road</b>														
30	L2	358	3.2	358	3.2	0.187	6.7	LOS A	0.9	6.3	0.19	0.57	0.19	55.1
32	R2	132	7.2	132	7.2	0.276	13.3	LOS A	0.8	6.3	0.73	0.92	0.82	54.0
Approach		489	4.3	489	4.3	0.276	8.5	LOS A	0.9	6.3	0.34	0.67	0.36	54.7
All Vehicles		1455	9.6	1455	9.6	0.456	3.4	NA	0.9	6.3	0.16	0.27	0.17	68.1

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

▼ Site: 101 [2029 dev Elizabeth Dr/ Luddenham Rd AM (Site Folder: General)]

■ Network: N201 [2029 dev AM (Network Folder: existing arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
22	T1	294	22.9	294	22.9	0.168	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
23	R2	165	0.6	165	0.6	0.190	10.4	LOS A	0.8	5.8	0.61	0.83	0.61	56.7
Approach		459	14.9	459	14.9	0.190	3.7	NA	0.8	5.8	0.22	0.30	0.22	69.6
NorthEast: Luddenham Road														
24	L2	380	5.5	380	5.5	0.391	10.2	LOS A	2.2	16.1	0.58	0.86	0.72	55.7
26	R2	158	1.3	158	1.3	0.393	16.8	LOS B	1.6	11.0	0.78	0.97	1.03	55.3
Approach		538	4.3	538	4.3	0.393	12.2	LOS A	2.2	16.1	0.64	0.89	0.81	55.5
NorthWest: Elizabeth Drive														
27	L2	220	0.0	220	0.0	0.114	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	65.4
28	T1	462	10.5	462	10.5	0.244	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach		682	7.1	682	7.1	0.244	2.3	NA	0.0	0.0	0.00	0.20	0.00	72.1
All Vehicles		1679	8.3	1679	8.3	0.393	5.8	NA	2.2	16.1	0.26	0.45	0.32	65.4

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

**Site: 101 [2029 dev The Northern Rd/ Adams Rd PM (Site Folder: General)]**

**Network: N201 [2029 dev PM (Network Folder: existing arrangement)]**

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
<b>South: The Northern Road</b>														
1b	L3	47	11.1	47	11.1	0.049	16.1	LOS B	1.0	7.4	0.36	0.69	0.36	53.0
2	T1	1360	8.0	1360	8.0	0.647	18.9	LOS B	26.8	200.7	0.74	0.67	0.74	56.6
3a	R1	143	3.7	143	3.7	0.512	35.4	LOS C	5.3	38.6	0.97	0.79	0.97	32.0
Approach		1551	7.7	1551	7.7	0.647	20.3	LOS B	26.8	200.7	0.75	0.68	0.75	54.4
<b>NorthEast: Adams Road</b>														
24a	L1	464	4.3	464	4.3	* 0.834	53.1	LOS D	20.5	148.4	1.00	1.05	1.11	35.6
8	T1	1	0.0	1	0.0	0.005	53.3	LOS D	0.1	0.4	0.92	0.56	0.92	33.3
26b	R3	69	12.1	69	12.1	* 0.922	86.7	LOS F	4.9	38.0	1.00	0.97	1.67	25.9
Approach		535	5.3	535	5.3	0.922	57.4	LOS E	20.5	148.4	1.00	1.04	1.18	33.9
<b>North: The Northern Road</b>														
7b	L3	42	42.5	42	42.5	0.067	18.5	LOS B	0.8	8.1	0.53	0.70	0.53	46.6
8	T1	1433	6.2	1433	6.2	* 0.862	37.8	LOS C	41.5	305.8	0.96	0.94	1.05	43.7
9a	R1	48	10.9	48	10.9	* 0.327	64.6	LOS E	2.8	21.4	0.98	0.74	0.98	31.1
Approach		1523	7.4	1523	7.4	0.862	38.1	LOS C	41.5	305.8	0.95	0.92	1.03	43.2
<b>SouthWest: Adams Road</b>														
30a	L1	34	9.4	34	9.4	0.080	44.6	LOS D	1.5	11.6	0.81	0.70	0.81	36.0
2	T1	1	0.0	1	0.0	0.005	52.2	LOS D	0.1	0.4	0.92	0.55	0.92	22.4
32b	R3	33	9.7	33	9.7	0.427	71.4	LOS F	2.0	15.3	1.00	0.73	1.00	28.2
Approach		67	9.4	67	9.4	0.427	57.7	LOS E	2.0	15.3	0.91	0.71	0.91	31.6
All Vehicles		3676	7.3	3676	7.3	0.922	33.8	LOS C	41.5	305.8	0.87	0.84	0.93	44.9

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist m				sec	m	m/sec
<b>South: The Northern Road</b>												
P11 Stage 1		53	54.3	LOS E	0.2	0.2		0.95	0.95	80.6	34.2	0.42
P12 Stage 2		53	26.0	LOS C	0.1	0.1		0.90	0.90	49.8	30.9	0.62
P1B Slip/ Bypass		53	54.3	LOS E	0.2	0.2		0.95	0.95	73.0	24.3	0.33
<b>NorthEast: Adams Road</b>												
P3 Full		53	54.3	LOS E	0.2	0.2		0.95	0.95	86.2	41.5	0.48

North: The Northern Road										
P31 Stage 1	53	54.3	LOS E	0.2	0.2	0.95	0.95	80.6	34.2	0.42
P32 Stage 2	53	54.3	LOS E	0.2	0.2	0.95	0.95	78.0	30.9	0.40
P3B Slip/ Bypass	53	26.0	LOS C	0.1	0.1	0.90	0.90	44.7	24.3	0.54
SouthWest: Adams Road										
P1 Full	53	54.3	LOS E	0.2	0.2	0.95	0.95	85.4	40.5	0.47
All Pedestrians	421	47.2	LOS E	0.2	0.2	0.94	0.94	72.3	32.6	0.45

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: 101 [2029 dev Elizabeth Dr/ Adams Rd PM (Site Folder: Network: N201 [2029 dev PM General]) (Network Folder: existing arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
<b>SouthEast: Elizabeth Drive</b>														
21	L2	15	35.7	15	35.7	0.010	7.6	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	187	5.6	187	5.6	0.096	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		202	7.8	202	7.8	0.096	0.6	NA	0.0	0.0	0.00	0.05	0.00	78.2
<b>NorthWest: Elizabeth Drive</b>														
28	T1	563	2.8	563	2.8	0.387	0.3	LOS A	1.4	10.2	0.20	0.14	0.20	74.6
29	R2	152	0.0	152	0.0	0.387	7.9	LOS A	1.4	10.2	0.20	0.14	0.20	65.4
Approach		715	2.2	715	2.2	0.387	2.0	NA	1.4	10.2	0.20	0.14	0.20	73.7
<b>SouthWest: Adams Road</b>														
30	L2	312	1.4	312	1.4	0.173	6.9	LOS A	0.8	5.8	0.28	0.59	0.28	54.5
32	R2	128	3.3	128	3.3	0.223	11.4	LOS A	0.7	5.1	0.65	0.87	0.69	56.5
Approach		440	1.9	440	1.9	0.223	8.2	LOS A	0.8	5.8	0.39	0.67	0.40	55.4
All Vehicles		1357	2.9	1357	2.9	0.387	3.8	NA	1.4	10.2	0.23	0.30	0.24	66.7

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

▼ Site: 101 [2029 dev Elizabeth Dr/ Luddenham Rd PM (Site Folder: General)]

■ Network: N201 [2029 dev PM (Network Folder: existing arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
22	T1	414	7.4	414	7.4	0.216	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
23	R2	84	1.3	84	1.3	0.062	8.0	LOS A	0.3	2.0	0.39	0.62	0.39	58.7
Approach		498	6.3	498	6.3	0.216	1.4	NA	0.3	2.0	0.07	0.11	0.07	75.3
NorthEast: Luddenham Road														
24	L2	483	0.0	483	0.0	0.364	8.0	LOS A	1.9	13.1	0.41	0.66	0.41	58.4
26	R2	361	0.0	361	0.0	0.612	15.3	LOS B	3.7	25.7	0.75	1.05	1.33	57.0
Approach		844	0.0	844	0.0	0.612	11.1	LOS A	3.7	25.7	0.55	0.82	0.80	57.5
NorthWest: Elizabeth Drive														
27	L2	68	1.5	68	1.5	0.036	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	64.9
28	T1	232	5.0	232	5.0	0.118	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		300	4.2	300	4.2	0.118	1.6	NA	0.0	0.0	0.00	0.14	0.00	73.6
All Vehicles		1642	2.7	1642	2.7	0.612	6.4	NA	3.7	25.7	0.30	0.48	0.43	64.6

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

Site: 101 [2034 baseline The Northern Rd/ Adams Rd AM (Site Folder: General)]

Network: N201 [2034 baseline AM (Network Folder: existing arrangement)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
South: The Northern Road														
1b	L3	35	15.2	35	15.2	0.038	16.3	LOS B	0.7	5.5	0.38	0.68	0.38	52.8
2	T1	1588	14.3	1588	14.3	* 0.855	27.9	LOS B	41.4	325.3	0.89	0.87	0.97	49.6
3a	R1	227	5.1	227	5.1	* 0.713	33.3	LOS C	7.8	56.8	0.99	0.84	1.06	33.3
Approach		1851	13.2	1851	13.2	0.855	28.3	LOS B	41.4	325.3	0.89	0.87	0.97	48.1
NorthEast: Adams Road														
24a	L1	402	7.9	402	7.9	0.678	35.4	LOS C	13.9	103.7	0.92	0.91	0.92	42.0
8	T1	1	0.0	1	0.0	0.005	49.1	LOS D	0.1	0.4	0.92	0.56	0.92	34.7
26b	R3	53	50.0	53	50.0	0.787	73.2	LOS F	3.2	32.3	1.00	0.88	1.40	26.4
Approach		456	12.7	456	12.7	0.787	39.8	LOS C	13.9	103.7	0.93	0.91	0.97	39.3
North: The Northern Road														
7b	L3	72	22.1	72	22.1	0.111	19.1	LOS B	1.4	11.5	0.59	0.72	0.59	45.6
8	T1	1147	19.4	1147	19.4	0.827	36.6	LOS C	29.9	244.1	0.96	0.92	1.05	44.4
9a	R1	35	15.2	35	15.2	0.246	59.8	LOS E	1.8	14.5	0.97	0.73	0.97	32.4
Approach		1254	19.4	1254	19.4	0.827	36.2	LOS C	29.9	244.1	0.94	0.91	1.02	44.0
SouthWest: Adams Road														
30a	L1	73	15.9	73	15.9	0.179	43.3	LOS D	3.1	24.9	0.84	0.74	0.84	36.2
2	T1	1	0.0	1	0.0	0.005	48.0	LOS D	0.1	0.4	0.92	0.54	0.92	23.6
32b	R3	73	15.9	73	15.9	* 0.904	77.7	LOS F	4.7	37.2	1.00	0.99	1.65	26.5
Approach		146	15.8	146	15.8	0.904	60.4	LOS E	4.7	37.2	0.92	0.86	1.24	30.6
All Vehicles		3706	15.3	3706	15.3	0.904	33.7	LOS C	41.4	325.3	0.92	0.89	1.00	44.4

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist m				sec	m	m/sec
South: The Northern Road												
P11 Stage 1		53	49.3	LOS E	0.2	0.2		0.95	0.95	75.6	34.2	0.45
P12 Stage 2		53	23.0	LOS C	0.1	0.1		0.89	0.89	46.7	30.9	0.66
P1B Slip/ Bypass		53	49.3	LOS E	0.2	0.2		0.95	0.95	68.0	24.3	0.36
NorthEast: Adams Road												
P3 Full		53	49.3	LOS E	0.2	0.2		0.95	0.95	81.2	41.5	0.51

North: The Northern Road										
P31 Stage 1	53	49.3	LOS E	0.2	0.2	0.95	0.95	75.6	34.2	0.45
P32 Stage 2	53	49.3	LOS E	0.2	0.2	0.95	0.95	73.0	30.9	0.42
P3B Slip/ Bypass	53	23.0	LOS C	0.1	0.1	0.89	0.89	41.7	24.3	0.58
SouthWest: Adams Road										
P1 Full	53	49.3	LOS E	0.2	0.2	0.95	0.95	80.4	40.5	0.50
All Pedestrians	421	42.7	LOS E	0.2	0.2	0.93	0.93	67.8	32.6	0.48

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: 101 [2034 baseline Elizabeth Dr/ Adams Rd AM (Site Folder: General)]

■ Network: N201 [2034 baseline AM (Network Folder: existing arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
21	L2	9	0.0	9	0.0	0.005	6.9	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	154	15.8	154	15.8	0.084	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	80.0
Approach		163	14.8	163	14.8	0.084	0.4	NA	0.0	0.0	0.00	0.04	0.00	78.6
NorthWest: Elizabeth Drive														
28	T1	728	12.0	728	12.0	0.434	0.1	LOS A	0.7	5.6	0.09	0.06	0.09	77.5
29	R2	69	3.0	69	3.0	0.434	7.9	LOS A	0.7	5.6	0.09	0.06	0.09	72.9
Approach		798	11.2	798	11.2	0.434	0.8	NA	0.7	5.6	0.09	0.06	0.09	77.4
SouthWest: Adams Road														
30	L2	339	0.0	339	0.0	0.182	6.8	LOS A	0.8	5.9	0.25	0.58	0.25	54.8
32	R2	119	0.0	119	0.0	0.228	12.2	LOS A	0.7	4.8	0.70	0.89	0.75	56.7
Approach		458	0.0	458	0.0	0.228	8.2	LOS A	0.8	5.9	0.36	0.66	0.38	55.5
All Vehicles		1419	8.0	1419	8.0	0.434	3.1	NA	0.8	5.9	0.17	0.25	0.17	68.9

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

▼ Site: 101 [2034 baseline Elizabeth Dr/ Luddenham Rd AM  
 (Site Folder: General)]

■ Network: N201 [2034  
 baseline AM (Network Folder:  
 existing arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec		[ Veh. veh ]	Dist m				
SouthEast: Elizabeth Drive														
22	T1	311	19.7	311	19.7	0.175	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
23	R2	182	0.6	182	0.6	0.214	10.5	LOS A	0.9	6.5	0.62	0.85	0.62	56.5
Approach		493	12.6	493	12.6	0.214	3.9	NA	0.9	6.5	0.23	0.31	0.23	69.3
NorthEast: Luddenham Road														
24	L2	324	5.5	324	5.5	0.338	10.0	LOS A	1.7	12.5	0.56	0.84	0.65	56.1
26	R2	135	1.6	135	1.6	0.357	17.1	LOS B	1.3	9.5	0.79	0.96	0.99	55.0
Approach		459	4.4	459	4.4	0.357	12.1	LOS A	1.7	12.5	0.63	0.87	0.75	55.6
NorthWest: Elizabeth Drive														
27	L2	225	0.0	225	0.0	0.117	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	65.4
28	T1	474	10.7	474	10.7	0.251	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach		699	7.2	699	7.2	0.251	2.3	NA	0.0	0.0	0.00	0.20	0.00	72.1
All Vehicles		1651	8.0	1651	8.0	0.357	5.5	NA	1.7	12.5	0.24	0.42	0.28	66.0

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

Site: 101 [2034 baseline The Northern Rd/ Adams Rd PM (Site Folder: General)]

Network: N201 [2034 baseline PM (Network Folder: existing arrangement)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 130 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
South: The Northern Road														
1b	L3	71	10.4	71	10.4	0.069	15.6	LOS B	1.4	11.0	0.34	0.70	0.34	53.3
2	T1	1355	8.1	1355	8.1	0.609	17.3	LOS B	26.6	198.7	0.68	0.62	0.68	58.0
3a	R1	141	1.5	141	1.5	0.285	28.5	LOS B	4.5	31.9	0.84	0.76	0.84	36.3
Approach		1566	7.6	1566	7.6	0.609	18.2	LOS B	26.6	198.7	0.68	0.64	0.68	56.1
NorthEast: Adams Road														
24a	L1	553	3.6	553	3.6	* 0.741	32.7	LOS C	23.2	167.1	0.91	0.86	0.91	44.5
8	T1	1	0.0	1	0.0	0.006	58.6	LOS E	0.1	0.4	0.93	0.56	0.93	31.8
26b	R3	78	6.8	78	6.8	* 1.084	167.4	LOS F	8.5	63.0	1.00	1.14	2.20	16.2
Approach		632	4.0	632	4.0	1.084	49.4	LOS D	23.2	167.1	0.92	0.90	1.07	36.6
North: The Northern Road														
7b	L3	34	28.1	34	28.1	0.060	21.7	LOS B	0.7	6.0	0.62	0.70	0.62	43.1
8	T1	1375	6.2	1375	6.2	* 1.013	101.9	LOS F	66.3	488.4	1.00	1.28	1.53	24.7
9a	R1	72	10.3	72	10.3	* 0.522	71.4	LOS F	4.6	34.9	1.00	0.77	1.00	29.4
Approach		1480	6.9	1480	6.9	1.013	98.6	LOS F	66.3	488.4	0.99	1.24	1.48	25.0
SouthWest: Adams Road														
30a	L1	44	11.9	44	11.9	0.116	50.2	LOS D	2.3	17.4	0.84	0.72	0.84	33.9
2	T1	1	0.0	1	0.0	0.006	57.5	LOS E	0.1	0.4	0.93	0.55	0.93	21.1
32b	R3	43	9.8	43	9.8	0.612	78.7	LOS F	3.0	22.4	1.00	0.78	1.11	26.7
Approach		88	10.7	88	10.7	0.612	64.2	LOS E	3.0	22.4	0.92	0.75	0.97	29.8
All Vehicles		3766	6.8	3766	6.8	1.084	56.1	LOS D	66.3	488.4	0.85	0.92	1.07	34.9

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist m				sec	m	m/sec
South: The Northern Road												
P11 Stage 1		53	59.3	LOS E	0.2	0.2		0.96	0.96	85.6	34.2	0.40
P12 Stage 2		53	29.6	LOS C	0.1	0.1		0.91	0.91	53.4	30.9	0.58
P1B Slip/ Bypass		53	59.3	LOS E	0.2	0.2		0.96	0.96	78.0	24.3	0.31
NorthEast: Adams Road												
P3 Full		53	59.3	LOS E	0.2	0.2		0.96	0.96	91.2	41.5	0.46

North: The Northern Road										
P31 Stage 1	53	59.3	LOS E	0.2	0.2	0.96	0.96	85.6	34.2	0.40
P32 Stage 2	53	59.3	LOS E	0.2	0.2	0.96	0.96	83.0	30.9	0.37
P3B Slip/ Bypass	53	29.6	LOS C	0.1	0.1	0.91	0.91	48.3	24.3	0.50
SouthWest: Adams Road										
P1 Full	53	59.3	LOS E	0.2	0.2	0.96	0.96	90.4	40.5	0.45
All Pedestrians	421	51.9	LOS E	0.2	0.2	0.94	0.94	76.9	32.6	0.42

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: 101 [2034 baseline Elizabeth Dr/ Adams Rd PM (Site Folder: General)]

■ Network: N201 [2034 baseline PM (Network Folder: existing arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
21	L2	12	9.1	12	9.1	0.006	7.1	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	224	5.6	224	5.6	0.115	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		236	5.8	236	5.8	0.115	0.4	NA	0.0	0.0	0.00	0.03	0.00	78.8
NorthWest: Elizabeth Drive														
28	T1	481	2.8	481	2.8	0.334	0.4	LOS A	1.2	8.4	0.21	0.14	0.21	74.5
29	R2	129	0.0	129	0.0	0.334	8.0	LOS A	1.2	8.4	0.21	0.14	0.21	65.3
Approach		611	2.2	611	2.2	0.334	2.0	NA	1.2	8.4	0.21	0.14	0.21	73.7
SouthWest: Adams Road														
30	L2	355	0.0	355	0.0	0.201	7.0	LOS A	1.0	6.9	0.33	0.60	0.33	54.3
32	R2	142	0.0	142	0.0	0.217	10.5	LOS A	0.7	4.9	0.60	0.85	0.63	58.2
Approach		497	0.0	497	0.0	0.217	8.0	LOS A	1.0	6.9	0.41	0.67	0.41	55.9
All Vehicles		1343	2.0	1343	2.0	0.334	3.9	NA	1.2	8.4	0.25	0.32	0.25	66.1

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

▼ Site: 101 [2034 baseline Elizabeth Dr/ Luddenham Rd PM  
 (Site Folder: General)]

■ Network: N201 [2034  
 baseline PM (Network Folder:  
 existing arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
22	T1	480	6.4	480	6.4	0.249	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
23	R2	99	1.1	99	1.1	0.072	7.9	LOS A	0.3	2.3	0.38	0.62	0.38	58.8
Approach		579	5.5	579	5.5	0.249	1.4	NA	0.3	2.3	0.06	0.11	0.06	75.2
NorthEast: Luddenham Road														
24	L2	392	0.0	392	0.0	0.291	7.9	LOS A	1.4	9.8	0.37	0.64	0.37	58.6
26	R2	294	0.0	294	0.0	0.543	15.3	LOS B	2.8	19.7	0.75	1.01	1.20	57.0
Approach		685	0.0	685	0.0	0.543	11.0	LOS A	2.8	19.7	0.53	0.80	0.73	57.6
NorthWest: Elizabeth Drive														
27	L2	65	1.6	65	1.6	0.034	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	64.8
28	T1	219	4.8	219	4.8	0.112	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		284	4.1	284	4.1	0.112	1.6	NA	0.0	0.0	0.00	0.14	0.00	73.6
All Vehicles		1548	2.8	1548	2.8	0.543	5.7	NA	2.8	19.7	0.26	0.42	0.35	65.9

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

Site: 101 [2034 dev The Northern Rd/ Adams Rd AM (Site Folder: General)]

Network: N201 [2034 dev AM (Network Folder: existing arrangement)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h	
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	m					
South: The Northern Road														
1b	L3	35	15.2	35	15.2	0.038	16.3	LOS B	0.7	5.5	0.38	0.68	0.38	52.8
2	T1	1588	14.3	1588	14.3	* 0.874	31.6	LOS C	44.1	346.6	0.91	0.92	1.02	47.3
3a	R1	256	8.6	256	8.6	* 0.780	34.9	LOS C	9.0	67.5	1.00	0.88	1.13	32.3
Approach		1879	13.6	1879	13.6	0.874	31.7	LOS C	44.1	346.6	0.91	0.91	1.02	45.8
NorthEast: Adams Road														
24a	L1	413	10.2	413	10.2	0.687	33.9	LOS C	14.0	106.2	0.92	0.90	0.92	42.5
8	T1	1	0.0	1	0.0	0.005	49.1	LOS D	0.1	0.4	0.92	0.56	0.92	34.7
26b	R3	64	59.0	64	59.0	* 0.859	76.4	LOS F	4.1	42.9	1.00	0.96	1.55	25.4
Approach		478	16.7	478	16.7	0.859	39.7	LOS C	14.0	106.2	0.93	0.91	1.00	38.9
North: The Northern Road														
7b	L3	116	33.6	116	33.6	0.194	20.1	LOS B	2.3	21.0	0.63	0.74	0.63	44.8
8	T1	1147	19.4	1147	19.4	0.872	43.6	LOS D	33.2	270.4	0.99	1.00	1.16	40.9
9a	R1	35	15.2	35	15.2	0.246	59.8	LOS E	1.8	14.5	0.97	0.73	0.97	32.4
Approach		1298	20.5	1298	20.5	0.872	42.0	LOS C	33.2	270.4	0.96	0.97	1.10	40.8
SouthWest: Adams Road														
30a	L1	73	15.9	73	15.9	0.179	43.3	LOS D	3.1	24.9	0.84	0.74	0.84	36.2
2	T1	1	0.0	1	0.0	0.005	48.0	LOS D	0.1	0.4	0.92	0.54	0.92	23.6
32b	R3	73	15.9	73	15.9	0.775	69.1	LOS E	4.3	34.5	1.00	0.88	1.31	28.3
Approach		146	15.8	146	15.8	0.775	56.2	LOS D	4.3	34.5	0.92	0.81	1.07	31.7
All Vehicles		3801	16.4	3801	16.4	0.874	37.2	LOS C	44.1	346.6	0.93	0.92	1.05	42.3

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist	m			sec	m	m/sec
South: The Northern Road												
P11 Stage 1		53	49.3	LOS E	0.2	0.2		0.95	0.95	75.6	34.2	0.45
P12 Stage 2		53	22.8	LOS C	0.1	0.1		0.89	0.89	46.6	30.9	0.66
P1B Slip/ Bypass		53	49.3	LOS E	0.2	0.2		0.95	0.95	68.0	24.3	0.36
NorthEast: Adams Road												
P3 Full		53	49.3	LOS E	0.2	0.2		0.95	0.95	81.2	41.5	0.51

North: The Northern Road										
P31 Stage 1	53	49.3	LOS E	0.2	0.2	0.95	0.95	75.6	34.2	0.45
P32 Stage 2	53	49.3	LOS E	0.2	0.2	0.95	0.95	73.0	30.9	0.42
P3B Slip/ Bypass	53	22.8	LOS C	0.1	0.1	0.89	0.89	41.5	24.3	0.59
SouthWest: Adams Road										
P1 Full	53	49.3	LOS E	0.2	0.2	0.95	0.95	80.4	40.5	0.50
All Pedestrians	421	42.7	LOS E	0.2	0.2	0.93	0.93	67.7	32.6	0.48

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: 101 [2034 dev Elizabeth Dr/ Adams Rd AM (Site Folder: Network: N201 [2034 dev AM General]) (Network Folder: existing arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec		[ Veh. veh ]	Dist m				
SouthEast: Elizabeth Drive														
21	L2	24	34.8	24	34.8	0.016	7.6	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	154	15.8	154	15.8	0.084	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	80.0
Approach		178	18.3	178	18.3	0.084	1.0	NA	0.0	0.0	0.00	0.09	0.00	76.8
NorthWest: Elizabeth Drive														
28	T1	728	12.0	728	12.0	0.435	0.1	LOS A	0.7	5.7	0.09	0.06	0.09	77.5
29	R2	69	3.0	69	3.0	0.435	8.0	LOS A	0.7	5.7	0.09	0.06	0.09	72.7
Approach		798	11.2	798	11.2	0.435	0.8	NA	0.7	5.7	0.09	0.06	0.09	77.3
SouthWest: Adams Road														
30	L2	351	3.3	351	3.3	0.192	6.9	LOS A	0.9	6.3	0.25	0.59	0.25	54.8
32	R2	129	7.3	129	7.3	0.271	13.3	LOS A	0.8	6.2	0.72	0.91	0.81	54.0
Approach		480	4.4	480	4.4	0.271	8.6	LOS A	0.9	6.3	0.37	0.67	0.40	54.5
All Vehicles		1456	9.8	1456	9.8	0.435	3.4	NA	0.9	6.3	0.17	0.26	0.18	68.0

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

▼ Site: 101 [2034 dev Elizabeth Dr/ Luddenham Rd AM (Site Folder: General)]

■ Network: N201 [2034 dev AM (Network Folder: existing arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec		[ Veh. veh ]	Dist m				
SouthEast: Elizabeth Drive														
22	T1	322	22.5	322	22.5	0.184	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
23	R2	182	0.6	182	0.6	0.214	10.5	LOS A	0.9	6.5	0.62	0.85	0.62	56.5
Approach		504	14.6	504	14.6	0.214	3.8	NA	0.9	6.5	0.23	0.31	0.23	69.5
NorthEast: Luddenham Road														
24	L2	324	5.5	324	5.5	0.338	10.0	LOS A	1.7	12.5	0.56	0.84	0.65	56.1
26	R2	135	1.6	135	1.6	0.364	17.5	LOS B	1.4	9.7	0.79	0.97	1.01	54.7
Approach		459	4.4	459	4.4	0.364	12.2	LOS A	1.7	12.5	0.63	0.87	0.76	55.4
NorthWest: Elizabeth Drive														
27	L2	225	0.0	225	0.0	0.117	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	65.4
28	T1	474	10.7	474	10.7	0.251	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach		699	7.2	699	7.2	0.251	2.3	NA	0.0	0.0	0.00	0.20	0.00	72.1
All Vehicles		1662	8.7	1662	8.7	0.364	5.5	NA	1.7	12.5	0.24	0.42	0.28	66.1

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

**Site: 101 [2034 dev The Northern Rd/ Adams Rd PM (Site Folder: General)]**

**Network: N201 [2034 dev PM (Network Folder: existing arrangement)]**

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 130 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
<b>South: The Northern Road</b>														
1b	L3	71	10.4	71	10.4	0.069	15.6	LOS B	1.4	11.0	0.34	0.70	0.34	53.3
2	T1	1355	8.1	1355	8.1	0.617	18.0	LOS B	27.1	202.6	0.70	0.63	0.70	57.4
3a	R1	144	3.6	144	3.6	0.347	31.4	LOS C	5.0	36.0	0.89	0.77	0.89	34.4
Approach		1569	7.8	1569	7.8	0.617	19.1	LOS B	27.1	202.6	0.70	0.65	0.70	55.3
<b>NorthEast: Adams Road</b>														
24a	L1	556	4.2	556	4.2	* 0.828	44.1	LOS D	25.1	182.3	0.98	0.97	1.04	39.1
8	T1	1	0.0	1	0.0	0.006	58.6	LOS E	0.1	0.4	0.93	0.56	0.93	31.8
26b	R3	82	11.5	82	11.5	* 1.009	120.3	LOS F	7.3	56.3	1.00	1.07	1.90	20.9
Approach		639	5.1	639	5.1	1.009	53.9	LOS D	25.1	182.3	0.98	0.98	1.15	35.1
<b>North: The Northern Road</b>														
7b	L3	42	42.5	42	42.5	0.074	20.5	LOS B	0.8	8.1	0.58	0.70	0.58	44.5
8	T1	1375	6.2	1375	6.2	* 0.939	62.4	LOS E	52.7	388.4	1.00	1.09	1.25	33.8
9a	R1	72	10.3	72	10.3	* 0.522	71.4	LOS F	4.6	34.9	1.00	0.77	1.00	29.4
Approach		1488	7.4	1488	7.4	0.939	61.7	LOS E	52.7	388.4	0.99	1.06	1.22	33.7
<b>SouthWest: Adams Road</b>														
30a	L1	44	11.9	44	11.9	0.116	50.2	LOS D	2.3	17.4	0.84	0.72	0.84	33.9
2	T1	1	0.0	1	0.0	0.006	57.5	LOS E	0.1	0.4	0.93	0.55	0.93	21.1
32b	R3	43	9.8	43	9.8	0.525	76.3	LOS F	2.9	21.9	1.00	0.75	1.02	27.1
Approach		88	10.7	88	10.7	0.525	63.0	LOS E	2.9	21.9	0.92	0.73	0.93	30.1
All Vehicles		3785	7.3	3785	7.3	1.009	42.7	LOS D	52.7	388.4	0.86	0.87	0.98	40.2

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist m				sec	m	m/sec
<b>South: The Northern Road</b>												
P11 Stage 1		53	59.3	LOS E	0.2	0.2		0.96	0.96	85.6	34.2	0.40
P12 Stage 2		53	29.3	LOS C	0.1	0.1		0.91	0.91	53.1	30.9	0.58
P1B Slip/ Bypass		53	59.3	LOS E	0.2	0.2		0.96	0.96	78.0	24.3	0.31
<b>NorthEast: Adams Road</b>												
P3 Full		53	59.3	LOS E	0.2	0.2		0.96	0.96	91.2	41.5	0.46

North: The Northern Road										
P31 Stage 1	53	59.3	LOS E	0.2	0.2	0.96	0.96	85.6	34.2	0.40
P32 Stage 2	53	59.3	LOS E	0.2	0.2	0.96	0.96	83.0	30.9	0.37
P3B Slip/ Bypass	53	29.3	LOS C	0.1	0.1	0.91	0.91	48.0	24.3	0.51
SouthWest: Adams Road										
P1 Full	53	59.3	LOS E	0.2	0.2	0.96	0.96	90.4	40.5	0.45
All Pedestrians	421	51.8	LOS E	0.2	0.2	0.94	0.94	76.9	32.6	0.42

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: 101 [2034 dev Elizabeth Dr/ Adams Rd PM (Site Folder: Network: N201 [2034 dev PM General]) (Network Folder: existing arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec		[ Veh. veh ]	Dist m				
<b>SouthEast: Elizabeth Drive</b>														
21	L2	17	31.3	17	31.3	0.011	7.5	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	224	5.6	224	5.6	0.115	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		241	7.4	241	7.4	0.115	0.5	NA	0.0	0.0	0.00	0.04	0.00	78.3
<b>NorthWest: Elizabeth Drive</b>														
28	T1	481	2.8	481	2.8	0.334	0.4	LOS A	1.2	8.5	0.21	0.14	0.21	74.5
29	R2	129	0.0	129	0.0	0.334	8.0	LOS A	1.2	8.5	0.21	0.14	0.21	65.2
Approach		611	2.2	611	2.2	0.334	2.0	NA	1.2	8.5	0.21	0.14	0.21	73.6
<b>SouthWest: Adams Road</b>														
30	L2	359	1.2	359	1.2	0.205	7.0	LOS A	1.0	7.1	0.33	0.60	0.33	54.3
32	R2	147	2.9	147	2.9	0.231	10.8	LOS A	0.8	5.5	0.62	0.86	0.65	57.2
Approach		506	1.7	506	1.7	0.231	8.1	LOS A	1.0	7.1	0.41	0.68	0.42	55.5
All Vehicles		1358	2.9	1358	2.9	0.334	4.0	NA	1.2	8.5	0.25	0.32	0.25	65.7

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

▼ Site: 101 [2034 dev Elizabeth Dr/ Luddenham Rd PM (Site Folder: General)]

■ Network: N201 [2034 dev PM (Network Folder: existing arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
22	T1	484	7.2	484	7.2	0.253	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
23	R2	99	1.1	99	1.1	0.072	7.9	LOS A	0.3	2.3	0.38	0.62	0.38	58.8
Approach		583	6.1	583	6.1	0.253	1.4	NA	0.3	2.3	0.06	0.11	0.06	75.3
NorthEast: Luddenham Road														
24	L2	392	0.0	392	0.0	0.291	7.9	LOS A	1.4	9.8	0.37	0.64	0.37	58.6
26	R2	294	0.0	294	0.0	0.548	15.4	LOS B	2.8	19.9	0.76	1.02	1.22	56.8
Approach		685	0.0	685	0.0	0.548	11.1	LOS A	2.8	19.9	0.53	0.80	0.73	57.6
NorthWest: Elizabeth Drive														
27	L2	65	1.6	65	1.6	0.034	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	64.8
28	T1	219	4.8	219	4.8	0.112	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		284	4.1	284	4.1	0.112	1.6	NA	0.0	0.0	0.00	0.14	0.00	73.6
All Vehicles		1553	3.1	1553	3.1	0.548	5.7	NA	2.8	19.9	0.26	0.42	0.35	65.9

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

Site: 101 [2029 baseline The Northern Rd/ Adams Rd AM upgrade (Site Folder: General)]

Network: N201 [2029 baseline AM (Network Folder: upgraded arrangement)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	Veh. veh	Dist m					
South: The Northern Road														
1b	L3	29	14.3	29	14.3	0.033	19.6	LOS B	0.8	6.5	0.39	0.68	0.39	50.5
2	T1	1599	14.4	1599	14.4	* 1.163	219.3	LOS F	123.4	969.5	1.00	1.74	2.05	13.5
3a	R1	228	5.1	228	5.1	* 1.031	105.6	LOS F	16.8	122.5	1.00	1.07	1.71	18.9
Approach		1857	13.2	1857	13.2	1.163	202.1	LOS F	123.4	969.5	0.99	1.64	1.98	14.1
NorthEast: Adams Road														
24a	L1	331	8.0	331	8.0	0.740	50.8	LOS D	16.5	123.1	0.98	0.92	0.99	35.5
8	T1	1	0.0	1	0.0	0.006	68.1	LOS E	0.1	0.5	0.93	0.57	0.93	29.4
26b	R3	511	4.3	511	4.3	* 1.182	249.9	LOS F	77.8	564.5	1.00	1.32	2.18	11.8
Approach		842	5.8	842	5.8	1.182	171.5	LOS F	77.8	564.5	0.99	1.16	1.71	16.0
North: The Northern Road														
7b	L3	142	11.9	142	11.9	0.163	17.9	LOS B	3.3	25.6	0.48	0.73	0.48	52.0
8	T1	1111	19.3	1111	19.3	1.033	126.5	LOS F	62.9	513.1	1.00	1.31	1.58	21.0
9a	R1	29	14.3	29	14.3	0.231	79.4	LOS F	2.1	16.6	0.98	0.72	0.98	27.7
Approach		1282	18.4	1282	18.4	1.033	113.4	LOS F	62.9	513.1	0.94	1.23	1.44	22.6
SouthWest: Adams Road														
30a	L1	48	15.2	48	15.2	0.140	59.4	LOS E	2.9	23.0	0.86	0.73	0.86	31.1
2	T1	1	0.0	1	0.0	0.006	67.0	LOS E	0.1	0.5	0.93	0.55	0.93	29.8
32b	R3	48	15.2	48	15.2	0.120	50.5	LOS D	2.6	20.9	0.79	0.74	0.79	33.1
Approach		98	15.1	98	15.1	0.140	55.1	LOS D	2.9	23.0	0.82	0.73	0.82	32.0
All Vehicles		4079	13.3	4079	13.3	1.182	164.4	LOS F	123.4	969.5	0.97	1.39	1.73	16.7

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist m				sec	m	m/sec
South: The Northern Road												
P11 Stage 1		53	69.3	LOS F	0.2	0.2		0.96	0.96	95.6	34.2	0.36
P12 Stage 2		53	32.2	LOS D	0.1	0.1		0.92	0.92	56.0	30.9	0.55
P1B Slip/ Bypass		53	69.3	LOS F	0.2	0.2		0.96	0.96	88.0	24.3	0.28
NorthEast: Adams Road												
P3 Full		53	69.3	LOS F	0.2	0.2		0.96	0.96	101.2	41.5	0.41

North: The Northern Road										
P31 Stage 1	53	69.3	LOS F	0.2	0.2	0.96	0.96	95.6	34.2	0.36
P32 Stage 2	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.0	30.9	0.33
P3B Slip/ Bypass	53	32.2	LOS D	0.1	0.1	0.92	0.92	50.9	24.3	0.48
SouthWest: Adams Road										
P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.4	40.5	0.40
All Pedestrians	421	60.0	LOS F	0.2	0.2	0.95	0.95	85.1	32.6	0.38

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: 101 [2029 baseline Elizabeth Dr/ Adams Rd AM upgrade  
 (Site Folder: General)]

■ Network: N201 [2029  
 baseline AM (Network Folder:  
 upgraded arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
21	L2	6	0.0	6	0.0	0.004	6.9	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	102	15.5	102	15.5	0.056	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	80.0
Approach		108	14.6	108	14.6	0.056	0.4	NA	0.0	0.0	0.00	0.04	0.00	78.6
NorthWest: Elizabeth Drive														
28	T1	891	10.4	891	10.4	0.470	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
Approach		891	10.4	891	10.4	0.470	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.6
All Vehicles		999	10.9	999	10.9	0.470	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.5

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

▼ Site: 101 [2029 baseline Elizabeth Dr/ Luddenham Rd AM upgrade (Site Folder: General)]

■ Network: N201 [2029 baseline AM (Network Folder: upgraded arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
22	T1	282	19.8	282	19.8	0.159	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
23	R2	165	0.6	165	0.6	0.203	10.8	LOS A	0.9	6.1	0.63	0.86	0.63	56.3
Approach		447	12.7	447	12.7	0.203	4.0	NA	0.9	6.1	0.23	0.32	0.23	69.2
NorthEast: Luddenham Road														
24	L2	380	5.5	380	5.5	0.415	10.8	LOS A	2.4	17.5	0.61	0.91	0.80	54.8
26	R2	158	1.3	158	1.3	0.414	17.7	LOS B	1.6	11.6	0.80	0.98	1.08	54.6
Approach		538	4.3	538	4.3	0.415	12.8	LOS A	2.4	17.5	0.66	0.93	0.88	54.7
NorthWest: Elizabeth Drive														
27	L2	220	0.0	220	0.0	0.114	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	65.4
28	T1	511	9.1	511	9.1	0.268	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach		731	6.3	731	6.3	0.268	2.1	NA	0.0	0.0	0.00	0.19	0.00	72.5
All Vehicles		1716	7.4	1716	7.4	0.415	6.0	NA	2.4	17.5	0.27	0.45	0.34	65.2

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

Site: 101 [2029 baseline The Northern Rd/ Adams Rd PM upgrade (Site Folder: General)]

Network: N201 [2029 baseline PM (Network Folder: upgraded arrangement)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
South: The Northern Road														
1b	L3	47	11.1	47	11.1	0.048	17.8	LOS B	1.2	9.2	0.36	0.69	0.36	51.7
2	T1	1360	8.0	1360	8.0	0.915	58.1	LOS E	55.1	412.1	0.99	1.02	1.14	35.2
3a	R1	140	1.5	140	1.5	0.653	43.1	LOS D	5.5	38.7	1.00	0.80	1.02	39.3
Approach		1547	7.6	1547	7.6	0.915	55.5	LOS D	55.1	412.1	0.97	0.99	1.10	35.9
NorthEast: Adams Road														
24a	L1	461	3.7	461	3.7	* 1.030	103.9	LOS F	34.7	250.8	1.00	1.10	1.60	19.2
8	T1	1	0.0	1	0.0	0.006	68.1	LOS E	0.1	0.5	0.93	0.57	0.93	29.4
26b	R3	496	0.8	496	0.8	* 1.180	248.4	LOS F	75.0	529.2	1.00	1.32	2.18	11.9
Approach		958	2.2	958	2.2	1.180	178.6	LOS F	75.0	529.2	1.00	1.21	1.90	14.6
North: The Northern Road														
7b	L3	185	5.1	185	5.1	0.200	17.7	LOS B	4.4	32.3	0.49	0.74	0.49	53.4
8	T1	1433	6.2	1433	6.2	* 1.169	226.2	LOS F	108.2	797.7	1.00	1.69	2.09	13.1
9a	R1	48	10.9	48	10.9	0.372	80.4	LOS F	3.5	26.9	0.99	0.75	0.99	27.5
Approach		1666	6.3	1666	6.3	1.169	198.8	LOS F	108.2	797.7	0.94	1.56	1.88	14.5
SouthWest: Adams Road														
30a	L1	34	9.4	34	9.4	0.094	58.5	LOS E	2.0	15.1	0.85	0.71	0.85	31.7
2	T1	1	0.0	1	0.0	0.006	67.0	LOS E	0.1	0.5	0.93	0.55	0.93	29.8
32b	R3	33	9.7	33	9.7	0.082	51.4	LOS D	1.8	13.6	0.79	0.72	0.79	33.2
Approach		67	9.4	67	9.4	0.094	55.2	LOS D	2.0	15.1	0.82	0.71	0.82	32.4
All Vehicles		4239	5.9	4239	5.9	1.180	139.6	LOS F	108.2	797.7	0.96	1.26	1.58	18.8

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist m				sec	m	m/sec
South: The Northern Road												
P11 Stage 1		53	69.3	LOS F	0.2	0.2		0.96	0.96	95.6	34.2	0.36
P12 Stage 2		53	32.1	LOS D	0.1	0.1		0.92	0.92	55.8	30.9	0.55
P1B Slip/ Bypass		53	69.3	LOS F	0.2	0.2		0.96	0.96	88.0	24.3	0.28
NorthEast: Adams Road												
P3 Full		53	69.3	LOS F	0.2	0.2		0.96	0.96	101.2	41.5	0.41

North: The Northern Road										
P31 Stage 1	53	69.3	LOS F	0.2	0.2	0.96	0.96	95.6	34.2	0.36
P32 Stage 2	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.0	30.9	0.33
P3B Slip/ Bypass	53	32.1	LOS D	0.1	0.1	0.92	0.92	50.7	24.3	0.48
SouthWest: Adams Road										
P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.4	40.5	0.40
All Pedestrians	421	60.0	LOS E	0.2	0.2	0.95	0.95	85.0	32.6	0.38

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: 101 [2029 baseline Elizabeth Dr/ Adams Rd PM upgrade  
 (Site Folder: General)]

■ Network: N201 [2029  
 baseline PM (Network Folder:  
 upgraded arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
21	L2	9	11.1	9	11.1	0.006	7.1	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	187	5.6	187	5.6	0.096	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		197	5.9	197	5.9	0.096	0.4	NA	0.0	0.0	0.00	0.03	0.00	78.8
NorthWest: Elizabeth Drive														
28	T1	686	2.3	686	2.3	0.345	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach		686	2.3	686	2.3	0.345	0.0	NA	0.0	0.0	0.00	0.00	0.00	79.8
All Vehicles		883	3.1	883	3.1	0.345	0.1	NA	0.0	0.0	0.00	0.01	0.00	79.6

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

▼ Site: 101 [2029 baseline Elizabeth Dr/ Luddenham Rd PM upgrade (Site Folder: General)]

■ Network: N201 [2029 baseline PM (Network Folder: upgraded arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
22	T1	409	6.4	409	6.4	0.213	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
23	R2	84	1.3	84	1.3	0.061	7.9	LOS A	0.3	1.9	0.37	0.62	0.37	58.8
Approach		494	5.5	494	5.5	0.213	1.4	NA	0.3	1.9	0.06	0.10	0.06	75.3
NorthEast: Luddenham Road														
24	L2	483	0.0	483	0.0	0.354	7.9	LOS A	1.8	12.8	0.38	0.64	0.38	58.6
26	R2	361	0.0	361	0.0	0.589	14.5	LOS B	3.5	24.3	0.73	1.02	1.24	57.6
Approach		844	0.0	844	0.0	0.589	10.7	LOS A	3.5	24.3	0.53	0.80	0.75	58.0
NorthWest: Elizabeth Drive														
27	L2	68	1.5	68	1.5	0.036	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	64.9
28	T1	203	5.7	203	5.7	0.104	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		272	4.7	272	4.7	0.104	1.8	NA	0.0	0.0	0.00	0.16	0.00	73.2
All Vehicles		1609	2.5	1609	2.5	0.589	6.3	NA	3.5	24.3	0.30	0.48	0.41	64.7

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

**Site: 101 [2029 dev The Northern Rd/ Adams Rd AM upgrade (Site Folder: General)]**    **Network: N201 [2029 dev AM (Network Folder: upgraded arrangement)]**

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated    Cycle Time = 150 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
<b>South: The Northern Road</b>														
1b	L3	29	14.3	29	14.3	0.033	20.4	LOS B	0.8	6.8	0.41	0.68	0.41	50.0
2	T1	1599	14.4	1599	14.4	* 1.224	271.1	LOS F	136.7	1073.9	1.00	1.90	2.29	11.2
3a	R1	257	8.6	257	8.6	* 1.187	225.5	LOS F	30.3	227.5	1.00	1.28	2.27	11.5
Approach		1885	13.6	1885	13.6	1.224	261.0	LOS F	136.7	1073.9	0.99	1.80	2.26	11.4
<b>NorthEast: Adams Road</b>														
24a	L1	341	10.8	341	10.8	0.778	52.7	LOS D	18.0	138.0	0.99	0.94	1.04	34.6
8	T1	1	0.0	1	0.0	0.006	68.1	LOS E	0.1	0.5	0.93	0.57	0.93	29.4
26b	R3	544	10.1	544	10.1	* 1.217	278.4	LOS F	88.1	669.7	1.00	1.37	2.30	10.7
Approach		886	10.3	886	10.3	1.217	191.3	LOS F	88.1	669.7	1.00	1.21	1.82	14.6
<b>North: The Northern Road</b>														
7b	L3	186	21.5	186	21.5	0.225	18.5	LOS B	4.5	37.7	0.51	0.74	0.51	49.7
8	T1	1111	19.3	1111	19.3	1.099	173.8	LOS F	73.0	595.1	1.00	1.48	1.84	16.3
9a	R1	29	14.3	29	14.3	0.231	79.4	LOS F	2.1	16.6	0.98	0.72	0.98	27.7
Approach		1326	19.5	1326	19.5	1.099	149.9	LOS F	73.0	595.1	0.93	1.36	1.63	18.2
<b>SouthWest: Adams Road</b>														
30a	L1	48	15.2	48	15.2	0.140	59.3	LOS E	2.9	23.0	0.86	0.73	0.86	31.1
2	T1	1	0.0	1	0.0	0.006	67.0	LOS E	0.1	0.5	0.93	0.55	0.93	29.8
32b	R3	48	15.2	48	15.2	0.112	48.0	LOS D	2.6	20.3	0.77	0.74	0.77	33.8
Approach		98	15.1	98	15.1	0.140	53.8	LOS D	2.9	23.0	0.81	0.73	0.81	32.4
All Vehicles		4196	14.8	4196	14.8	1.224	206.3	LOS F	136.7	1073.9	0.97	1.51	1.93	13.9

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist m				sec	m	m/sec
<b>South: The Northern Road</b>												
P11 Stage 1		53	69.3	LOS F	0.2	0.2		0.96	0.96	95.6	34.2	0.36
P12 Stage 2		53	32.6	LOS D	0.1	0.1		0.92	0.92	56.4	30.9	0.55
P1B Slip/ Bypass		53	69.3	LOS F	0.2	0.2		0.96	0.96	88.0	24.3	0.28
<b>NorthEast: Adams Road</b>												
P3 Full		53	69.3	LOS F	0.2	0.2		0.96	0.96	101.2	41.5	0.41

North: The Northern Road										
P31 Stage 1	53	69.3	LOS F	0.2	0.2	0.96	0.96	95.6	34.2	0.36
P32 Stage 2	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.0	30.9	0.33
P3B Slip/ Bypass	53	32.6	LOS D	0.1	0.1	0.92	0.92	51.3	24.3	0.47
SouthWest: Adams Road										
P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.4	40.5	0.40
All Pedestrians	421	60.1	LOS F	0.2	0.2	0.95	0.95	85.2	32.6	0.38

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: 101 [2029 dev Elizabeth Dr/ Adams Rd AM upgrade (Site □ Network: N201 [2029 dev AM Folder: General])  
 (Network Folder: upgraded arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
21	L2	21	40.0	21	40.0	0.021	7.7	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	102	15.5	102	15.5	0.056	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	80.0
Approach		123	19.7	123	19.7	0.056	1.3	NA	0.0	0.0	0.00	0.11	0.00	76.0
NorthWest: Elizabeth Drive														
28	T1	901	11.3	901	11.3	0.479	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
Approach		901	11.3	901	11.3	0.479	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.5
All Vehicles		1024	12.3	1024	12.3	0.479	0.2	NA	0.0	0.0	0.00	0.01	0.00	79.2

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

▼ Site: 101 [2029 dev Elizabeth Dr/ Luddenham Rd AM upgrade □ Network: N201 [2029 dev AM  
 (Site Folder: General)] (Network Folder: upgraded arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
22	T1	282	19.8	282	19.8	0.158	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
23	R2	165	0.6	165	0.6	0.207	10.9	LOS A	0.9	6.2	0.64	0.86	0.64	56.1
Approach		447	12.7	447	12.7	0.207	4.0	NA	0.9	6.2	0.23	0.32	0.23	69.1
NorthEast: Luddenham Road														
24	L2	380	5.5	380	5.5	0.423	11.0	LOS A	2.4	17.9	0.62	0.92	0.82	54.4
26	R2	158	1.3	158	1.3	0.424	18.1	LOS B	1.7	11.9	0.81	0.99	1.10	54.2
Approach		538	4.3	538	4.3	0.424	13.1	LOS A	2.4	17.9	0.67	0.94	0.90	54.3
NorthWest: Elizabeth Drive														
27	L2	220	0.0	220	0.0	0.114	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	65.4
28	T1	521	10.7	521	10.7	0.276	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach		741	7.5	741	7.5	0.276	2.1	NA	0.0	0.0	0.00	0.19	0.00	72.5
All Vehicles		1726	7.9	1726	7.9	0.424	6.0	NA	2.4	17.9	0.27	0.46	0.34	65.0

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

Site: 101 [2029 dev The Northern Rd/ Adams Rd PM upgrade] Network: N201 [2029 dev PM (Network Folder: upgraded arrangement)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	Veh. veh	Dist m					
South: The Northern Road														
1b	L3	47	11.1	47	11.1	0.049	17.8	LOS B	1.2	9.2	0.36	0.69	0.36	51.7
2	T1	1360	8.0	1360	8.0	0.930	63.6	LOS E	57.6	430.6	0.99	1.05	1.18	33.4
3a	R1	143	3.7	143	3.7	0.678	43.7	LOS D	5.7	41.4	1.00	0.81	1.04	38.9
Approach		1551	7.7	1551	7.7	0.930	60.3	LOS E	57.6	430.6	0.97	1.02	1.14	34.2
NorthEast: Adams Road														
24a	L1	464	4.3	464	4.3	* 1.042	111.9	LOS F	36.7	266.1	1.00	1.12	1.64	18.4
8	T1	1	0.0	1	0.0	0.006	68.1	LOS E	0.1	0.5	0.93	0.57	0.93	29.4
26b	R3	509	3.3	509	3.3	* 1.202	265.7	LOS F	80.0	576.0	1.00	1.35	2.25	11.2
Approach		975	3.8	975	3.8	1.202	192.3	LOS F	80.0	576.0	1.00	1.24	1.96	13.8
North: The Northern Road														
7b	L3	194	9.2	194	9.2	0.214	17.5	LOS B	4.5	34.5	0.49	0.74	0.49	52.6
8	T1	1433	6.2	1433	6.2	* 1.191	244.9	LOS F	112.4	828.7	1.00	1.75	2.17	12.2
9a	R1	48	10.9	48	10.9	0.372	80.4	LOS F	3.5	26.9	0.99	0.75	0.99	27.5
Approach		1675	6.7	1675	6.7	1.191	213.8	LOS F	112.4	828.7	0.94	1.60	1.94	13.7
SouthWest: Adams Road														
30a	L1	34	9.4	34	9.4	0.094	58.5	LOS E	2.0	15.1	0.85	0.71	0.85	31.7
2	T1	1	0.0	1	0.0	0.006	67.0	LOS E	0.1	0.5	0.93	0.55	0.93	29.8
32b	R3	33	9.7	33	9.7	0.080	50.5	LOS D	1.8	13.4	0.78	0.72	0.78	33.5
Approach		67	9.4	67	9.4	0.094	54.8	LOS D	2.0	15.1	0.82	0.71	0.82	32.5
All Vehicles		4267	6.5	4267	6.5	1.202	150.6	LOS F	112.4	828.7	0.96	1.29	1.64	17.7

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist m				sec	m	m/sec
South: The Northern Road												
P11 Stage 1		53	69.3	LOS F	0.2	0.2		0.96	0.96	95.6	34.2	0.36
P12 Stage 2		53	32.1	LOS D	0.1	0.1		0.92	0.92	55.9	30.9	0.55
P1B Slip/ Bypass		53	69.3	LOS F	0.2	0.2		0.96	0.96	88.0	24.3	0.28
NorthEast: Adams Road												
P3 Full		53	69.3	LOS F	0.2	0.2		0.96	0.96	101.2	41.5	0.41

North: The Northern Road										
P31 Stage 1	53	69.3	LOS F	0.2	0.2	0.96	0.96	95.6	34.2	0.36
P32 Stage 2	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.0	30.9	0.33
P3B Slip/ Bypass	53	32.1	LOS D	0.1	0.1	0.92	0.92	50.8	24.3	0.48
SouthWest: Adams Road										
P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.4	40.5	0.40
All Pedestrians	421	60.0	LOS E	0.2	0.2	0.95	0.95	85.1	32.6	0.38

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: 101 [2029 dev Elizabeth Dr/ Adams Rd PM upgrade (Site □ Network: N201 [2029 dev PM Folder: General])  
 □ Network: N201 [2029 dev PM (Network Folder: upgraded arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
21	L2	15	35.7	15	35.7	0.012	7.6	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	187	5.6	187	5.6	0.096	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		202	7.8	202	7.8	0.096	0.6	NA	0.0	0.0	0.00	0.05	0.00	78.2
NorthWest: Elizabeth Drive														
28	T1	568	3.5	568	3.5	0.288	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach		568	3.5	568	3.5	0.288	0.0	NA	0.0	0.0	0.00	0.00	0.00	79.8
All Vehicles		771	4.6	771	4.6	0.288	0.2	NA	0.0	0.0	0.00	0.01	0.00	79.5

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

▼ Site: 101 [2029 dev Elizabeth Dr/ Luddenham Rd PM upgrade □ Network: N201 [2029 dev PM  
 (Site Folder: General) (Network Folder: upgraded arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
22	T1	409	6.4	409	6.4	0.213	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
23	R2	84	1.3	84	1.3	0.061	7.9	LOS A	0.3	1.9	0.37	0.62	0.37	58.8
Approach		494	5.5	494	5.5	0.213	1.4	NA	0.3	1.9	0.06	0.11	0.06	75.3
NorthEast: Luddenham Road														
24	L2	483	0.0	483	0.0	0.357	7.9	LOS A	1.8	12.9	0.38	0.64	0.38	58.5
26	R2	361	0.0	361	0.0	0.593	14.7	LOS B	3.5	24.6	0.73	1.03	1.26	57.5
Approach		844	0.0	844	0.0	0.593	10.8	LOS A	3.5	24.6	0.53	0.81	0.76	57.9
NorthWest: Elizabeth Drive														
27	L2	68	1.5	68	1.5	0.036	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	64.9
28	T1	208	7.6	208	7.6	0.108	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		277	6.1	277	6.1	0.108	1.7	NA	0.0	0.0	0.00	0.16	0.00	73.3
All Vehicles		1615	2.7	1615	2.7	0.593	6.4	NA	3.5	24.6	0.30	0.48	0.42	64.7

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

Site: 101 [2034 baseline The Northern Rd/ Adams Rd AM upgrade (Site Folder: General)]

Network: N201 [2034 baseline AM (Network Folder: upgraded arrangement)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
South: The Northern Road														
1b	L3	35	15.2	35	15.2	0.038	19.3	LOS B	0.9	7.6	0.39	0.69	0.39	50.7
2	T1	1588	14.3	1588	14.3	* 1.174	228.8	LOS F	124.7	979.6	1.00	1.77	2.10	13.0
3a	R1	227	5.1	227	5.1	* 1.026	102.9	LOS F	16.6	120.9	1.00	1.07	1.69	19.2
Approach		1851	13.2	1851	13.2	1.174	209.4	LOS F	124.7	979.6	0.99	1.66	2.02	13.7
NorthEast: Adams Road														
24a	L1	402	7.9	402	7.9	0.899	69.4	LOS E	26.6	199.1	1.00	1.04	1.21	30.1
8	T1	1	0.0	1	0.0	0.006	68.1	LOS E	0.1	0.5	0.93	0.57	0.93	29.4
26b	R3	511	5.2	511	5.2	* 1.160	231.8	LOS F	74.9	547.3	1.00	1.29	2.10	12.6
Approach		914	6.3	914	6.3	1.160	160.2	LOS F	74.9	547.3	1.00	1.18	1.71	16.9
North: The Northern Road														
7b	L3	141	12.7	141	12.7	0.163	17.9	LOS B	3.3	25.6	0.48	0.73	0.48	51.8
8	T1	1147	19.4	1147	19.4	1.088	165.0	LOS F	73.5	599.9	1.00	1.46	1.79	17.0
9a	R1	35	15.2	35	15.2	0.274	79.8	LOS F	2.5	19.7	0.98	0.73	0.98	27.6
Approach		1323	18.5	1323	18.5	1.088	147.1	LOS F	73.5	599.9	0.94	1.36	1.63	18.5
SouthWest: Adams Road														
30a	L1	73	15.9	73	15.9	0.211	60.4	LOS E	4.4	35.3	0.88	0.75	0.88	30.8
2	T1	1	0.0	1	0.0	0.006	67.0	LOS E	0.1	0.5	0.93	0.55	0.93	29.8
32b	R3	73	15.9	73	15.9	0.176	50.5	LOS D	4.0	31.9	0.80	0.76	0.80	33.0
Approach		146	15.8	146	15.8	0.211	55.5	LOS D	4.4	35.3	0.84	0.75	0.84	31.8
All Vehicles		4234	13.5	4234	13.5	1.174	174.0	LOS F	124.7	979.6	0.97	1.43	1.79	16.0

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist m				sec	m	m/sec
South: The Northern Road												
P11 Stage 1		53	69.3	LOS F	0.2	0.2		0.96	0.96	95.6	34.2	0.36
P12 Stage 2		53	32.4	LOS D	0.1	0.1		0.92	0.92	56.1	30.9	0.55
P1B Slip/ Bypass		53	69.3	LOS F	0.2	0.2		0.96	0.96	88.0	24.3	0.28
NorthEast: Adams Road												
P3 Full		53	69.3	LOS F	0.2	0.2		0.96	0.96	101.2	41.5	0.41

North: The Northern Road										
P31 Stage 1	53	69.3	LOS F	0.2	0.2	0.96	0.96	95.6	34.2	0.36
P32 Stage 2	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.0	30.9	0.33
P3B Slip/ Bypass	53	32.4	LOS D	0.1	0.1	0.92	0.92	51.0	24.3	0.48
SouthWest: Adams Road										
P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.4	40.5	0.40
All Pedestrians	421	60.0	LOS F	0.2	0.2	0.95	0.95	85.1	32.6	0.38

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: 101 [2034 baseline Elizabeth Dr/ Adams Rd AM upgrade  
 (Site Folder: General)]

■ Network: N201 [2034  
 baseline AM (Network Folder:  
 upgraded arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
21	L2	9	0.0	9	0.0	0.006	6.9	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	154	15.8	154	15.8	0.084	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	80.0
Approach		163	14.8	163	14.8	0.084	0.4	NA	0.0	0.0	0.00	0.04	0.00	78.6
NorthWest: Elizabeth Drive														
28	T1	847	10.3	847	10.3	0.447	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
Approach		847	10.3	847	10.3	0.447	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.6
All Vehicles		1011	11.0	1011	11.0	0.447	0.1	NA	0.0	0.0	0.00	0.01	0.00	79.5

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

▼ Site: 101 [2034 baseline Elizabeth Dr/ Luddenham Rd AM upgrade (Site Folder: General)]

■ Network: N201 [2034 baseline AM (Network Folder: upgraded arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec		[ Veh. veh ]	Dist m				
SouthEast: Elizabeth Drive														
22	T1	311	19.7	311	19.7	0.174	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
23	R2	182	0.6	182	0.6	0.229	11.0	LOS A	1.0	7.0	0.64	0.87	0.65	56.0
Approach		493	12.6	493	12.6	0.229	4.1	NA	1.0	7.0	0.24	0.32	0.24	69.0
NorthEast: Luddenham Road														
24	L2	324	5.5	324	5.5	0.360	10.6	LOS A	1.9	13.7	0.59	0.88	0.72	55.2
26	R2	135	1.6	135	1.6	0.385	18.5	LOS B	1.5	10.3	0.81	0.98	1.05	53.9
Approach		459	4.4	459	4.4	0.385	12.9	LOS A	1.9	13.7	0.66	0.91	0.82	54.6
NorthWest: Elizabeth Drive														
27	L2	225	0.0	225	0.0	0.117	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	65.4
28	T1	523	9.3	523	9.3	0.274	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach		748	6.5	748	6.5	0.274	2.1	NA	0.0	0.0	0.00	0.19	0.00	72.5
All Vehicles		1700	7.7	1700	7.7	0.385	5.6	NA	1.9	13.7	0.25	0.42	0.29	65.8

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

Site: 101 [2034 baseline The Northern Rd/ Adams Rd PM upgrade (Site Folder: General)]

Network: N201 [2034 baseline PM (Network Folder: upgraded arrangement)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
South: The Northern Road														
1b	L3	71	10.4	71	10.4	0.070	17.6	LOS B	1.7	13.4	0.36	0.70	0.36	51.8
2	T1	1355	8.1	1355	8.1	0.976	85.5	LOS F	65.0	486.0	1.00	1.16	1.33	27.8
3a	R1	141	1.5	141	1.5	0.589	41.8	LOS C	5.8	40.9	0.99	0.79	0.99	39.9
Approach		1566	7.6	1566	7.6	0.976	78.5	LOS F	65.0	486.0	0.97	1.10	1.25	29.3
NorthEast: Adams Road														
24a	L1	553	3.6	553	3.6	* 1.170	212.1	LOS F	64.0	462.0	1.00	1.35	2.12	12.2
8	T1	1	0.0	1	0.0	0.006	68.1	LOS E	0.1	0.5	0.93	0.57	0.93	29.4
26b	R3	575	0.9	575	0.9	* 1.242	298.3	LOS F	96.2	678.6	1.00	1.40	2.39	10.2
Approach		1128	2.2	1128	2.2	1.242	255.9	LOS F	96.2	678.6	1.00	1.38	2.25	11.1
North: The Northern Road														
7b	L3	163	5.8	163	5.8	0.183	17.9	LOS B	3.8	28.3	0.50	0.74	0.50	53.1
8	T1	1375	6.2	1375	6.2	* 1.255	299.3	LOS F	116.9	861.1	1.00	1.88	2.41	10.3
9a	R1	72	10.3	72	10.3	0.547	81.7	LOS F	5.3	40.2	1.00	0.77	1.00	27.2
Approach		1609	6.3	1609	6.3	1.255	261.1	LOS F	116.9	861.1	0.95	1.71	2.15	11.5
SouthWest: Adams Road														
30a	L1	44	11.9	44	11.9	0.125	58.9	LOS E	2.6	20.4	0.86	0.72	0.86	31.4
2	T1	1	0.0	1	0.0	0.006	67.0	LOS E	0.1	0.5	0.93	0.55	0.93	29.8
32b	R3	43	9.8	43	9.8	0.099	48.5	LOS D	2.3	17.4	0.77	0.73	0.77	34.1
Approach		88	10.7	88	10.7	0.125	53.9	LOS D	2.6	20.4	0.81	0.73	0.81	32.7
All Vehicles		4393	5.8	4393	5.8	1.255	190.5	LOS F	116.9	861.1	0.97	1.39	1.83	14.8

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist m				sec	m	m/sec
South: The Northern Road												
P11 Stage 1		53	69.3	LOS F	0.2	0.2		0.96	0.96	95.6	34.2	0.36
P12 Stage 2		53	32.5	LOS D	0.1	0.1		0.92	0.92	56.2	30.9	0.55
P1B Slip/ Bypass		53	69.3	LOS F	0.2	0.2		0.96	0.96	88.0	24.3	0.28
NorthEast: Adams Road												
P3 Full		53	69.3	LOS F	0.2	0.2		0.96	0.96	101.2	41.5	0.41

North: The Northern Road										
P31 Stage 1	53	69.3	LOS F	0.2	0.2	0.96	0.96	95.6	34.2	0.36
P32 Stage 2	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.0	30.9	0.33
P3B Slip/ Bypass	53	32.5	LOS D	0.1	0.1	0.92	0.92	51.2	24.3	0.47
SouthWest: Adams Road										
P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.4	40.5	0.40
All Pedestrians	421	60.1	LOS F	0.2	0.2	0.95	0.95	85.2	32.6	0.38

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: 101 [2034 baseline Elizabeth Dr/ Adams Rd PM upgrade  
 (Site Folder: General)]

■ Network: N201 [2034  
 baseline PM (Network Folder:  
 upgraded arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance													
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m				
SouthEast: Elizabeth Drive													
21	L2	12	9.1	12	9.1	0.010	7.1	LOS A	0.0	0.0	0.00	0.63	0.00
22	T1	224	5.6	224	5.6	0.115	0.0	LOS A	0.0	0.0	0.00	0.00	0.00
Approach		236	5.8	236	5.8	0.115	0.4	NA	0.0	0.0	0.00	0.03	0.00
NorthWest: Elizabeth Drive													
28	T1	623	2.2	623	2.2	0.313	0.0	LOS A	0.0	0.0	0.00	0.00	0.00
Approach		623	2.2	623	2.2	0.313	0.0	NA	0.0	0.0	0.00	0.00	0.00
All Vehicles		859	3.2	859	3.2	0.313	0.1	NA	0.0	0.0	0.00	0.01	0.00
79.6													

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

▼ Site: 101 [2034 baseline Elizabeth Dr/ Luddenham Rd PM upgrade (Site Folder: General)]

■ Network: N201 [2034 baseline PM (Network Folder: upgraded arrangement)]

Site Category: (None)  
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
22	T1	480	6.4	480	6.4	0.249	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
23	R2	99	1.1	99	1.1	0.073	8.0	LOS A	0.3	2.3	0.39	0.63	0.39	58.8
Approach		579	5.5	579	5.5	0.249	1.4	NA	0.3	2.3	0.07	0.11	0.07	75.2
NorthEast: Luddenham Road														
24	L2	392	0.0	392	0.0	0.295	7.9	LOS A	1.4	9.9	0.38	0.65	0.38	58.6
26	R2	294	0.0	294	0.0	0.551	15.5	LOS B	2.9	20.1	0.76	1.02	1.23	56.7
Approach		685	0.0	685	0.0	0.551	11.2	LOS A	2.9	20.1	0.54	0.81	0.74	57.5
NorthWest: Elizabeth Drive														
27	L2	65	1.6	65	1.6	0.034	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	64.8
28	T1	232	4.5	232	4.5	0.118	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		297	3.9	297	3.9	0.118	1.5	NA	0.0	0.0	0.00	0.14	0.00	73.8
All Vehicles		1561	2.8	1561	2.8	0.551	5.7	NA	2.9	20.1	0.26	0.42	0.35	65.9

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

**Site: 101 [2034 dev The Northern Rd/ Adams Rd AM upgrade (Site Folder: General)]**    **Network: N201 [2034 dev AM (Network Folder: upgraded arrangement)]**

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated    Cycle Time = 150 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	Veh. veh	m					
South: The Northern Road														
1b	L3	35	15.2	35	15.2	0.038	19.7	LOS B	1.0	7.7	0.39	0.69	0.39	50.4
2	T1	1588	14.3	1588	14.3	* 1.217	265.4	LOS F	134.2	1054.3	1.00	1.88	2.26	11.4
3a	R1	256	8.6	256	8.6	* 1.120	170.9	LOS F	25.6	192.3	1.00	1.20	2.02	14.0
Approach		1879	13.6	1879	13.6	1.217	248.0	LOS F	134.2	1054.3	0.99	1.77	2.20	11.9
NorthEast: Adams Road														
24a	L1	413	10.2	413	10.2	0.913	70.0	LOS E	27.6	209.9	1.00	1.04	1.24	29.8
8	T1	1	0.0	1	0.0	0.006	68.1	LOS E	0.1	0.5	0.93	0.57	0.93	29.4
26b	R3	544	10.8	544	10.8	* 1.223	283.3	LOS F	88.9	679.8	1.00	1.38	2.33	10.6
Approach		958	10.5	958	10.5	1.223	191.2	LOS F	88.9	679.8	1.00	1.24	1.86	14.6
North: The Northern Road														
7b	L3	185	22.2	185	22.2	0.227	18.7	LOS B	4.5	37.7	0.51	0.74	0.51	49.4
8	T1	1147	19.4	1147	19.4	1.158	220.3	LOS F	84.4	688.4	1.00	1.64	2.07	13.4
9a	R1	35	15.2	35	15.2	0.274	79.8	LOS F	2.5	19.7	0.98	0.73	0.98	27.6
Approach		1367	19.6	1367	19.6	1.158	189.4	LOS F	84.4	688.4	0.93	1.49	1.83	15.1
SouthWest: Adams Road														
30a	L1	73	15.9	73	15.9	0.211	60.3	LOS E	4.4	35.3	0.88	0.75	0.88	30.8
2	T1	1	0.0	1	0.0	0.006	67.0	LOS E	0.1	0.5	0.93	0.55	0.93	29.8
32b	R3	73	15.9	73	15.9	0.168	48.8	LOS D	3.9	31.2	0.78	0.75	0.78	33.5
Approach		146	15.8	146	15.8	0.211	54.6	LOS D	4.4	35.3	0.83	0.75	0.83	32.1
All Vehicles		4351	14.9	4351	14.9	1.223	210.6	LOS F	134.2	1054.3	0.97	1.53	1.96	13.6

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist	m			sec	m	m/sec
South: The Northern Road												
P11 Stage 1		53	69.3	LOS F	0.2	0.2		0.96	0.96	95.6	34.2	0.36
P12 Stage 2		53	32.6	LOS D	0.1	0.1		0.92	0.92	56.4	30.9	0.55
P1B Slip/ Bypass		53	69.3	LOS F	0.2	0.2		0.96	0.96	88.0	24.3	0.28
NorthEast: Adams Road												
P3 Full		53	69.3	LOS F	0.2	0.2		0.96	0.96	101.2	41.5	0.41

North: The Northern Road										
P31 Stage 1	53	69.3	LOS F	0.2	0.2	0.96	0.96	95.6	34.2	0.36
P32 Stage 2	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.0	30.9	0.33
P3B Slip/ Bypass	53	32.6	LOS D	0.1	0.1	0.92	0.92	51.3	24.3	0.47
SouthWest: Adams Road										
P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.4	40.5	0.40
All Pedestrians	421	60.1	LOS F	0.2	0.2	0.95	0.95	85.2	32.6	0.38

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: 101 [2034 dev Elizabeth Dr/ Adams Rd AM upgrade (Site □ Network: N201 [2034 dev AM Folder: General])  
 (Network Folder: upgraded arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
SouthEast: Elizabeth Drive														
21	L2	24	34.8	24	34.8	0.023	7.6	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	154	15.8	154	15.8	0.084	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	80.0
Approach		178	18.3	178	18.3	0.084	1.0	NA	0.0	0.0	0.00	0.09	0.00	76.8
NorthWest: Elizabeth Drive														
28	T1	858	11.3	858	11.3	0.456	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
Approach		858	11.3	858	11.3	0.456	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.6
All Vehicles		1036	12.5	1036	12.5	0.456	0.2	NA	0.0	0.0	0.00	0.01	0.00	79.2

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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## MOVEMENT SUMMARY

▼ Site: 101 [2034 dev Elizabeth Dr/ Luddenham Rd AM upgrade □ Network: N201 [2034 dev AM  
 (Site Folder: General) (Network Folder: upgraded arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec		[ Veh. veh ]	Dist m				
SouthEast: Elizabeth Drive														
22	T1	311	19.7	311	19.7	0.174	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
23	R2	182	0.6	182	0.6	0.234	11.2	LOS A	1.0	7.2	0.65	0.87	0.66	55.8
Approach		493	12.6	493	12.6	0.234	4.1	NA	1.0	7.2	0.24	0.32	0.25	68.9
NorthEast: Luddenham Road														
24	L2	324	5.5	324	5.5	0.368	10.7	LOS A	1.9	14.0	0.60	0.89	0.75	54.9
26	R2	135	1.6	135	1.6	0.395	18.9	LOS B	1.5	10.6	0.82	0.99	1.07	53.6
Approach		459	4.4	459	4.4	0.395	13.1	LOS A	1.9	14.0	0.67	0.92	0.84	54.3
NorthWest: Elizabeth Drive														
27	L2	225	0.0	225	0.0	0.117	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	65.4
28	T1	534	10.8	534	10.8	0.283	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach		759	7.6	759	7.6	0.283	2.1	NA	0.0	0.0	0.00	0.19	0.00	72.5
All Vehicles		1711	8.2	1711	8.2	0.395	5.7	NA	1.9	14.0	0.25	0.42	0.30	65.7

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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Project: T:\Jobs\2019\J190749 - CPG Luddenham Quarry\Technical studies\Transport\SIDRA\210608 Addendum TIA additional scenarios.sip9

## MOVEMENT SUMMARY

Site: 101 [2034 dev The Northern Rd/ Adams Rd PM upgrade] Network: N201 [2034 dev PM (Network Folder: upgraded arrangement)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec	[ Veh. veh ]	Dist m					
South: The Northern Road														
1b	L3	71	10.4	71	10.4	0.070	17.6	LOS B	1.7	13.4	0.36	0.70	0.36	51.8
2	T1	1355	8.1	1355	8.1	0.993	95.5	LOS F	68.4	511.4	1.00	1.20	1.39	25.9
3a	R1	144	3.6	144	3.6	0.645	42.9	LOS D	6.0	43.5	1.00	0.80	1.01	39.2
Approach		1569	7.8	1569	7.8	0.993	87.2	LOS F	68.4	511.4	0.97	1.14	1.31	27.3
NorthEast: Adams Road														
24a	L1	556	4.2	556	4.2	* 1.213	248.5	LOS F	70.8	513.1	1.00	1.41	2.28	10.9
8	T1	1	0.0	1	0.0	0.006	68.1	LOS E	0.1	0.5	0.93	0.57	0.93	29.4
26b	R3	588	3.0	588	3.0	* 1.259	313.3	LOS F	101.1	726.4	1.00	1.43	2.45	9.8
Approach		1145	3.6	1145	3.6	1.259	281.6	LOS F	101.1	726.4	1.00	1.42	2.36	10.3
North: The Northern Road														
7b	L3	172	10.4	172	10.4	0.195	17.9	LOS B	4.1	31.2	0.49	0.74	0.49	52.1
8	T1	1375	6.2	1375	6.2	* 1.256	300.3	LOS F	117.2	863.4	1.00	1.88	2.41	10.2
9a	R1	72	10.3	72	10.3	0.547	81.7	LOS F	5.3	40.2	1.00	0.77	1.00	27.2
Approach		1618	6.8	1618	6.8	1.256	260.7	LOS F	117.2	863.4	0.95	1.71	2.15	11.5
SouthWest: Adams Road														
30a	L1	44	11.9	44	11.9	0.125	58.9	LOS E	2.6	20.4	0.86	0.72	0.86	31.4
2	T1	1	0.0	1	0.0	0.006	67.0	LOS E	0.1	0.5	0.93	0.55	0.93	29.8
32b	R3	43	9.8	43	9.8	0.096	47.6	LOS D	2.3	17.2	0.76	0.73	0.76	34.4
Approach		88	10.7	88	10.7	0.125	53.5	LOS D	2.6	20.4	0.81	0.72	0.81	32.8
All Vehicles		4421	6.4	4421	6.4	1.259	200.4	LOS F	117.2	863.4	0.97	1.41	1.88	14.2

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

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

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

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

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

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

\* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE			Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[ Ped ped ]	Dist m				sec	m	m/sec
South: The Northern Road												
P11 Stage 1		53	69.3	LOS F	0.2	0.2		0.96	0.96	95.6	34.2	0.36
P12 Stage 2		53	32.6	LOS D	0.1	0.1		0.92	0.92	56.4	30.9	0.55
P1B Slip/ Bypass		53	69.3	LOS F	0.2	0.2		0.96	0.96	88.0	24.3	0.28
NorthEast: Adams Road												
P3 Full		53	69.3	LOS F	0.2	0.2		0.96	0.96	101.2	41.5	0.41

North: The Northern Road										
P31 Stage 1	53	69.3	LOS F	0.2	0.2	0.96	0.96	95.6	34.2	0.36
P32 Stage 2	53	69.3	LOS F	0.2	0.2	0.96	0.96	93.0	30.9	0.33
P3B Slip/ Bypass	53	32.6	LOS D	0.1	0.1	0.92	0.92	51.3	24.3	0.47
SouthWest: Adams Road										
P1 Full	53	69.3	LOS F	0.2	0.2	0.96	0.96	100.4	40.5	0.40
All Pedestrians	421	60.1	LOS F	0.2	0.2	0.95	0.95	85.2	32.6	0.38

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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Project: T:\Jobs\2019\J190749 - CPG Luddenham Quarry\Technical studies\Transport\SIDRA\210608 Addendum TIA additional scenarios.sip9

## MOVEMENT SUMMARY

▼ Site: 101 [2034 dev Elizabeth Dr/ Adams Rd PM upgrade (Site □ Network: N201 [2034 dev PM Folder: General])  
 (Network Folder: upgraded arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec		[ Veh. veh ]	Dist m				
SouthEast: Elizabeth Drive														
21	L2	17	31.3	17	31.3	0.018	7.5	LOS A	0.0	0.0	0.00	0.63	0.00	61.6
22	T1	224	5.6	224	5.6	0.115	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		241	7.4	241	7.4	0.115	0.5	NA	0.0	0.0	0.00	0.04	0.00	78.3
NorthWest: Elizabeth Drive														
28	T1	486	3.7	486	3.7	0.246	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach		486	3.7	486	3.7	0.246	0.0	NA	0.0	0.0	0.00	0.00	0.00	79.8
All Vehicles		727	4.9	727	4.9	0.246	0.2	NA	0.0	0.0	0.00	0.01	0.00	79.4

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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Project: T:\Jobs\2019\J190749 - CPG Luddenham Quarry\Technical studies\Transport\SIDRA\210608 Addendum TIA additional scenarios.sip9

## MOVEMENT SUMMARY

▼ Site: 101 [2034 dev Elizabeth Dr/ Luddenham Rd PM upgrade □ Network: N201 [2034 dev PM  
 (Site Folder: General) (Network Folder: upgraded arrangement)]

Site Category: (None)  
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[ Total veh/h ]	HV %	[ Total veh/h ]	HV %	v/c	sec		[ Veh. veh ]	Dist m				
SouthEast: Elizabeth Drive														
22	T1	480	6.4	480	6.4	0.249	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
23	R2	99	1.1	99	1.1	0.073	8.0	LOS A	0.3	2.3	0.39	0.63	0.39	58.8
Approach		579	5.5	579	5.5	0.249	1.4	NA	0.3	2.3	0.07	0.11	0.07	75.2
NorthEast: Luddenham Road														
24	L2	392	0.0	392	0.0	0.297	8.0	LOS A	1.4	10.0	0.39	0.65	0.39	58.5
26	R2	294	0.0	294	0.0	0.556	15.7	LOS B	2.9	20.3	0.76	1.02	1.24	56.6
Approach		685	0.0	685	0.0	0.556	11.3	LOS A	2.9	20.3	0.55	0.81	0.75	57.4
NorthWest: Elizabeth Drive														
27	L2	65	1.6	65	1.6	0.034	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	64.8
28	T1	237	6.2	237	6.2	0.122	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		302	5.2	302	5.2	0.122	1.5	NA	0.0	0.0	0.00	0.14	0.00	73.9
All Vehicles		1566	3.0	1566	3.0	0.556	5.7	NA	2.9	20.3	0.26	0.42	0.35	65.9

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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Appendix C

## Elizabeth Drive/Adams Road intersection concept design

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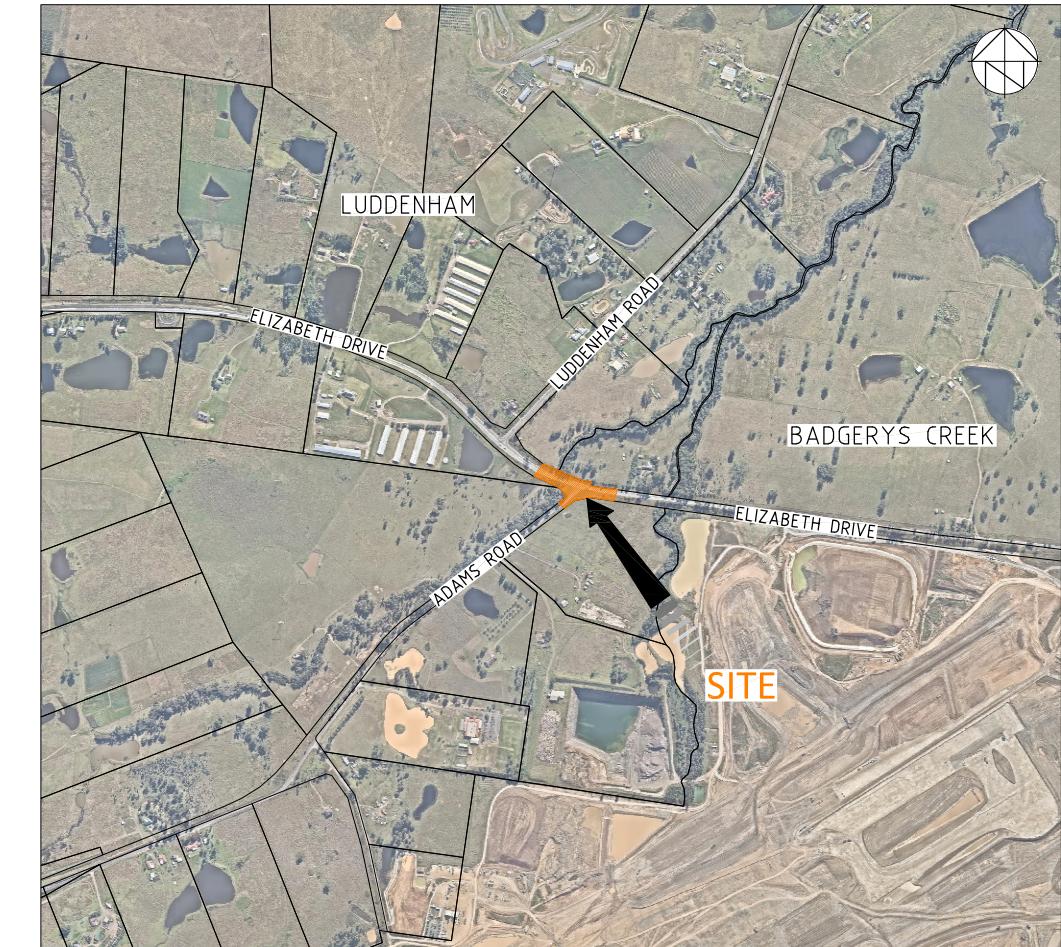


Transport  
for NSW

# LUDDENHAM ELIZABETH DRIVE - ADAMS ROAD INTERSECTION UPGRADE

## STRATEGIC CONCEPT DESIGN

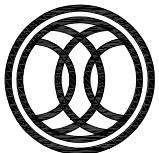
JULY 2021



LOCALITY PLAN

NAME	DRAWING TITLE
7472-CD-000	COVER SHEET
7472-CD-001	KEY PLAN
7472-CD-011	ROADWORKS PLAN SHEET 1 OF 2
7472-CD-012	ROADWORKS PLAN SHEET 2 OF 2
7472-CD-015	STORMWATER MANAGEMENT PLAN
7472-CD-021	TURNING MOVEMENTS PLAN SHEET 1 OF 2
7472-CD-022	TURNING MOVEMENTS PLAN SHEET 2 OF 2

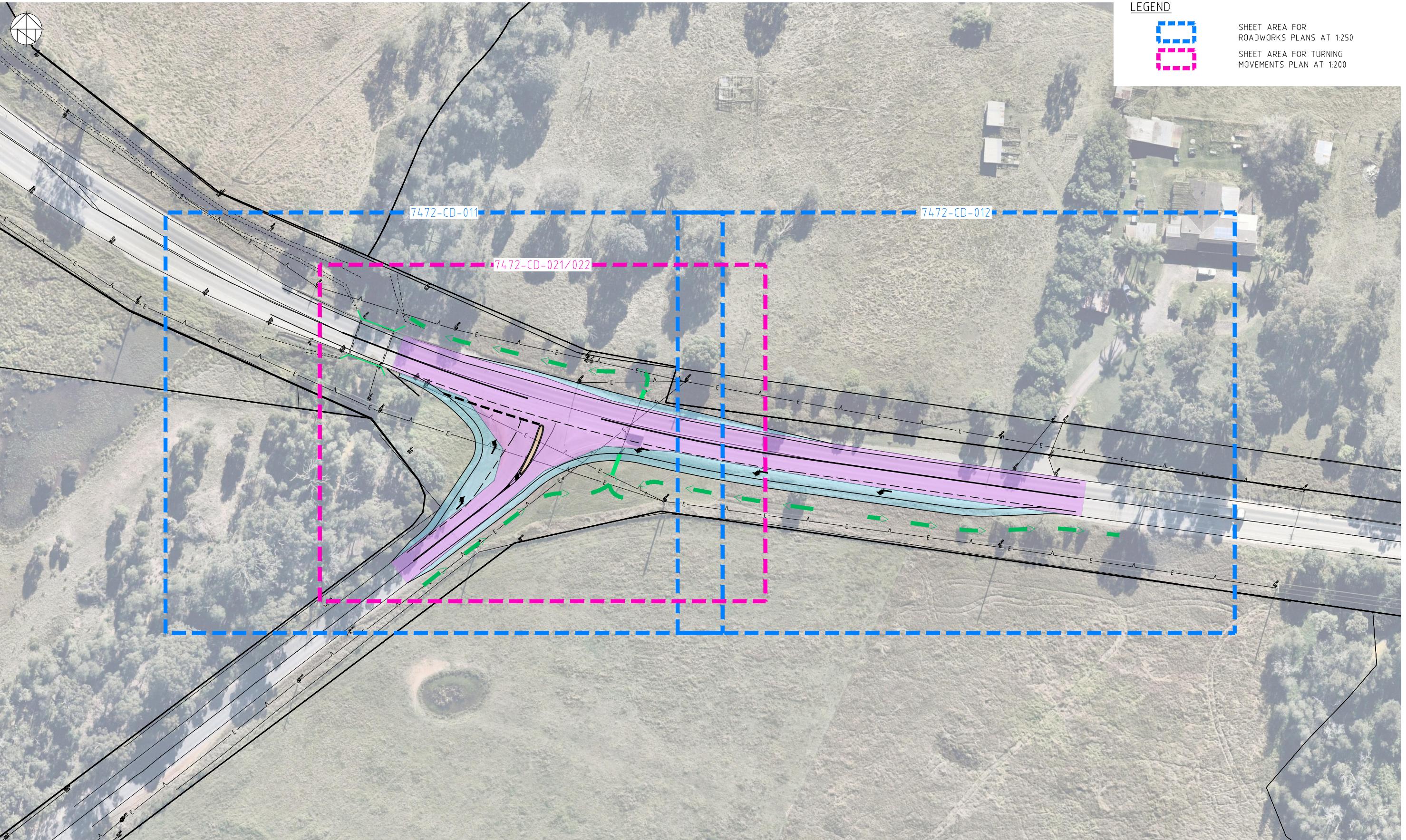
DRAWING SCHEDULE



COOMBES  
PROPERTY GROUP

INDESCO

7472-CD-000



KEY PLAN  
SCALE 1:500

A1 PLOT 0 5 10 15 20 100  
A3 PLOT 0 5 10 15 20 100

No.	AMENDMENT	APPROVED	DATE	AMENDED BY
B	STRATEGIC CONCEPT DESIGN	MM	15.07.2021	PM
A	CONCEPT DESIGN	MM	12.07.2021	PM

CLIENT  
**COOMBES**  
PROPERTY GROUP

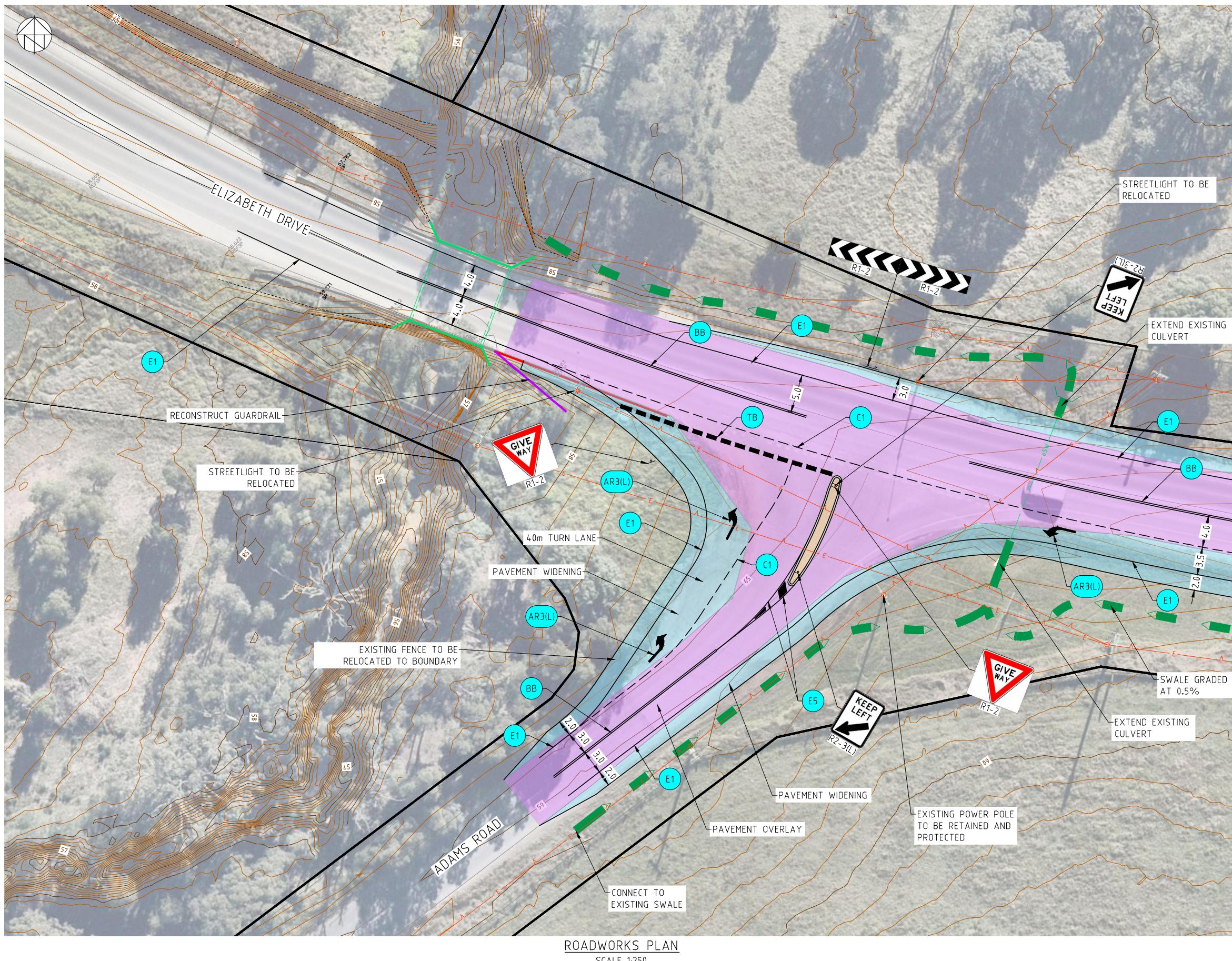
**INDESCO**

APPROVED MM	DATE 12.07.2021
CHECKED BV	DATE 12.07.2021
DESIGNED BY AMG	
DRAWN BY PM	
CAD FILE	
SCALE	SHEET NO.

PROJECT  
**ELIZABETH DRIVE - ADAMS ROAD INTERSECTION UPGRADE**

DRAWING TITLE  
**KEY PLAN**

PROJECT No. **7472-CD** DRAWING No. **001** AMDT **B**



No.	AMENDMENT	APPROVED	DATE	AMENDED BY
B	STRATEGIC CONCEPT DESIGN	MM	15.07.2021	PM
A	CONCEPT DESIGN	MM	12.07.2021	PM

**COOMBES**  
PROPERTY GROUP

**INDESCO**

APPROVED	MM	DATE	12.07.2021
CHECKED	BV	DATE	12.07.2021
DESIGNED BY	AMG		
DRAWN BY	PM		
CAD FILE			
SCALE		SHEET NO.	

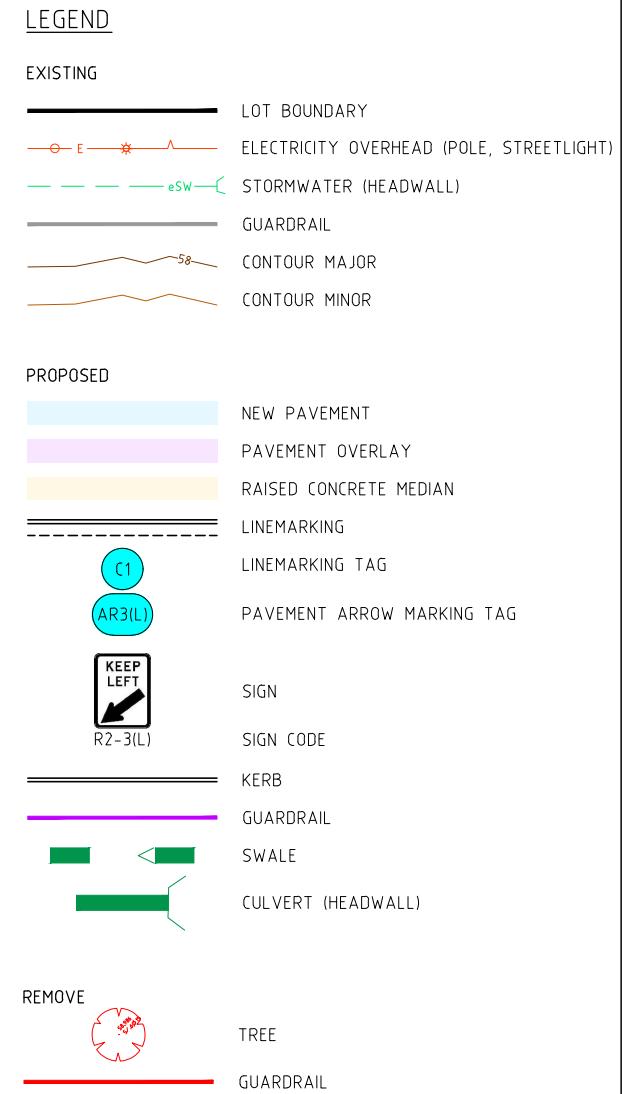
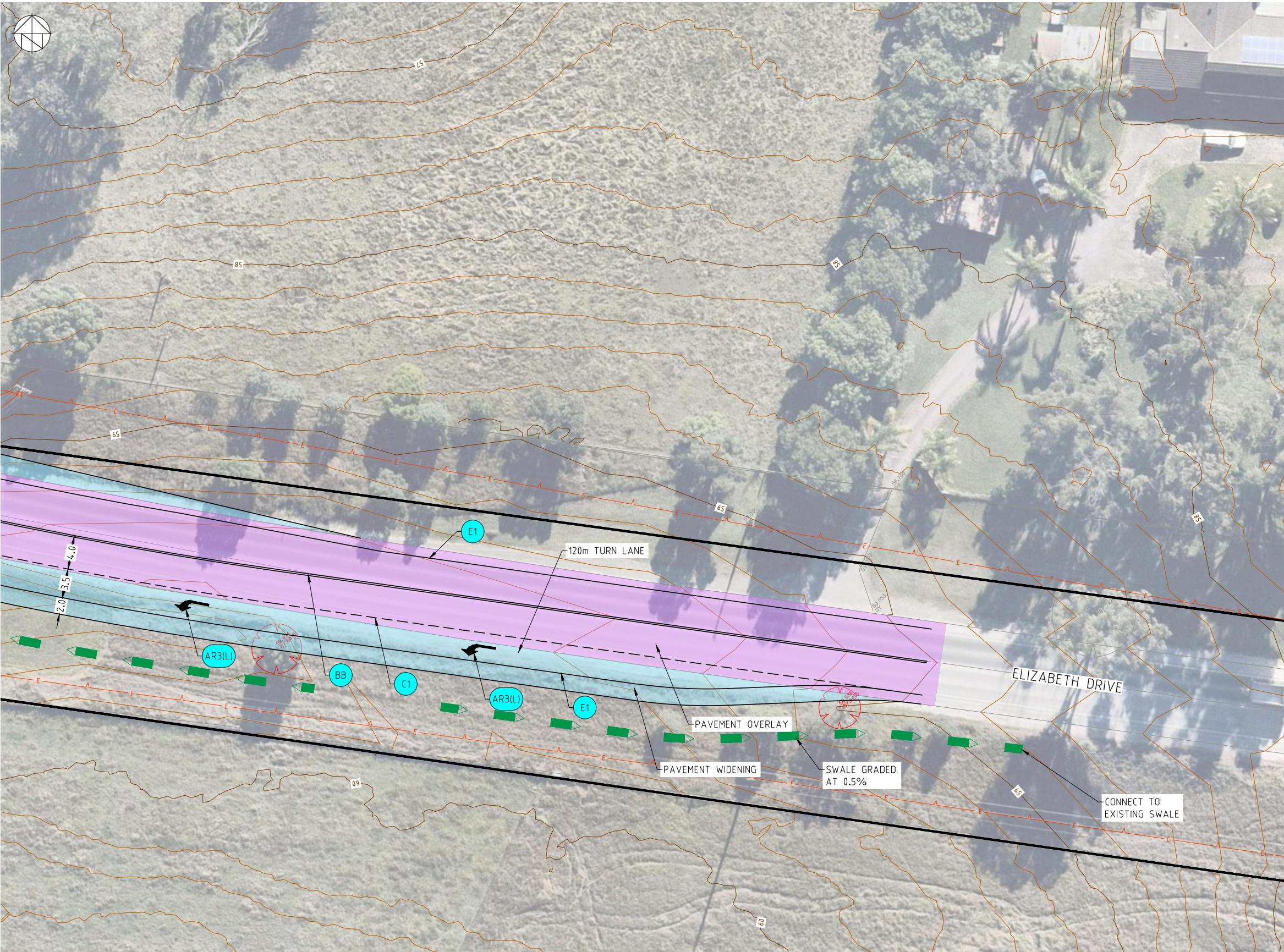
PROJECT  
ELIZABETH DRIVE - ADAMS  
ROAD INTERSECTION  
UPGRADE

DRAWING TITLE  
**ROADWORKS PLAN  
SHEET 1 OF 2**

PROJECT No. <b>7472-CD</b>	DRAWING No. <b>011</b>	AMDT <b>B</b>
-------------------------------	---------------------------	------------------

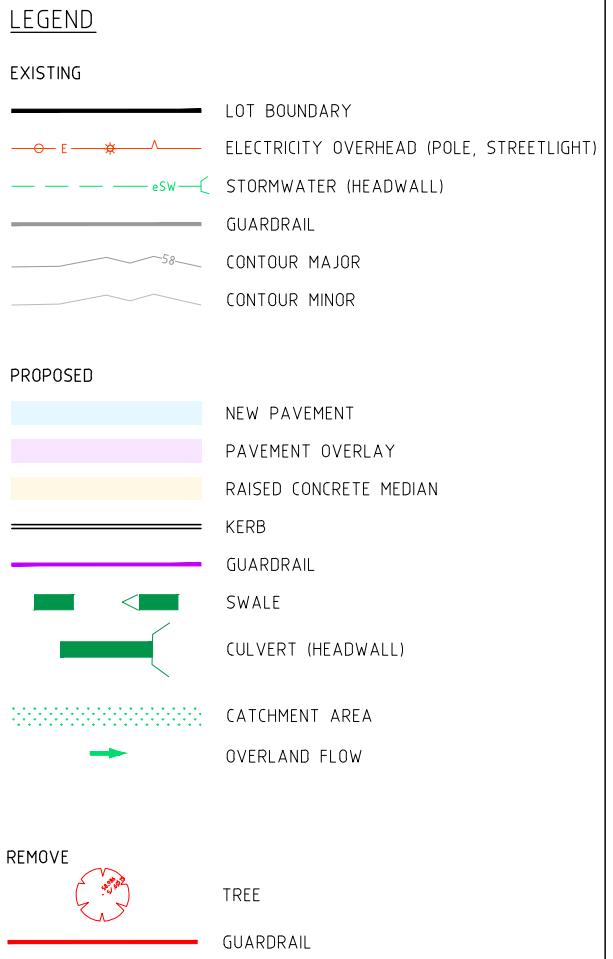
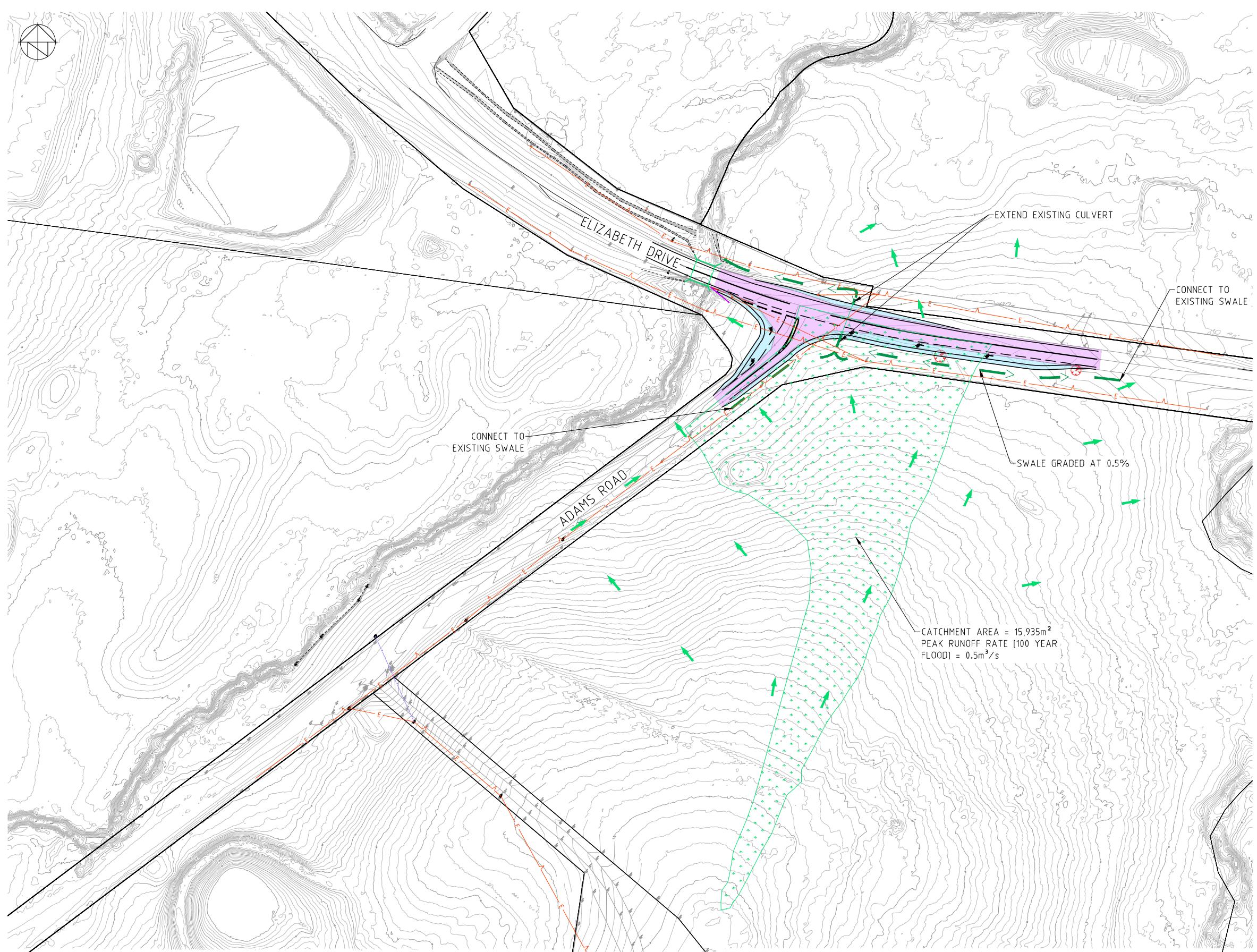
A1 PLOT  
250 0 2.5 5.0 7.5 10  
5 2.5 500

FOR CONTINUATION REFER TO DRAWING 7472-CD-011



A1 PLOT 250 0 2.5 5.0 7.5 10  
A3 PLOT 5 2.5 500

No.	AMENDMENT	APPROVED	DATE	AMENDED BY
B	STRATEGIC CONCEPT DESIGN	MM	15.07.2021	PM
A	CONCEPT DESIGN	MM	12.07.2021	PM



A1 PLOT  
100 0 10 20 30 40  
20 10 200

A3 PLOT  
100 0 10 20 30 40  
20 10 200

No.	AMENDMENT	APPROVED	DATE	AMENDED BY
B	STRATEGIC CONCEPT DESIGN	MM	15.07.2021	PM
A	CONCEPT DESIGN	MM	12.07.2021	PM

CLIENT  
**COOMBES**  
PROPERTY GROUP

**INDESCO**

APPROVED MM	DATE 12.07.2021
CHECKED BV	DATE 12.07.2021
DESIGNED BY AMG	
DRAWN BY PM	
CAD FILE	
SCALE	SHEET NO.

PROJECT  
**ELIZABETH DRIVE - ADAMS ROAD INTERSECTION UPGRADE**

DRAWING TITLE  
**STORMWATER MANAGEMENT PLAN**

PROJECT No. **7472-CD** DRAWING No. **015** AMDT. **B**



#### LEGEND

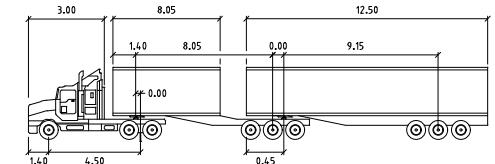
##### EXISTING

- LOT BOUNDARY
- GUARDRAIL

##### PROPOSED

- NEW PAVEMENT
- PAVEMENT OVERLAY
- RAISED CONCRETE MEDIAN
- LINEMARKING
- KERB
- GUARDRAIL

##### VEHICLE PROFILE



##### B-DOMBLE 26M

meters  
 Tractor Width : 2.50      Lock to Lock Time : 6.0  
 Trailer Width : 2.50      Steering Angle : 23.4  
 Tractor Track : 2.50      Articulating Angle : 70.0  
 Trailer Track : 2.50

##### NOTE

A VEHICLE CLEARANCE OF 0.5m HAS BEEN USED.

TURNS LEFT  
SCALE 1:200

A1 PLOT 200 0 2 4 6 8 A3 PLOT 4 2 0 4 2 0

No.	AMENDMENT	APPROVED	DATE	AMENDED BY
B	STRATEGIC CONCEPT DESIGN	MM	15.07.2021	PM
A	CONCEPT DESIGN	MM	12.07.2021	PM

COOMBES  
PROPERTY GROUP

INDESCO

CLIENT	PROJECT	DRAWING TITLE
		TURNING MOVEMENTS PLAN
		SHEET 1 OF 2
	ELIZABETH DRIVE - ADAMS ROAD INTERSECTION UPGRADE	
	7472-CD	DRAWING No. <b>021</b>
	AMDT <b>B</b>	



#### LEGEND

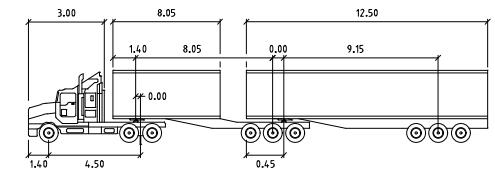
EXISTING

- LOT BOUNDARY
- GUARDRAIL

#### PROPOSED

- NEW PAVEMENT
- PAVEMENT OVERLAY
- RAISED CONCRETE MEDIAN
- LINEMARKING
- KERB
- GUARDRAIL

#### VEHICLE PROFILE



#### B-DOUBLE 26M

meters	
Tractor Width	: 2.50
Trailer Width	: 2.50
Tractor Track	: 2.50
Trailer Track	: 2.50

Lock to Lock Time : 6.0  
Steering Angle : 23.4  
Articulating Angle : 70.0

#### NOTE

A VEHICLE CLEARANCE OF 0.5m HAS BEEN USED.

TURNS LEFT  
SCALE 1:200

A1 PLOT  
200 0 2 4 6 8 10  
A3 PLOT  
4 2

No.	AMENDMENT	APPROVED	DATE	AMENDED BY
B	STRATEGIC CONCEPT DESIGN	MM	15.07.2021	PM
A	CONCEPT DESIGN	MM	12.07.2021	PM

CLIENT  
**COOMBES**  
PROPERTY GROUP

PROJECT  
**ELIZABETH DRIVE - ADAMS ROAD INTERSECTION UPGRADE**

APPROVED	MM	DATE	12.07.2021
CHECKED	BV	DATE	12.07.2021
DESIGNED BY	AMG		
DRAWN BY	PM		
CAD FILE			
SCALE		SHEET NO.	

DRAWING TITLE	TURNING MOVEMENTS PLAN SHEET 2 OF 2	PROJECT No.	DRAWING No.	AMDT
		7472-CD	022	B