Gold Coast
Suite 26, 58 Riverwalk Avenue
Robina QLD 4226
P: (07) 5562 5377

Brisbane
Level 2, 428 Upper Edward Street
Spring Hill QLD 4000
P: (07) 3831 4442

Sydney
Studio 203, 3 Gladstone Street
Newtown NSW 2042
P: (02) 9557 6202

W: www.bitziosconsulting.com.au

M: PO Box 5102 Q Super Centre
Mermaid Waters QLD 4218

E: admin@bitziosconsulting.com.au

Your reference: MCUI/2023/192
Our reference: P6218.001L_Further IR Letter

19 September 2024

Gainsborough Developments Pty Ltd
C/- Richards Group of Companies
PO Box 398
BEENLEIGH QLD 4207

Attention: **Craig Wallace**
Sent via email: craig@richardsgroup.com.au

Dear Craig,

RE: FURTHER INFORMATION REQUEST LETTER RESPONSE
689 TOOWOOMBA CECIL PLAINS ROAD, WELLCAMP

1. Introduction

This letter has been prepared in response to the Further Information Request issued by Toowoomba Regional Council (Council) dated 19th March 2024. This letter is in relation to the future development located at 689 Toowoomba Cecil Plains Road, Wellcamp (subject site). The subject site is formally described as Lots 3-4, 10, 16, 18 & 20 on A341, Lot 9 & 19 on RP113281 and Lot 279 on AG3110.

Specifically this letter responds to Transport Item 2.

An amended Structure Plan has been prepared by RPS Group in response to the Further Information Request which is included in **Attachment A**.

2. Response to Transport Assessment Items

2.1. Aspect of Development

> 1. *The TIA has not adequately assessed the road safety impacts associated with the development. The TIA proposes that the four-way priority control intersection at Toowoomba Cecil Plains Road/Deuble Road/Heinemann Road is retained, however this is the least safe form of intersection treatment. An offset tee arrangement or a single lane roundabout would mitigate some of the road safety impacts of the subject site.*

Response:

A turn warrants assessment was included in the Traffic Impact Assessment (TIA) report (*ref: P6218.001R 689 Toowoomba Cecil Plains Road TIA*) undertaken by Bitzios Consulting to determine the turn treatments required to mitigate the future development's safety impacts at the existing priority-controlled intersection.

The results of the turn warrants assessment indicated that the Toowoomba Cecil Plains Road / Deuble Road & Heinemann Road intersection required a short auxiliary left turn treatment (AUL(s)) on the eastbound approach and a channelised right turn treatment (CHR) on the westbound approach. These treatments were then assessed using SIDRA resulting in a maximum average delay of 29.3 seconds to any movement in year 2040 which remains below the Department of Transport and Main Roads' (DTMR) threshold for excessive delays (i.e. 42 seconds).

It is recommended further investigations are undertaken in future planning stages to ensure safety impacts associated with the future development are addressed considering the relevant road conditions at that time.

To ensure there are no potential operational issues of an alternative configuration for the Toowoomba Cecil Plains Road / Deuble Road & Heinemann Road intersection, a roundabout layout has been assessed using the same background and design traffic volumes detailed in the TIA report (*ref: P6218.001R 689 Toowoomba Cecil Plains Road TIA*) undertaken by Bitzios Consulting as detailed in Section 2.2. Traffic volume diagrams have been provided at **Attachment B**.

The Toowoomba Cecil Plains Road / Deuble Road & Heinemann Road roundabout intersection layout as assessed in SIDRA for the 2040 background and design years is shown in Figure 2.1.

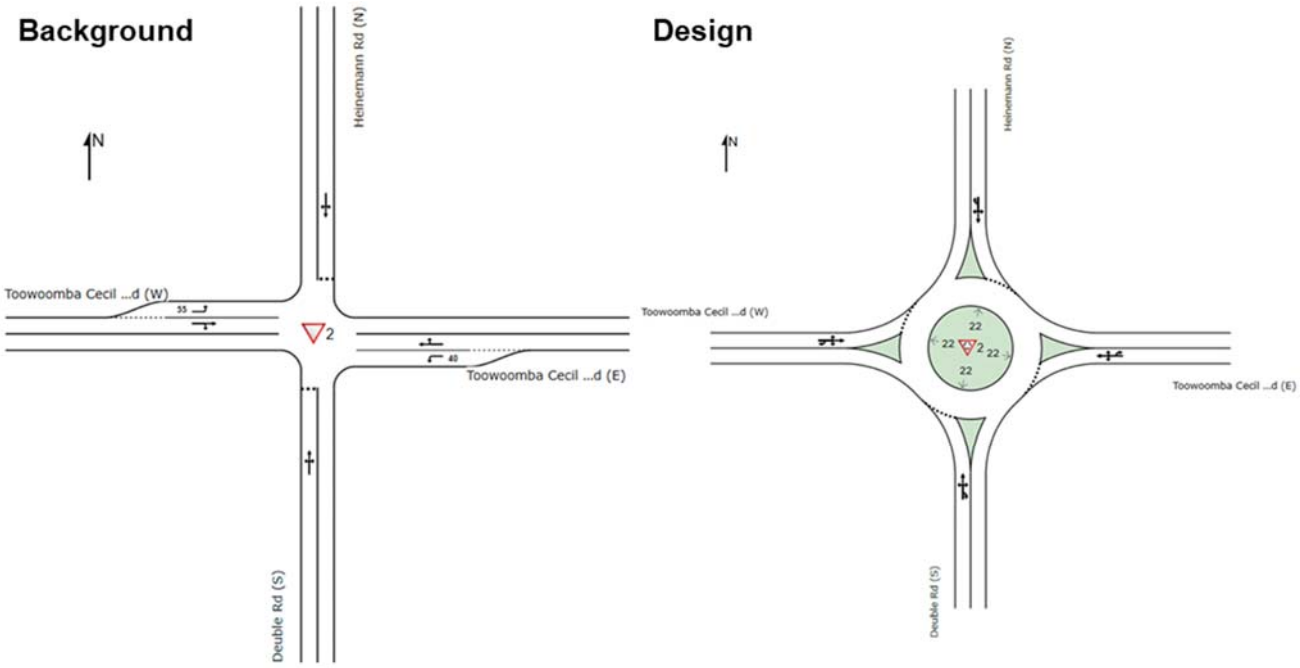


Figure 2.1: Toowoomba Cecil Plains Road / Deuble Road & Heinemann Road SIDRA Intersection Layout – Single Lane Roundabout

Table 2.1 summarises the SIDRA results for the Toowoomba Cecil Plains Road / Deuble Road & Heinemann Road roundabout intersection for the AM and PM peak hours. Detailed SIDRA results are provided at **Attachment C**.

Table 2.1: Toowoomba Cecil Plains Road / Deuble Road & Heinemann Road Intersection SIDRA Results Summary

Approach	AM				PM			
	DOS (v/c)	Delay (s)	LOS	Queue (m)	DOS (v/c)	Delay (s)	LOS	Queue (m)
2040 Background								
Deuble Road (S)	0.08	13	B	2	0.05	15	B	1
Toowoomba Cecil Plains Road (E)	0.20	1	A	2	0.20	1	N/A	2
Heinemann Road (N)	0.07	13	B	2	0.08	14	B	2
Toowoomba Cecil Plains Road (W)	0.18	0	A	0	0.21	0	A	0
2040 Design (Ultimate Development of the Site)								
Deuble Road (S)	0.13	6	A	5	0.06	6	A	2
Toowoomba Cecil Plains Road (E)	0.29	8	A	13	0.33	9	A	15
Heinemann Road (N)	0.03	8	A	1	0.06	9	A	2
Toowoomba Cecil Plains Road (W)	0.30	9	A	15	0.34	9	A	18

As shown, the Toowoomba Cecil Plains Road / Deuble Road & Heinemann Road intersection is expected to operate within acceptable performance limits (in terms of DOS, delay, and queues) for a roundabout intersection in year 2040 with or without the future development. Furthermore, the introduction of future development trips is expected to have a negligible impact on intersection performance.

2. *Deuble Road is an existing trunk road as identified in the LGIP. The West Toowoomba Land Use Investigations December 2016 identifies Drayton Wellcamp Road and Deuble Road as the urban edge with a boulevard treatment to provide a buffer between residential uses and agricultural activities. The Structure Plan shows Drayton Wellcamp Road realigned with Deuble Road as the through road to reinforce the urban edge treatment. Devine Road was not intended to intersect with Drayton Wellcamp Road due to the current location on the outside of a curve on a higher speed road and the complications that future realignment of Drayton Wellcamp Road could create. 'Alford Grove' is conditioned such that no access is permitted to Drayton Wellcamp Road along Devine Road (RAL/2015/1869/A).*

Response:

The amended Structure Plan provided at **Attachment A** has been updated to show the realignment of Drayton Wellcamp Road as per the Glenvale West Structure Plan. The SIDRA layout for the Drayton Wellcamp Road / Devine Road intersection has therefore been amended to reflect the future realignment as shown in Figure 2.2. Traffic volume diagrams have been provided at **Attachment B**.

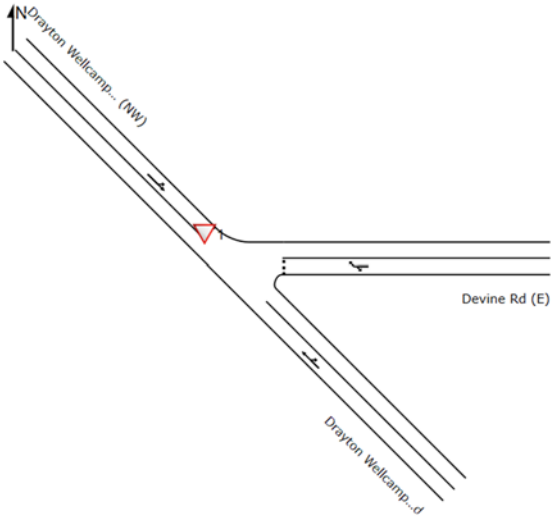


Figure 2.2: Drayton Wellcamp Road / Devine Road SIDRA Intersection Layout - Realignment

Table 2.2 and Table 2.3 summarises the SIDRA results for the realigned Drayton Wellcamp Road / Devine Road intersection for the AM and PM peak hours. Detailed SIDRA results are provided at **Attachment C**.

Table 2.2: Drayton Wellcamp Road / Devine Road Intersection SIDRA Results Summary – 2040 Design Year

Approach	AM				PM			
	DOS (v/c)	Delay (s)	LOS	Queue (m)	DOS (v/c)	Delay (s)	LOS	Queue (m)
Background								
Drayton Wellcamp Road (SE)	0.07	0	N/A	0	0.07	0	N/A	0
Devine Road (E)	0.01	5	A	0	0.01	5	A	1
Drayton Wellcamp Road (NW)	0.09	7	A	2	0.10	7	A	3
Design (Ultimate Development of the Site)								
Drayton Wellcamp Road (SE)	0.10	1	N/A	0	0.14	2	N/A	0
Devine Road (E)	0.05	6	A	1	0.03	6	A	1
Drayton Wellcamp Road (NW)	0.14	7	A	4	0.13	7	A	3

Table 2.3: Drayton Wellcamp Road / Devine Road Intersection SIDRA Results Summary – 2050 Design Year

Approach	AM				PM			
	DOS (v/c)	Delay (s)	LOS	Queue (m)	DOS (v/c)	Delay (s)	LOS	Queue (m)
Background								
Drayton Wellcamp Road (SE)	0.08	0	N/A	0	0.08	0	N/A	0
Devine Road (E)	0.01	6	A	0	0.01	6	A	0
Drayton Wellcamp Road (NW)	0.10	7	A	3	0.11	7	A	3
Design (Ultimate Development of the Site)								
Drayton Wellcamp Road (SE)	0.11	1	N/A	0	0.15	2	N/A	0
Devine Road (E)	0.05	6	A	1	0.03	6	A	1
Drayton Wellcamp Road (NW)	0.15	7	A	4	0.14	7	A	4

As shown, the realigned Drayton Wellcamp Road / Devine Road is expected to operate within acceptable performance limits (in terms of DOS, delay and queues) for a priority-controlled intersection at the expected 10-year design horizon (year 2050) with or without the future development.

3. *The TIA has not considered traffic generated by the currently undeveloped land north of Gainsborough Lodge. This land is within the Priority Infrastructure Area (PIA) and development in this area could occur before development within the subject site. Access to Hursley Road for this site is expected to be in the form of a single lane roundabout aligned with the proposed Gainsborough Lodge intersection with Hursley Road. The TIA should be amended to reflect the development of this site with the primary access point being a single lane roundabout at Hursley Road.*

Response:

It is understood that the future development of the land north of Gainsborough Lodge will include approximately 141 low-density residential lots. As such, it is expected to generate in the order of 100 trips in the AM peak hour and 110 trips in the PM peak hour. It is expected the distribution of these trips to the external road network will follow the turn volume percentages calculated using traffic survey data consistent with the other nearby developments considered (i.e. Gainsborough Lodge and Thurgoona).

The Hursley Road / North/South Distributor Road has been reassessed adopting a roundabout configuration as shown in Figure 2.3, including the expected trips generated by the Northern PIA Development. Traffic volume diagrams have been provided at **Attachment B**.

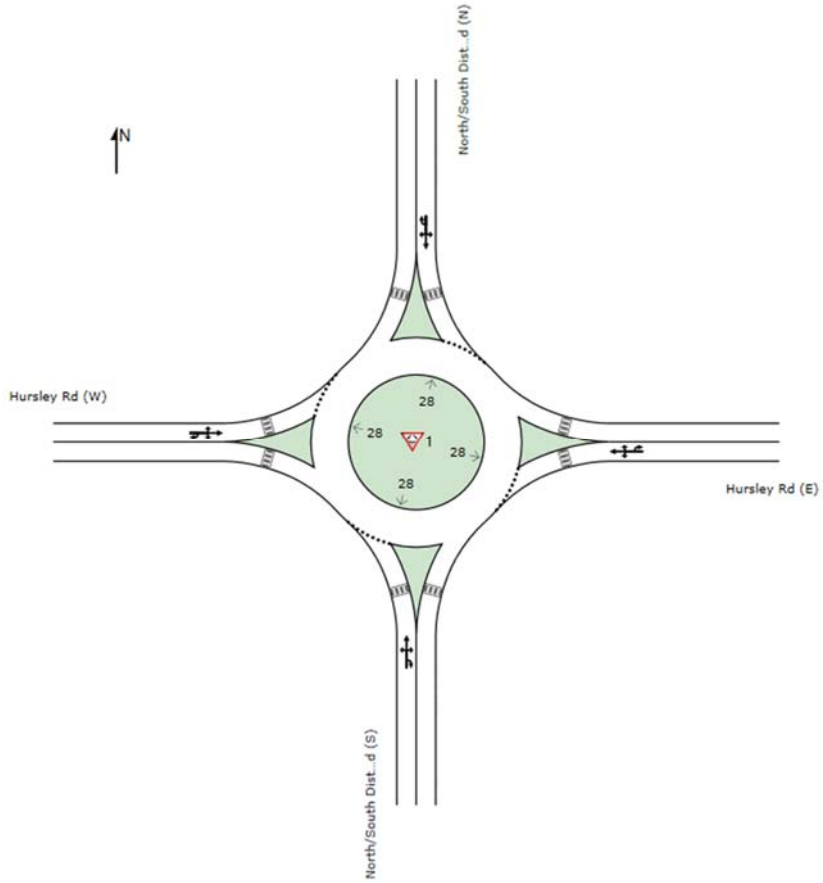


Figure 2.3: Hursley Road / North/South Distributor Road SIDRA Intersection Layout - Roundabout

Table 2.4 and Table 2.5 summarises the SIDRA results for the Hursley Road / North/South Distributor Road intersection for the AM and PM peak hours. Detailed SIDRA results are provided at **Attachment C**.

Table 2.4: Hursley Road / North/South Distributor Road Intersection SIDRA Results Summary – 2040 Design Year

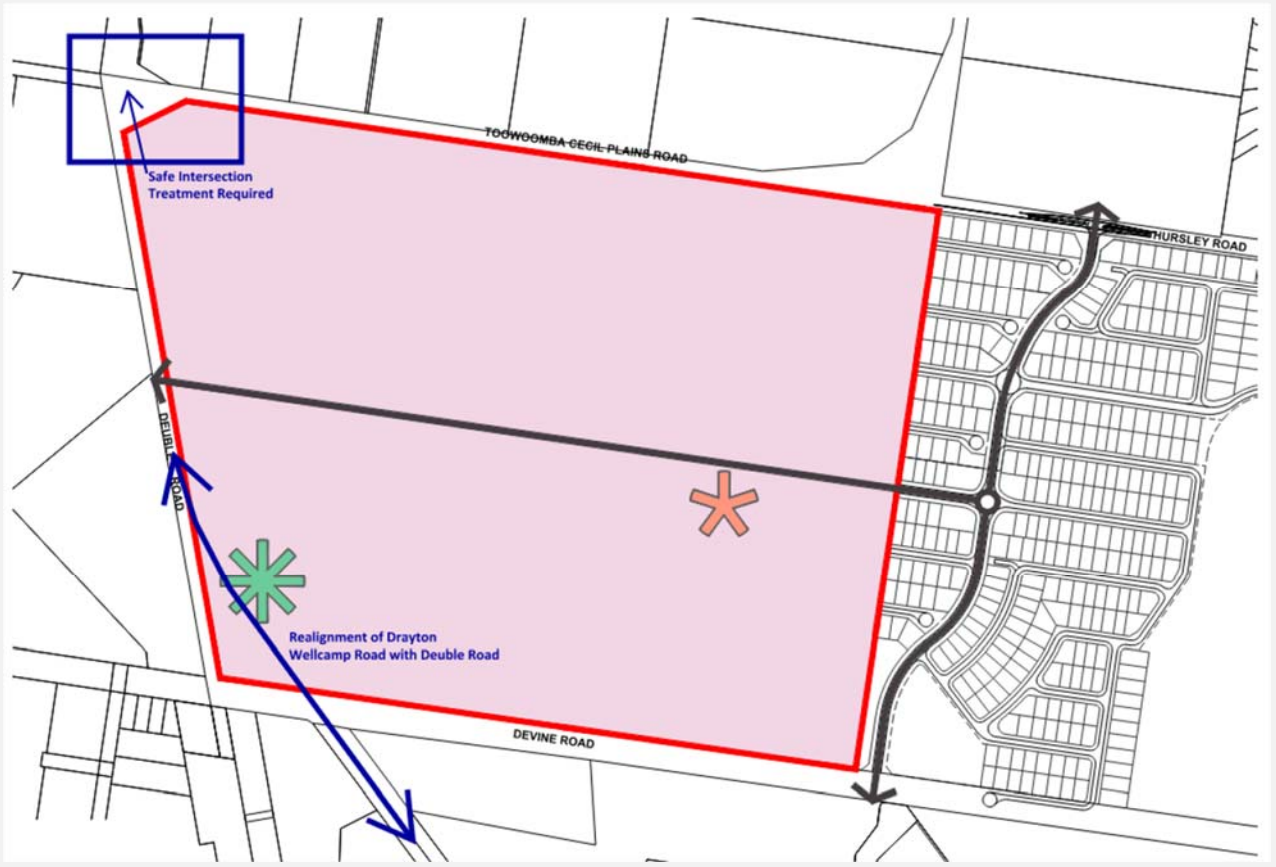
Approach	AM				PM			
	DOS (v/c)	Delay (s)	LOS	Queue (m)	DOS (v/c)	Delay (s)	LOS	Queue (m)
Background								
North/South Distributor (S)	0.30	9	A	13	0.17	8	A	7
Hursley Road (E)	0.18	4	A	8	0.26	4	A	12
North/South Distributor (N)	0.01	9	A	0	0.01	9	A	0
Hursley Road (W)	0.16	6	A	6	0.19	6	A	8
Design (Ultimate Development of the Site)								
North/South Distributor (S)	0.51	9	A	28	0.28	9	A	13
Hursley Road (E)	0.26	4	A	12	0.47	5	A	27
North/South Distributor (N)	0.09	9	A	4	0.04	8	A	2
Hursley Road (W)	0.20	8	A	9	0.26	8	A	12

Table 2.5: Hursley Road / North/South Distributor Road Intersection SIDRA Results Summary – 2050 Design Year

Approach	AM				PM			
	DOS (v/c)	Delay (s)	LOS	Queue (m)	DOS (v/c)	Delay (s)	LOS	Queue (m)
Background								
North/South Distributor (S)	0.31	9	A	14	0.19	9	A	8
Hursley Road (E)	0.19	4	A	8	0.31	5	A	15
North/South Distributor (N)	0.01	9	A	0	0.01	9	A	0
Hursley Road (W)	0.17	6	A	7	0.22	7	A	9
Design (Ultimate Development of the Site)								
North/South Distributor (S)	0.52	9	A	29	0.28	9	A	13
Hursley Road (E)	0.27	4	A	13	0.48	5	A	28
North/South Distributor (N)	0.10	9	A	4	0.04	8	A	2
Hursley Road (W)	0.23	8	A	10	0.28	7	A	12

As shown, the Hursley Road / North/South Distributor Road roundabout intersection is expected to operate within acceptable performance limits (in terms of DOS, delay and queues) at the expected 10-year design horizon (year 2050) with or without the future development and Northern PIA Development.

4. *The Structure Plan will need to be amended to recognise road safety impacts and the urban edge treatment. The figure below shows how the Structure Plan could be amended.*



Response:

An amended Structure Plan has been provided at **Attachment A** consistent with the above figure.

2.2. Further Advice

The following amended documentation is required:

1. *Amended TIA that reflects the development of the land north of Gainsborough Lodge with the primary access point being a single lane roundabout at Hursley Road; and*

2. *Amended Structure Plan that reflects a safe intersection treatment at Toowoomba Cecil Plains Road/Deuble Road/Heinemann Road and illustrates the realignment of Drayton Wellcamp Road with Deuble Road.*

Response:

1. The relevant changes to the TIA report prepared by Bitzios are provided herein. This includes:
   - Assessment of the Toowoomba Cecil Plains Road / Deuble Road & Heinemann Road intersection in a roundabout configuration
   - Assessment of the Drayton Wellcamp Road / Devine Road considering the realignment of Drayton Wellcamp Road
   - Assessment of the Hursley Road / North/South Distributor Road in a roundabout configuration including the potential traffic generated by the undeveloped land north of Gainsborough Lodge.
2. The amended Structure Plan provided at **Attachment A** has been updated to reflect the safe intersection treatment at the Toowoomba Cecil Plains Road / Deuble Road & Heinemann Road intersection and the realignment of Drayton Wellcamp Road with Deuble Road.

3. Concluding Statement

I trust that the additional information provided herein is sufficient to respond to Council's Information Request in relation to traffic items and will allow Council to prepare reasonable and relevant conditions of approval.

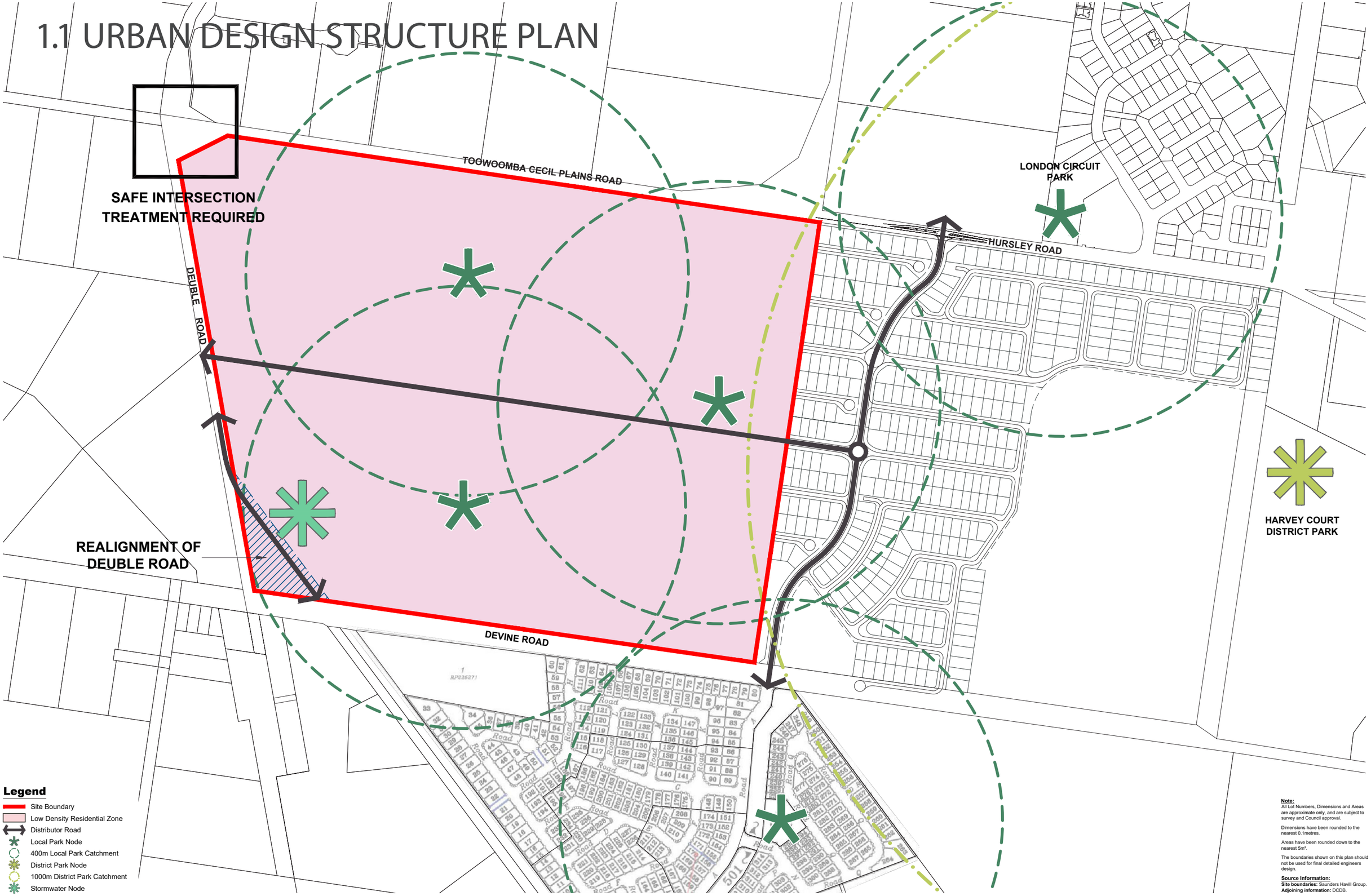
Yours faithfully

Bodie Campbell
Senior Traffic Engineer / Transport Planner
B Eng (Hons) | RSA(QLD & NSW) | MIEAUST
BITZIOS CONSULTING
Attachments:
A: Amended Development Plans
B: Network Diagrams
C: SIDRA Outputs

Attachment A

Amended Structure Plan

1.1 URBAN DESIGN STRUCTURE PLAN



Legend

- Site Boundary
- Low Density Residential Zone
- Distributor Road
- Local Park Node
- 400m Local Park Catchment
- District Park Node
- 1000m District Park Catchment
- Stormwater Node

PLAN REF: 131664 – 39
Rev No: A
DATE: 04 SEPTEMBER 2024
CLIENT: GAINSBOROUGH LODGE
DRAWN BY: JC
CHECKED BY: PHE

0 30 60 90 120 150 1 : 3,000 @ A1

GAINSBOROUGH LODGE
INDICATIVE STRUCTURE PLAN

Note:
All Lot Numbers, Dimensions and Areas are approximate only, and are subject to survey and Council approval.

Dimensions have been rounded to the nearest 0.1metres.

Areas have been rounded down to the nearest 5m².

The boundaries shown on this plan should not be used for final detailed engineers design.

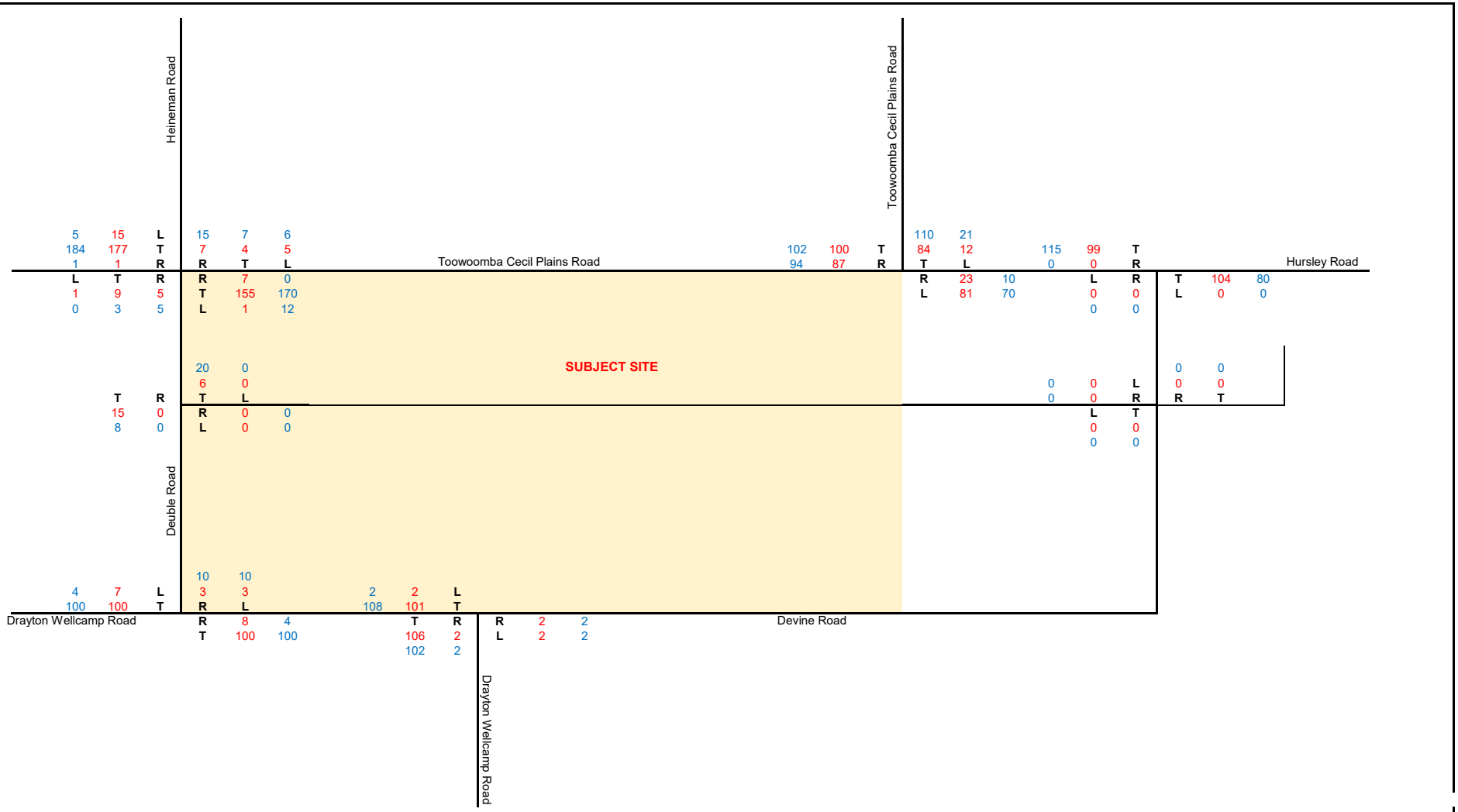
Source Information:
Site boundaries: Saunders Havill Group.
Adjoining information: DCDB.

URBAN DESIGN
Level 4 HQ South
520 Wickham Street
PO Box 1559
Fortitude Valley QLD 4006
T +61 7 3539 9500
W rpsgroup.com

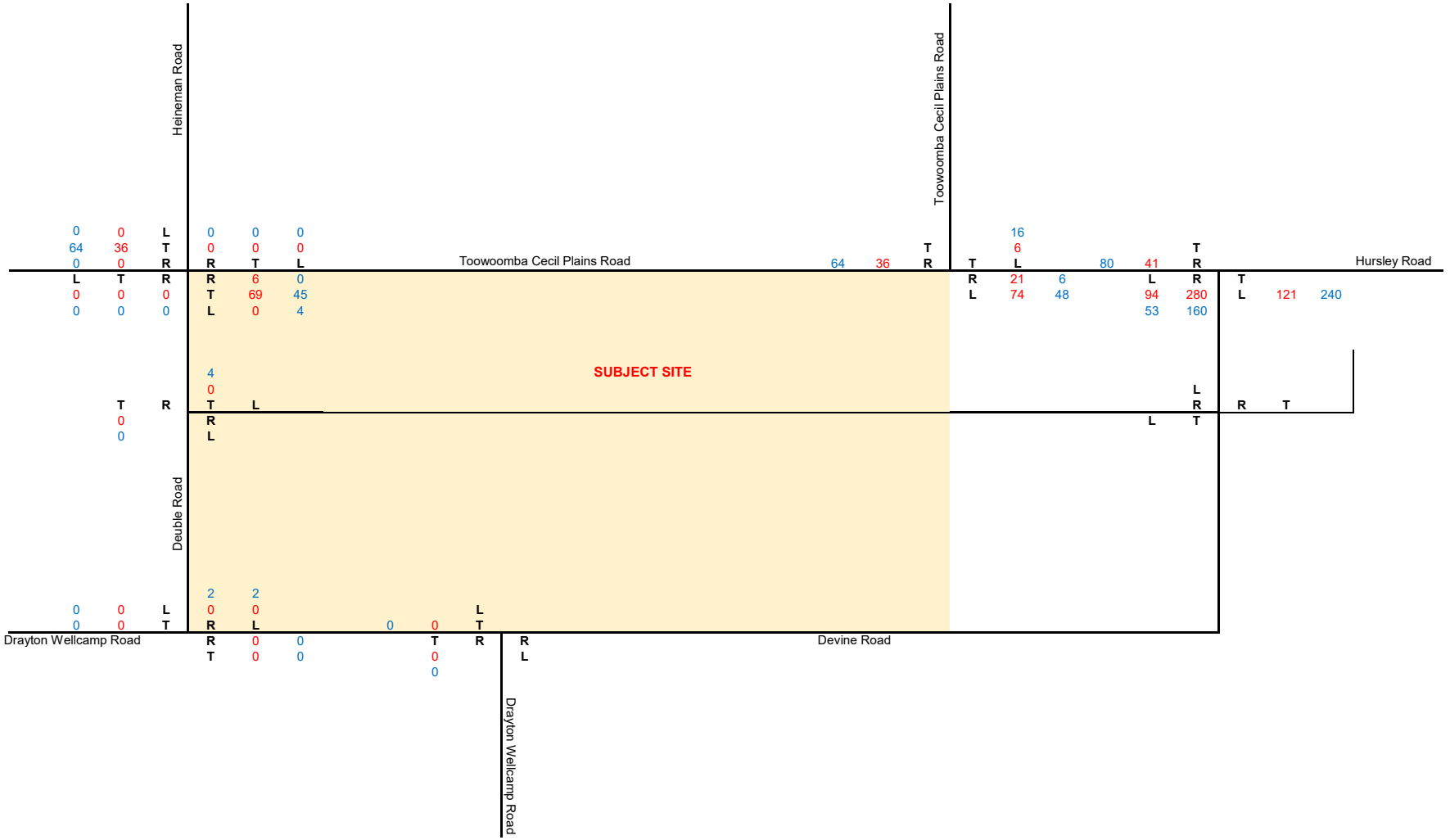
G:\143775 GAINSBOROUGH LODGE, TOOWOOMBA (LAN)\143775-1 GAINSBOROUGH LODGE, TOOWOOMBA (LAN)\C_TECHNICAL\C4_INDESIGN\C4_1_A3 REPORT\143775 GAINSBOROUGH LODGE OPEN SPACE .INDD

Attachment B

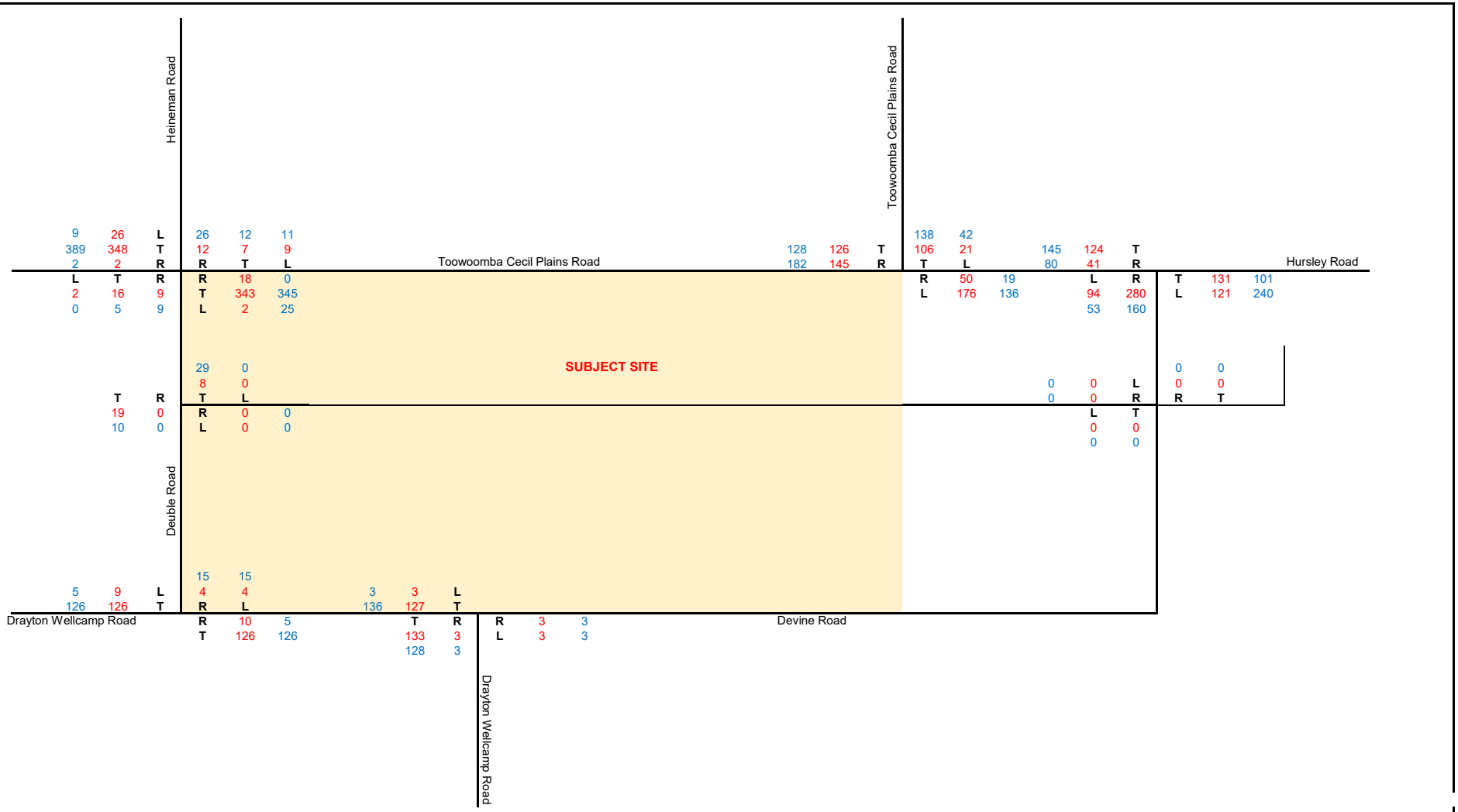
Traffic Volume Diagrams



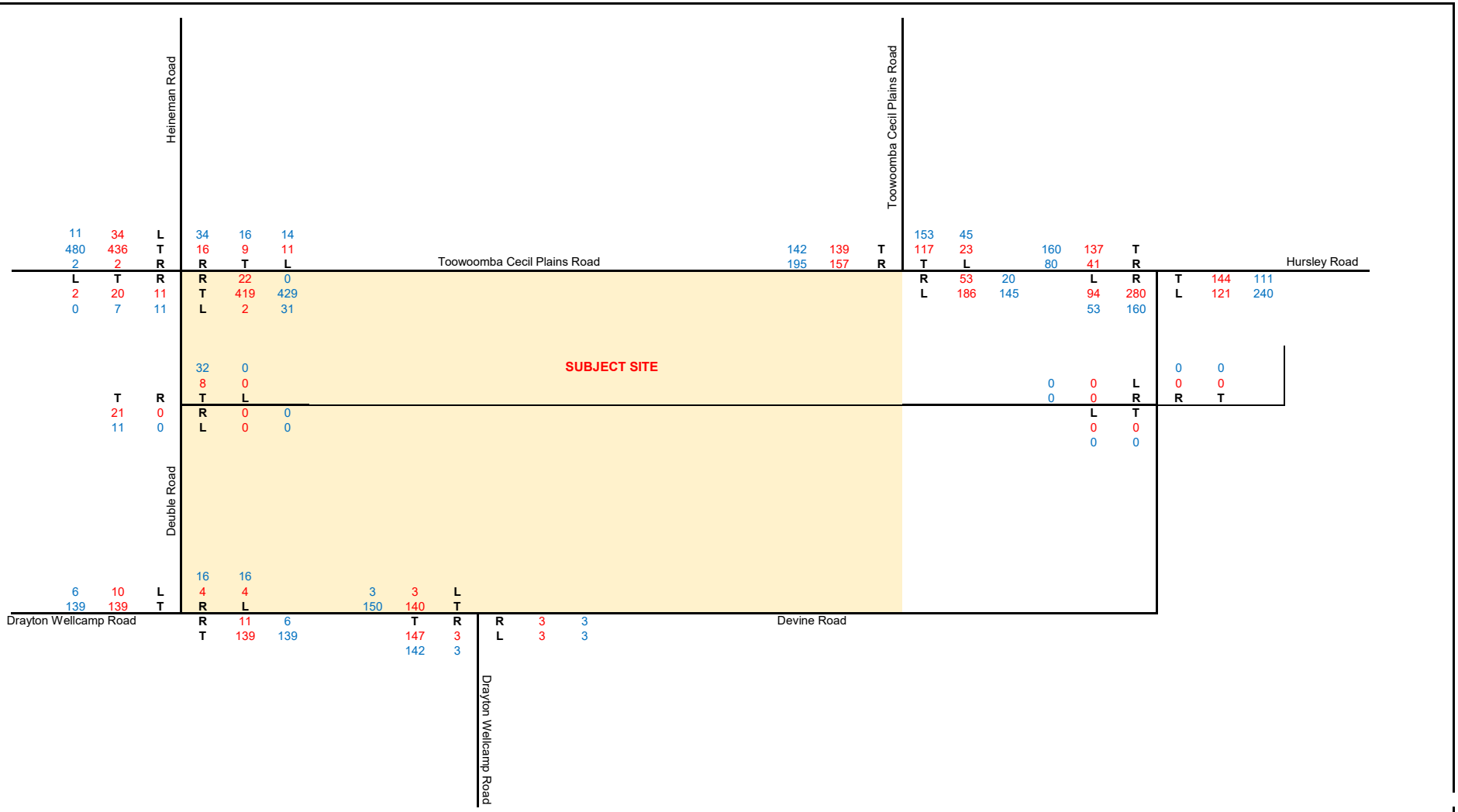
P6218	Toowoomba Cecil Plains Road Wellcamp TIA 2017 Surveys	**Notes:** Peak Hours **AM** 7:15 - 8:15 **PM** 2:30 - 3:30 Survey Year: 2017 Design Year: -	Sheet 1



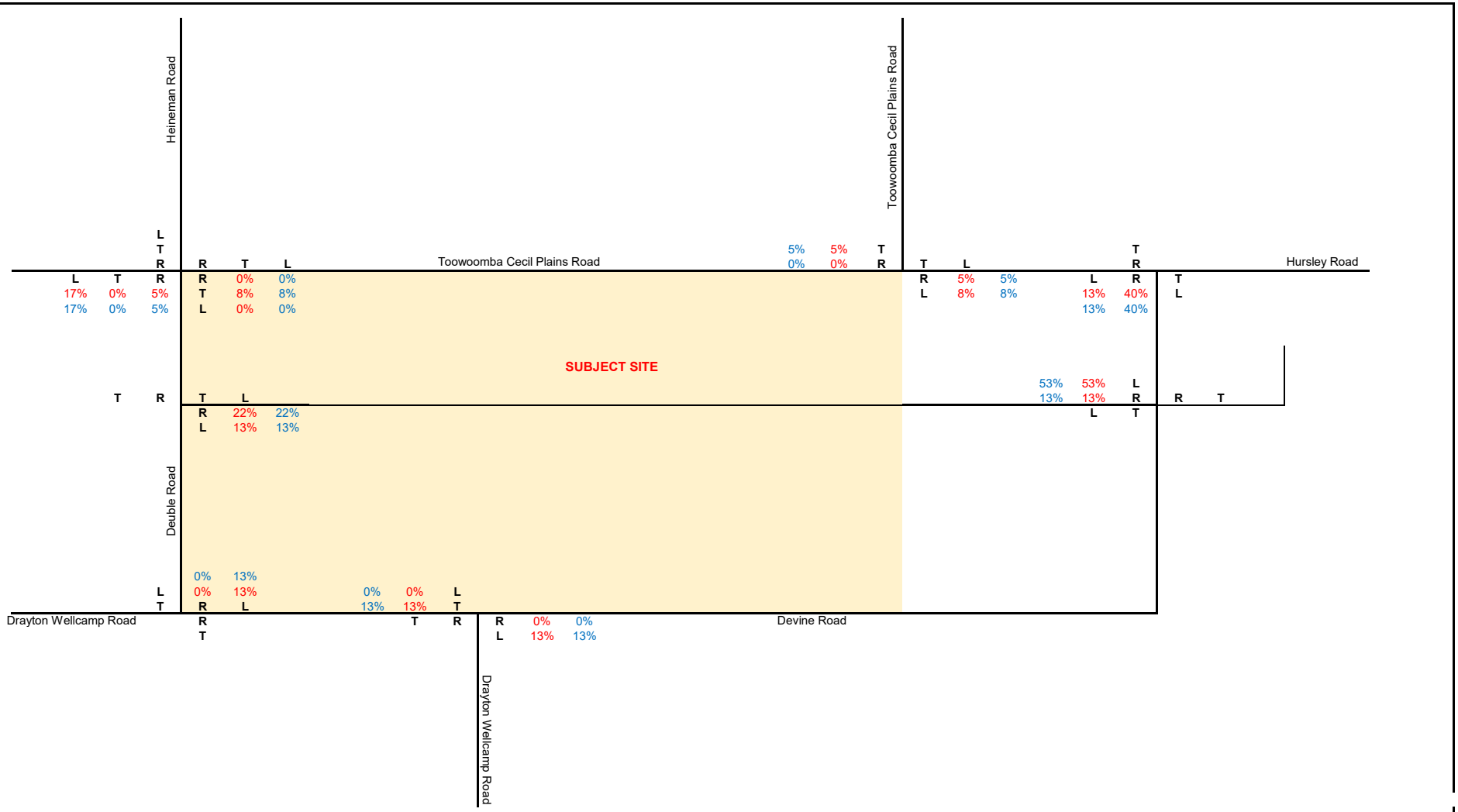
P6218	Toowoomba Cecil Plains Road Wellcamp TIA Gainsborough Lodge Develompent + Thurgoona Development Trips	**Notes:** Peak Hours **AM** 7:15 - 8:15 **PM** 2:30 - 3:30 Survey Year: - Design Year: -	Sheet 2



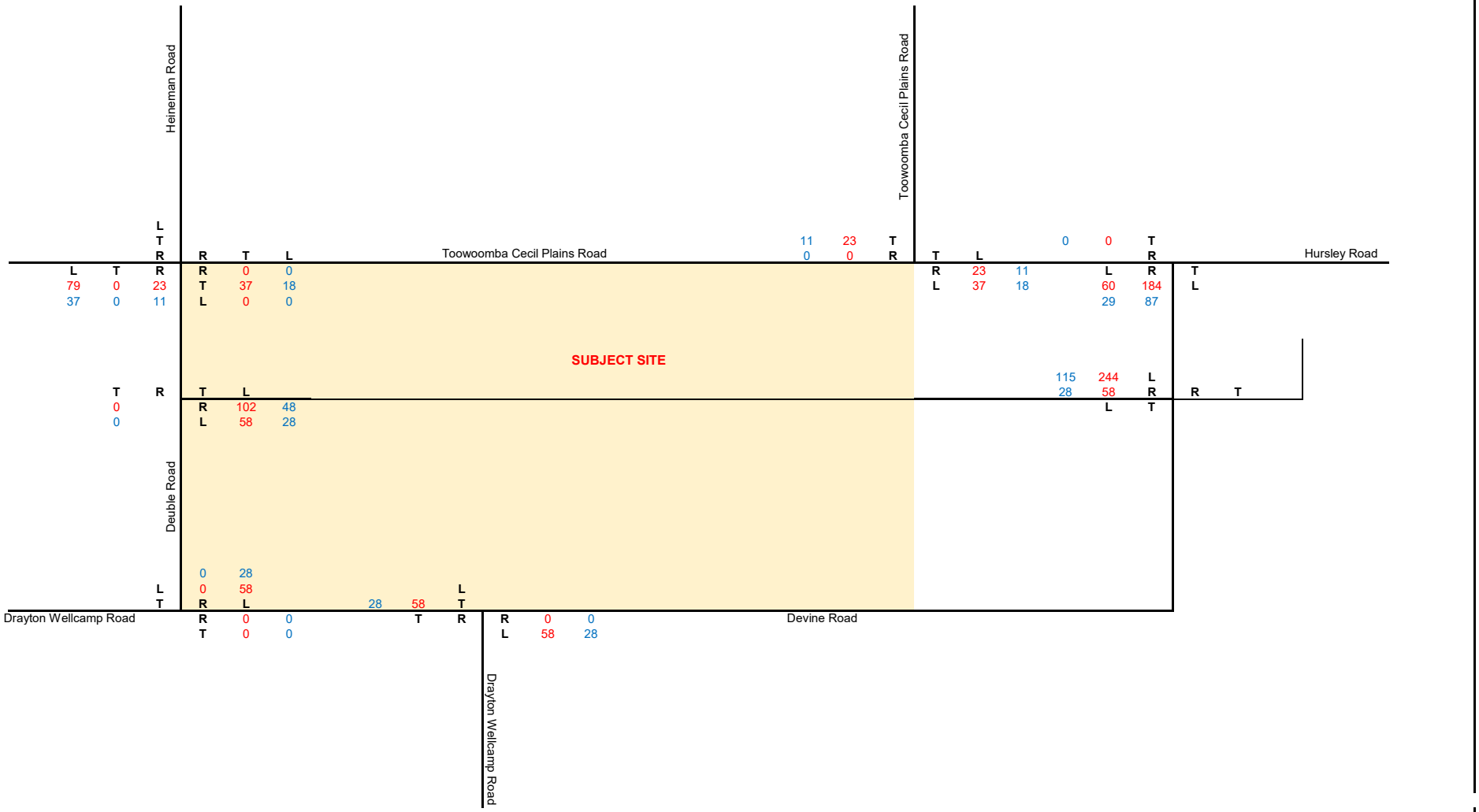
P6218	Toowoomba Cecil Plains Road Wellcamp TIA 2040 Background	**Notes:** Peak Hours **AM** 7:15 - 8:15 **PM** 2:30 - 3:30 Survey Year: 2017 Design Year: 2040	Sheet 3



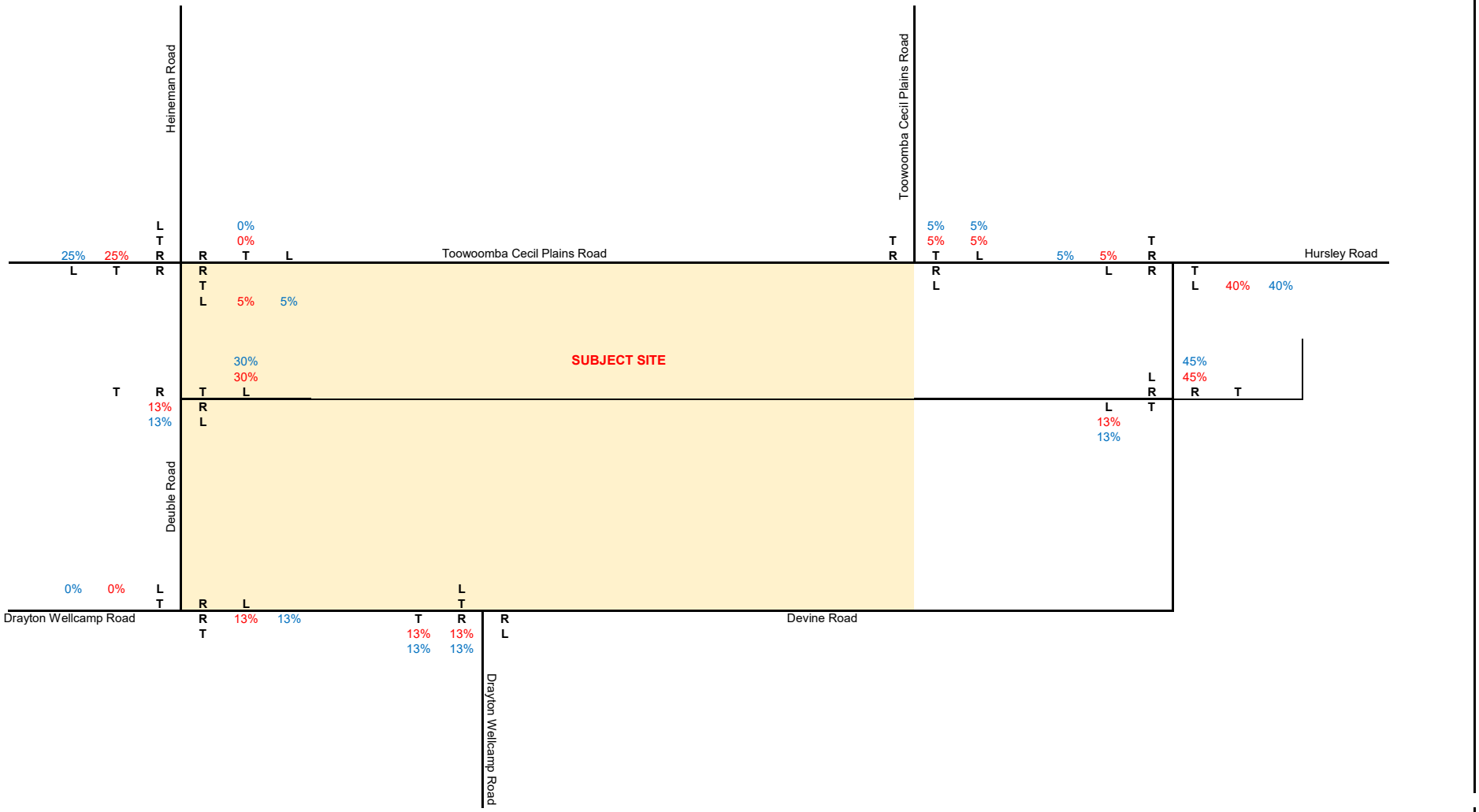
P6218	Toowoomba Cecil Plains Road Wellcamp TIA 2050 Background	**Notes:** Peak Hours **AM** 7:15 - 8:15 **PM** 2:30 - 3:30 Survey Year: 2017 Design Year: 2050	Sheet 4



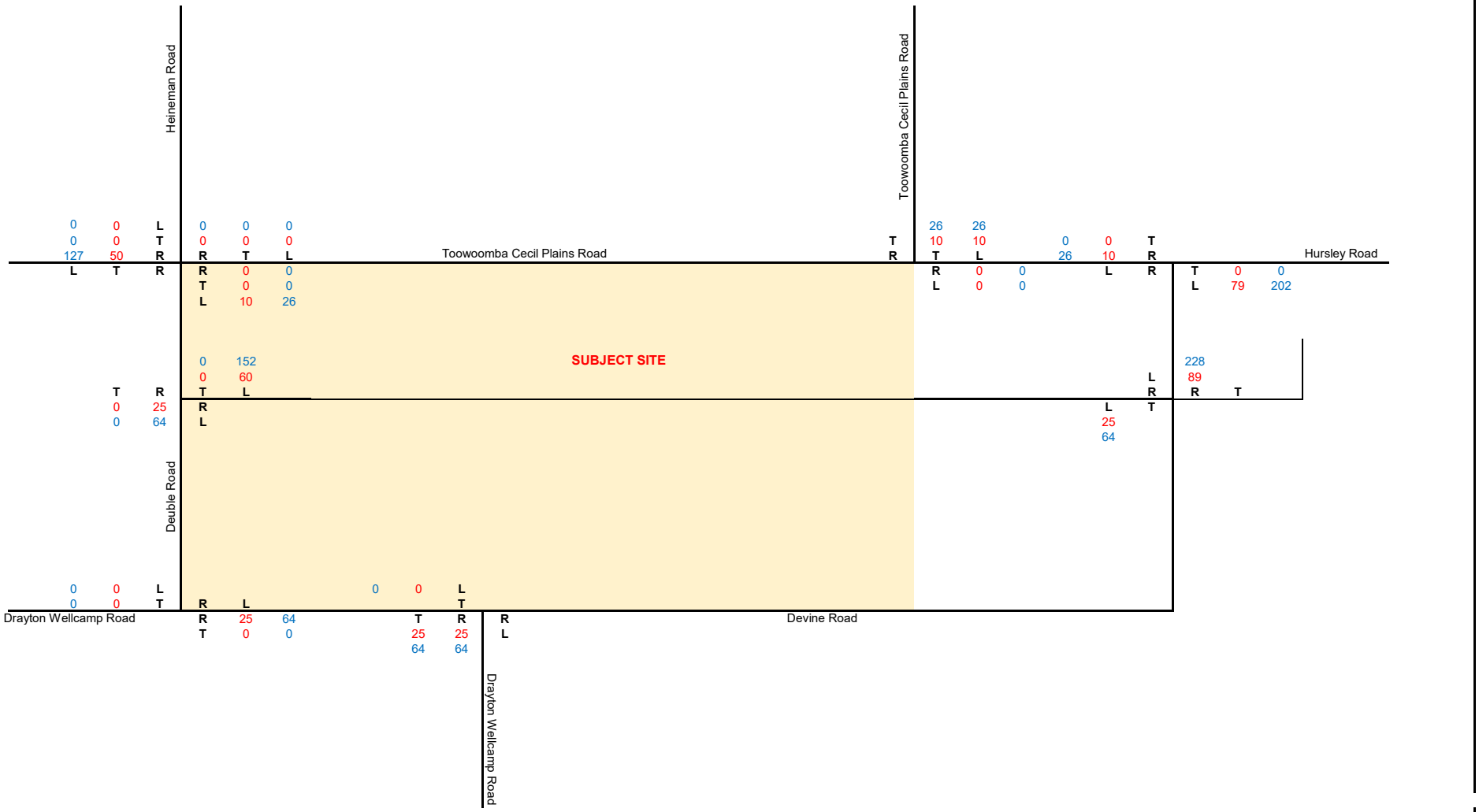
P6218	Toowoomba Cecil Plains Road Wellcamp TIA Development Traffic Distribution Out	**Notes:** Peak Hours **AM** 7:15 - 8:15 **PM** 2:30 - 3:30 Survey Year: 2017 Design Year: 2028	Sheet 5



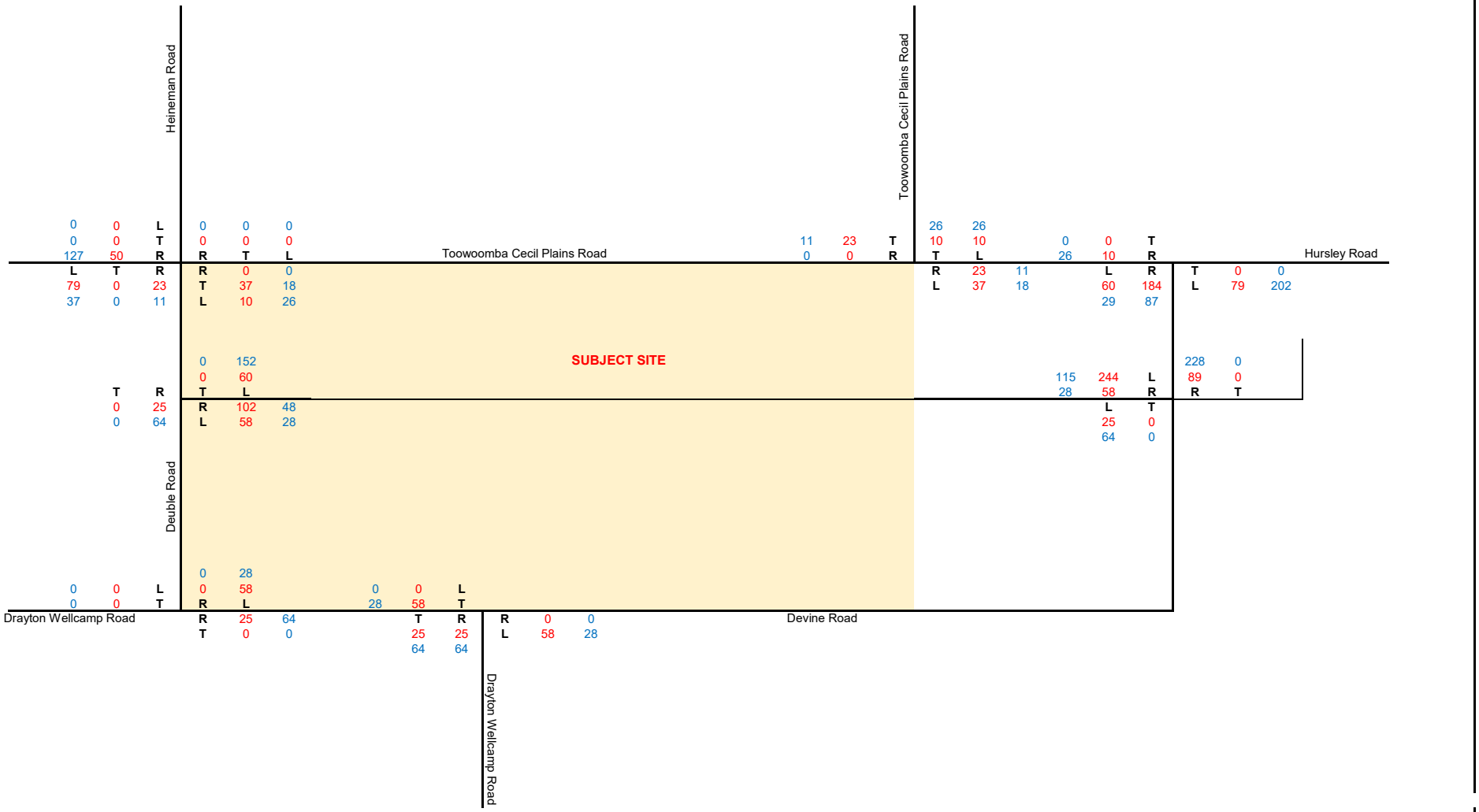
P6218	Toowoomba Cecil Plains Road Wellcamp TIA Development Traffic Assignment Out	**Notes:** Peak Hours **AM** 7:15 - 8:15 **PM** 2:30 - 3:30 Survey Year: 2017 Design Year: 2028	Sheet 6



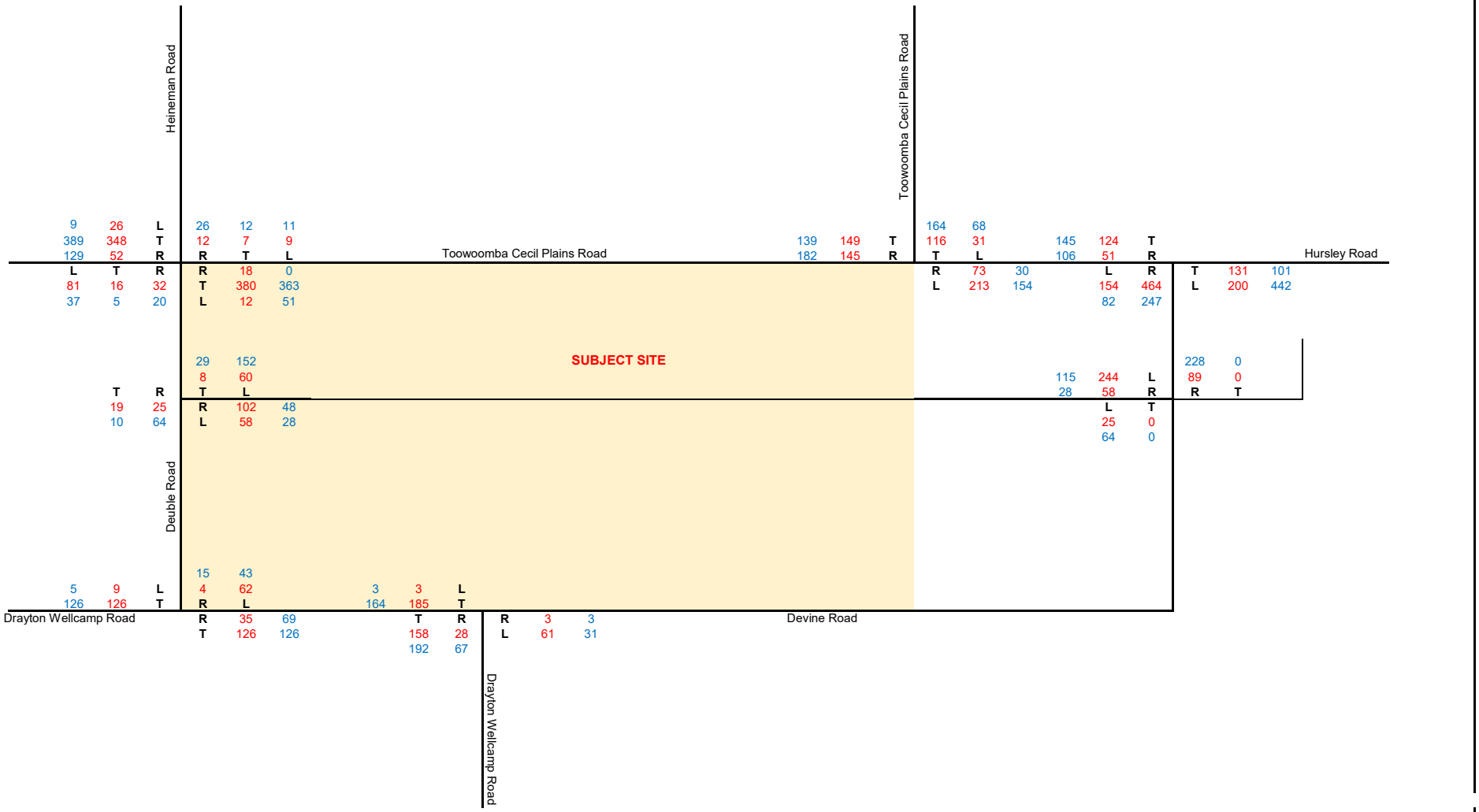
P6218	Toowoomba Cecil Plains Road Wellcamp TIA Development Traffic Distribution In	**Notes:** Peak Hours **AM** 7:15 - 8:15 **PM** 2:30 - 3:30	Survey Year: 2017 Design Year: 2028	Sheet 7



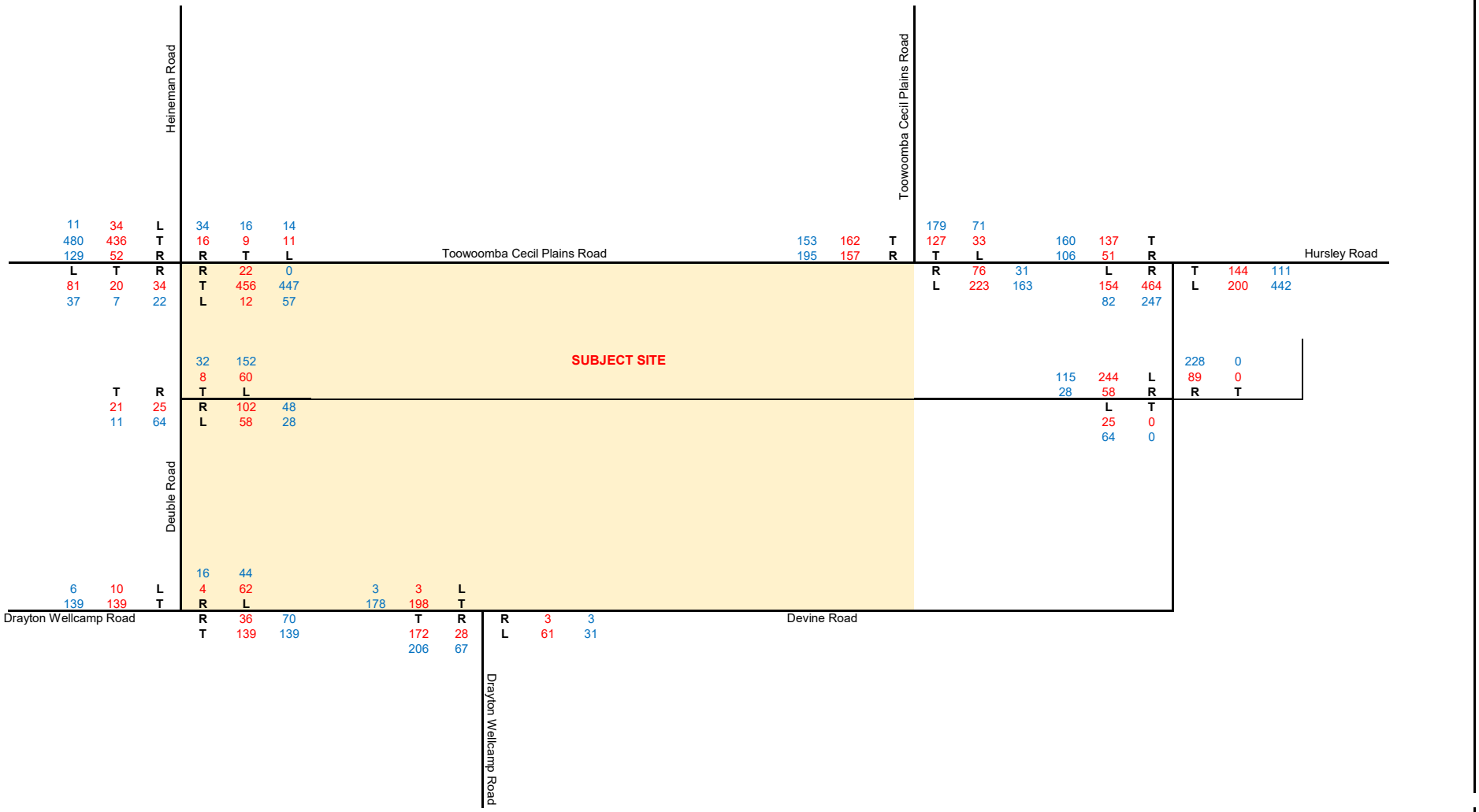
P6218	Toowoomba Cecil Plains Road Wellcamp TIA Development Traffic Assignment In	**Notes:** Peak Hours **AM** 7:15 - 8:15 **PM** 2:30 - 3:30 Survey Year: 2017 Design Year: 2028	Sheet 8



P6218	Toowoomba Cecil Plains Road Wellcamp TIA Total Development Traffic	**Notes:** Peak Hours **AM** 7:15 - 8:15 **PM** 2:30 - 3:30 Survey Year: 2017 Design Year: 2028	Sheet 9



P6218	Toowoomba Cecil Plains Road Wellcamp TIA 2040 Design Traffic	**Notes:** Peak Hours **AM** 7:15 - 8:15 **PM** 2:30 - 3:30	Survey Year: 2017 Design Year: 2040	Sheet 10



P6218	Toowoomba Cecil Plains Road Wellcamp TIA 2050 Design Traffic	**Notes:** Peak Hours **AM** 7:15 - 8:15 **PM** 2:30 - 3:30 Survey Year: 2017 Design Year: 2050	Sheet 11

2040BG

North/South Distributor Road

	1	1	L	1	1	1	
	145	124	T	1	1	1	
Hursley Road	80	41	R	R	T	L	Hursley Road
	L	T	R	R	1	1	
	94	1	280	T	131	101	
	53	1	160	L	121	240	

North/South Distributor Road

2050BG

North/South Distributor Road

	1	1	L	1	1	1	
	160	137	T	1	1	1	
Hursley Road	80	41	R	R	T	L	Hursley Road
	L	T	R	R	1	1	
	94	1	280	T	144	111	
	53	1	160	L	121	240	

North/South Distributor Road

2040DES

North/South Distributor Road

	20	8	L	9	1	25	
	145	124	T	18	1	53	
Hursley Road	106	51	R	R	T	L	Hursley Road
	L	T	R	R	23	58	
	154	1	464	T	131	101	
	82	1	247	L	200	442	

North/South Distributor Road

2050DES

North/South Distributor Road

	20	8	L	9	1	25	
	160	137	T	18	1	53	
Hursley Road	106	51	R	R	T	L	Hursley Road
	L	T	R	R	23	58	
	154	1	464	T	144	111	
	82	1	247	L	200	442	

North/South Distributor Road

P6218	Toowoomba Cecil Plains Road Wellcamp TIA	**Notes:** Peak Hours **AM** 7:15 - 8:15 **PM** 2:30 - 3:30	Survey Year: 2017 Design Year: 2050	Sheet 12
	Hursley Road / North/South Distributer Road Roundabout Intersection - Northern PIA Development			

Attachment C

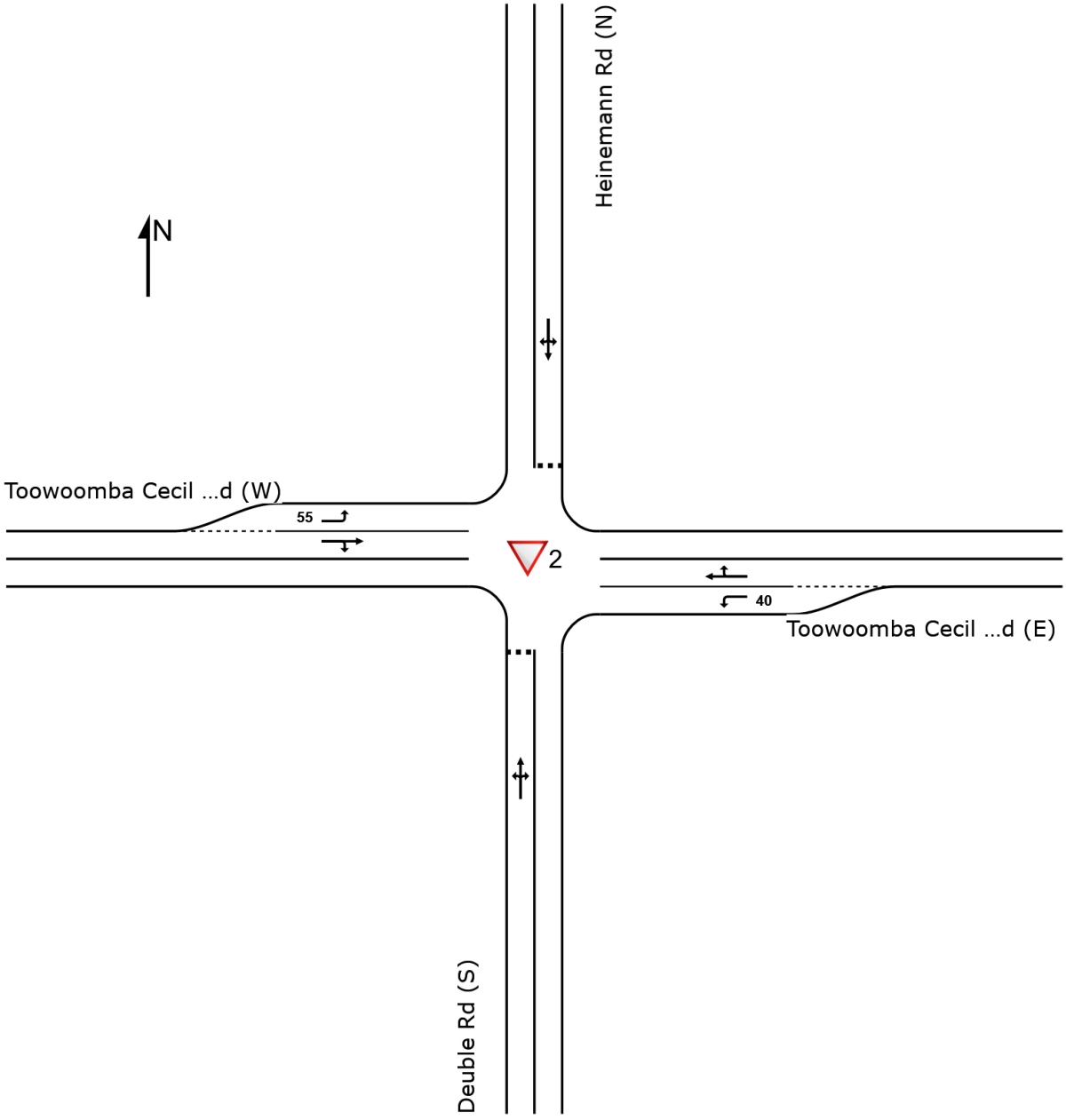
SIDRA Outputs

SITE LAYOUT

Site: 2 [2040 AM BG (Site Folder: General)]

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Existing
Site Category: (None)
Give-Way (Two-Way)

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



MOVEMENT SUMMARY

Site: 2 [2040 AM BG (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Existing
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Deuble Rd (S)															
1	L2	All MCs	2	3.0	2	3.0	0.078	6.2	LOS A	0.3	2.0	0.68	0.83	0.68	49.3
2	T1	All MCs	16	3.0	16	3.0	0.078	12.4	LOS B	0.3	2.0	0.68	0.83	0.68	38.6
3	R2	All MCs	9	3.0	9	3.0	0.078	15.5	LOS C	0.3	2.0	0.68	0.83	0.68	49.3
Approach			27	3.0	27	3.0	0.078	13.0	LOS B	0.3	2.0	0.68	0.83	0.68	43.4
East: Toowoomba Cecil Plains Rd (E)															
4	L2	All MCs	2	3.0	2	3.0	0.001	7.9	LOS A	0.0	0.0	0.00	0.66	0.00	71.3
5	T1	All MCs	343	3.0	343	3.0	0.199	0.2	LOS A	0.2	1.5	0.07	0.08	0.07	98.0
6	R2	All MCs	18	3.0	18	3.0	0.199	9.6	LOS A	0.2	1.5	0.07	0.08	0.07	74.8
Approach			363	3.0	363	3.0	0.199	0.7	NA	0.2	1.5	0.07	0.09	0.07	96.8
North: Heinemann Rd (N)															
7	L2	All MCs	9	3.0	9	3.0	0.072	7.2	LOS A	0.2	1.8	0.62	0.79	0.62	51.6
8	T1	All MCs	7	3.0	7	3.0	0.072	13.3	LOS B	0.2	1.8	0.62	0.79	0.62	39.5
9	R2	All MCs	12	3.0	12	3.0	0.072	16.9	LOS C	0.2	1.8	0.62	0.79	0.62	51.5
Approach			28	3.0	28	3.0	0.072	12.9	LOS B	0.2	1.8	0.62	0.79	0.62	48.2
West: Toowoomba Cecil Plains Rd (W)															
10	L2	All MCs	26	3.0	26	3.0	0.014	7.9	LOS A	0.0	0.0	0.00	0.66	0.00	64.0
11	T1	All MCs	348	3.0	348	3.0	0.184	0.0	LOS A	0.0	0.2	0.01	0.01	0.01	99.8
12	R2	All MCs	2	3.0	2	3.0	0.184	7.9	LOS A	0.0	0.2	0.01	0.01	0.01	65.5
Approach			376	3.0	376	3.0	0.184	0.6	NA	0.0	0.2	0.01	0.05	0.01	96.9
All Vehicles			794	3.0	794	3.0	0.199	1.5	NA	0.3	2.0	0.08	0.12	0.08	91.6

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

MOVEMENT SUMMARY

Site: 2 [2040 PM BG (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Existing
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Deuble Rd (S)															
1	L2	All MCs	1	3.0	1	3.0	0.050	6.1	LOS A	0.2	1.2	0.70	0.84	0.70	48.2
2	T1	All MCs	5	3.0	5	3.0	0.050	12.9	LOS B	0.2	1.2	0.70	0.84	0.70	37.6
3	R2	All MCs	9	3.0	9	3.0	0.050	16.5	LOS C	0.2	1.2	0.70	0.84	0.70	48.2
Approach			15	3.0	15	3.0	0.050	14.6	LOS B	0.2	1.2	0.70	0.84	0.70	45.0
East: Toowoomba Cecil Plains Rd (E)															
4	L2	All MCs	2	3.0	2	3.0	0.001	7.9	LOS A	0.0	0.0	0.00	0.66	0.00	71.3
5	T1	All MCs	343	3.0	343	3.0	0.199	0.2	LOS A	0.2	1.6	0.07	0.09	0.07	98.0
6	R2	All MCs	18	3.0	18	3.0	0.199	9.8	LOS A	0.2	1.6	0.07	0.09	0.07	74.7
Approach			363	3.0	363	3.0	0.199	0.7	NA	0.2	1.6	0.07	0.09	0.07	96.7
North: Heinemann Rd (N)															
7	L2	All MCs	9	3.0	9	3.0	0.076	7.5	LOS A	0.3	1.9	0.63	0.81	0.63	50.9
8	T1	All MCs	7	3.0	7	3.0	0.076	14.1	LOS B	0.3	1.9	0.63	0.81	0.63	39.1
9	R2	All MCs	12	3.0	12	3.0	0.076	17.6	LOS C	0.3	1.9	0.63	0.81	0.63	50.9
Approach			28	3.0	28	3.0	0.076	13.5	LOS B	0.3	1.9	0.63	0.81	0.63	47.6
West: Toowoomba Cecil Plains Rd (W)															
10	L2	All MCs	9	3.0	9	3.0	0.005	7.9	LOS A	0.0	0.0	0.00	0.66	0.00	64.0
11	T1	All MCs	389	3.0	389	3.0	0.205	0.0	LOS A	0.0	0.2	0.01	0.00	0.01	99.8
12	R2	All MCs	2	3.0	2	3.0	0.205	7.9	LOS A	0.0	0.2	0.01	0.00	0.01	65.5
Approach			400	3.0	400	3.0	0.205	0.2	NA	0.0	0.2	0.01	0.02	0.01	98.7
All Vehicles			806	3.0	806	3.0	0.205	1.2	NA	0.3	1.9	0.07	0.09	0.07	93.7

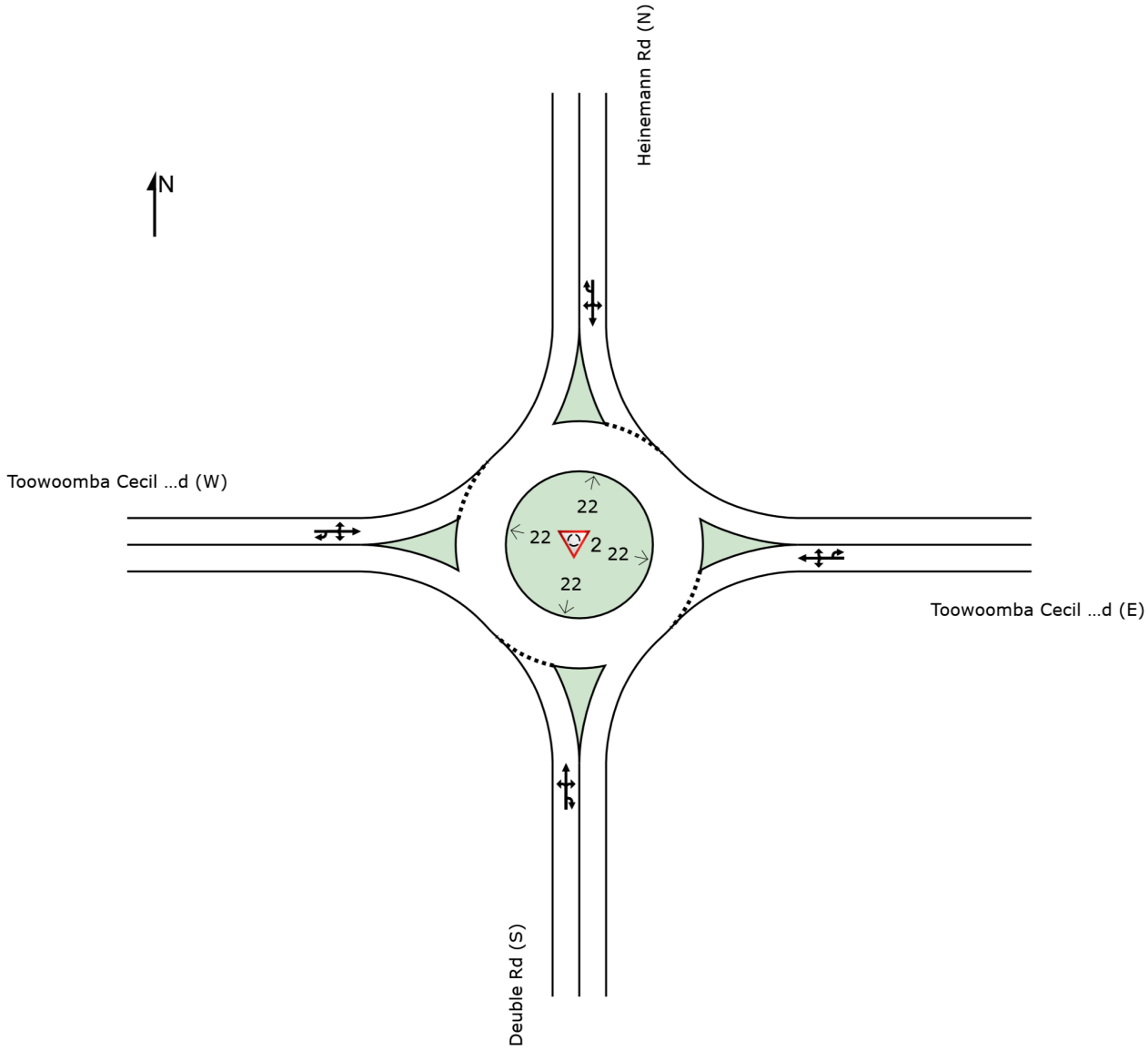
Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of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

SITE LAYOUT

Site: 2 [2040 AM BG (Site Folder: General)]

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Single Lane Roundabout
Site Category: (None)
Roundabout

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



MOVEMENT SUMMARY

Site: 2 [2040 AM DES (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Single Lane Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Deuble Rd (S)															
1	L2	All MCs	81	3.0	81	3.0	0.133	4.9	LOS A	0.7	5.2	0.54	0.58	0.54	54.7
2	T1	All MCs	16	3.0	16	3.0	0.133	4.8	LOS A	0.7	5.2	0.54	0.58	0.54	44.6
3	R2	All MCs	32	3.0	32	3.0	0.133	9.5	LOS A	0.7	5.2	0.54	0.58	0.54	54.6
3u	U	All MCs	1	3.0	1	3.0	0.133	11.4	LOS B	0.7	5.2	0.54	0.58	0.54	44.5
Approach			130	3.0	130	3.0	0.133	6.1	LOS A	0.7	5.2	0.54	0.58	0.54	53.6
East: Toowoomba Cecil Plains Rd (E)															
4	L2	All MCs	12	3.0	12	3.0	0.294	7.1	LOS A	1.8	13.0	0.25	0.53	0.25	57.4
5	T1	All MCs	380	3.0	380	3.0	0.294	8.1	LOS A	1.8	13.0	0.25	0.53	0.25	71.4
6	R2	All MCs	18	3.0	18	3.0	0.294	12.7	LOS B	1.8	13.0	0.25	0.53	0.25	61.2
6u	U	All MCs	1	3.0	1	3.0	0.294	15.3	LOS B	1.8	13.0	0.25	0.53	0.25	71.0
Approach			411	3.0	411	3.0	0.294	8.3	LOS A	1.8	13.0	0.25	0.53	0.25	70.5
North: Heinemann Rd (N)															
7	L2	All MCs	9	3.0	9	3.0	0.030	5.9	LOS A	0.2	1.1	0.52	0.61	0.52	57.0
8	T1	All MCs	7	3.0	7	3.0	0.030	6.0	LOS A	0.2	1.1	0.52	0.61	0.52	43.9
9	R2	All MCs	12	3.0	12	3.0	0.030	10.9	LOS B	0.2	1.1	0.52	0.61	0.52	56.8
9u	U	All MCs	1	3.0	1	3.0	0.030	13.0	LOS B	0.2	1.1	0.52	0.61	0.52	40.9
Approach			29	3.0	29	3.0	0.030	8.2	LOS A	0.2	1.1	0.52	0.61	0.52	52.9
West: Toowoomba Cecil Plains Rd (W)															
10	L2	All MCs	26	3.0	26	3.0	0.303	7.1	LOS A	2.0	14.4	0.26	0.54	0.26	61.9
11	T1	All MCs	348	3.0	348	3.0	0.303	8.1	LOS A	2.0	14.4	0.26	0.54	0.26	71.0
12	R2	All MCs	52	3.0	52	3.0	0.303	12.6	LOS B	2.0	14.4	0.26	0.54	0.26	56.6
12u	U	All MCs	1	3.0	1	3.0	0.303	15.3	LOS B	2.0	14.4	0.26	0.54	0.26	70.6
Approach			427	3.0	427	3.0	0.303	8.6	LOS A	2.0	14.4	0.26	0.54	0.26	68.5
All Vehicles			997	3.0	997	3.0	0.303	8.1	LOS A	2.0	14.4	0.30	0.54	0.30	66.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [2040 PM DES (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Single Lane Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Deuble Rd (S)															
1	L2	All MCs	37	3.0	37	3.0	0.063	4.6	LOS A	0.3	2.4	0.51	0.58	0.51	54.6
2	T1	All MCs	5	3.0	5	3.0	0.063	4.5	LOS A	0.3	2.4	0.51	0.58	0.51	44.5
3	R2	All MCs	20	3.0	20	3.0	0.063	9.2	LOS A	0.3	2.4	0.51	0.58	0.51	54.5
3u	U	All MCs	1	3.0	1	3.0	0.063	11.1	LOS B	0.3	2.4	0.51	0.58	0.51	44.4
Approach			63	3.0	63	3.0	0.063	6.2	LOS A	0.3	2.4	0.51	0.58	0.51	53.7
East: Toowoomba Cecil Plains Rd (E)															
4	L2	All MCs	51	3.0	51	3.0	0.328	7.8	LOS A	2.0	14.6	0.40	0.56	0.40	56.8
5	T1	All MCs	353	3.0	353	3.0	0.328	8.7	LOS A	2.0	14.6	0.40	0.56	0.40	70.5
6	R2	All MCs	1	3.0	1	3.0	0.328	13.3	LOS B	2.0	14.6	0.40	0.56	0.40	60.3
6u	U	All MCs	1	3.0	1	3.0	0.328	15.9	LOS B	2.0	14.6	0.40	0.56	0.40	70.1
Approach			406	3.0	406	3.0	0.328	8.7	LOS A	2.0	14.6	0.40	0.56	0.40	68.5
North: Heinemann Rd (N)															
7	L2	All MCs	11	3.0	11	3.0	0.056	6.6	LOS A	0.3	2.1	0.58	0.67	0.58	55.7
8	T1	All MCs	12	3.0	12	3.0	0.056	6.7	LOS A	0.3	2.1	0.58	0.67	0.58	43.2
9	R2	All MCs	26	3.0	26	3.0	0.056	11.6	LOS B	0.3	2.1	0.58	0.67	0.58	55.6
9u	U	All MCs	1	3.0	1	3.0	0.056	13.7	LOS B	0.3	2.1	0.58	0.67	0.58	39.9
Approach			50	3.0	50	3.0	0.056	9.4	LOS A	0.3	2.1	0.58	0.67	0.58	52.0
West: Toowoomba Cecil Plains Rd (W)															
10	L2	All MCs	9	3.0	9	3.0	0.341	6.9	LOS A	2.5	17.8	0.17	0.57	0.17	62.0
11	T1	All MCs	389	3.0	389	3.0	0.341	7.9	LOS A	2.5	17.8	0.17	0.57	0.17	71.0
12	R2	All MCs	129	3.0	129	3.0	0.341	12.4	LOS B	2.5	17.8	0.17	0.57	0.17	56.6
12u	U	All MCs	1	3.0	1	3.0	0.341	15.1	LOS B	2.5	17.8	0.17	0.57	0.17	70.6
Approach			528	3.0	528	3.0	0.341	9.0	LOS A	2.5	17.8	0.17	0.57	0.17	66.9
All Vehicles			1047	3.0	1047	3.0	0.341	8.7	LOS A	2.5	17.8	0.30	0.57	0.30	66.0

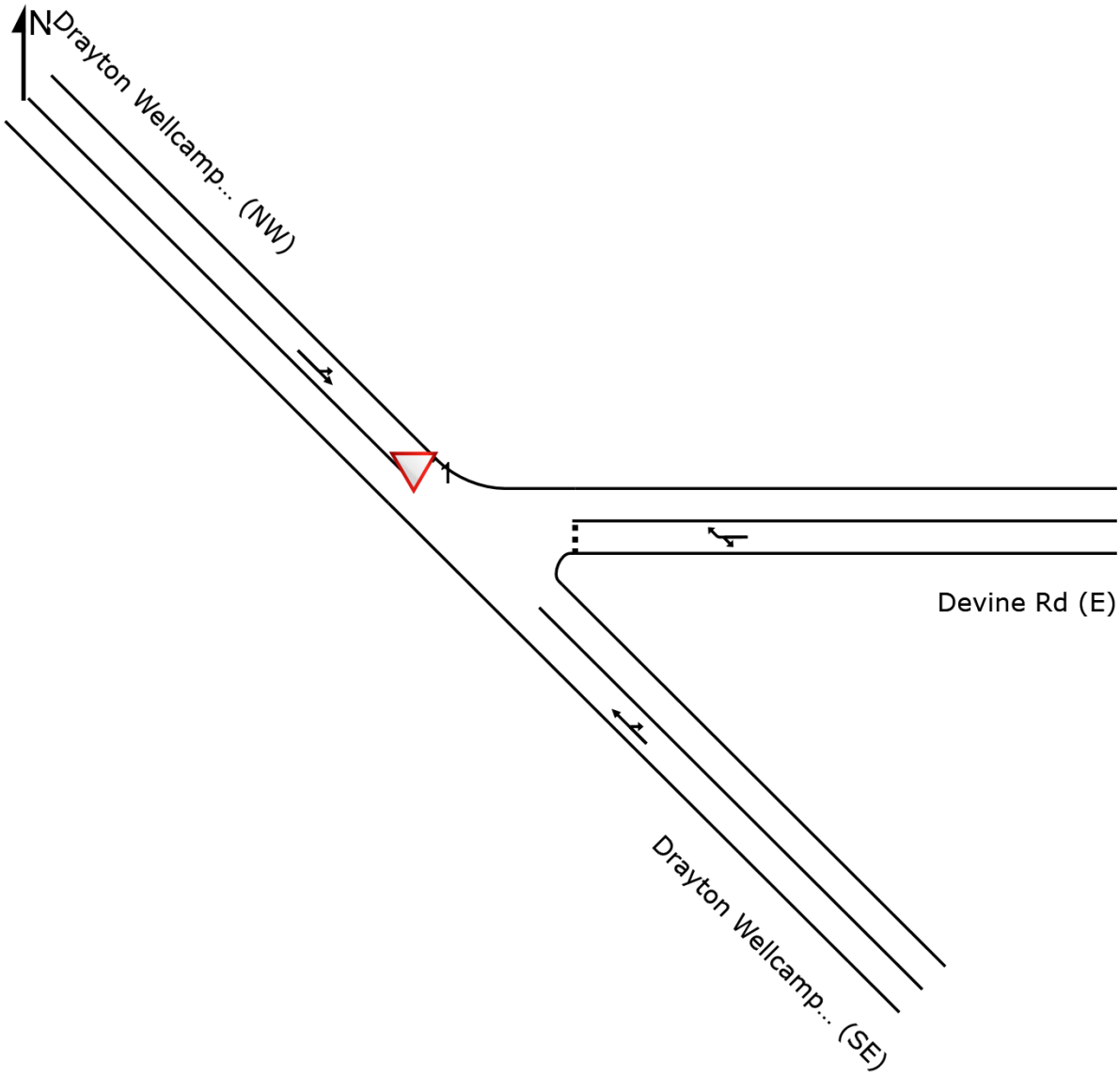
Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 1 [2040 AM BG (Site Folder: Realignment)]

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Realignment
Site Category: (None)
Give-Way (Two-Way)

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



MOVEMENT SUMMARY

Site: 1 [2040 AM BG (Site Folder: Realignment)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Realignment
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Drayton Wellcamp Rd (SE)															
22	T1	All MCs	133	0.0	133	0.0	0.070	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	99.5
23b	R3	All MCs	3	0.0	3	0.0	0.070	7.9	LOS A	0.0	0.0	0.00	0.02	0.00	87.7
Approach			136	0.0	136	0.0	0.070	0.2	NA	0.0	0.0	0.00	0.02	0.00	99.2
East: Devine Rd (E)															
4b	L3	All MCs	3	0.0	3	0.0	0.005	5.7	LOS A	0.0	0.1	0.25	0.51	0.25	55.3
6a	R1	All MCs	3	3.0	3	3.0	0.005	5.1	LOS A	0.0	0.1	0.25	0.51	0.25	54.7
Approach			6	1.5	6	1.5	0.005	5.4	LOS A	0.0	0.1	0.25	0.51	0.25	55.0
NorthWest: Drayton Wellcamp Rd (NW)															
27a	L1	All MCs	3	3.0	3	3.0	0.091	7.4	LOS A	0.3	2.4	0.12	0.61	0.12	57.1
28	T1	All MCs	127	0.0	127	0.0	0.091	6.8	LOS A	0.3	2.4	0.12	0.61	0.12	74.7
Approach			130	0.1	130	0.1	0.091	6.9	LOS A	0.3	2.4	0.12	0.61	0.12	74.2
All Vehicles			272	0.1	272	0.1	0.091	3.5	NA	0.3	2.4	0.06	0.31	0.06	84.1

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

MOVEMENT SUMMARY

Site: 1 [2040 PM BG (Site Folder: Realignment)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Realignment
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Drayton Wellcamp Rd (SE)															
22	T1	All MCs	128	0.0	128	0.0	0.067	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	99.5
23b	R3	All MCs	3	0.0	3	0.0	0.067	7.9	LOS A	0.0	0.0	0.00	0.02	0.00	87.7
Approach			131	0.0	131	0.0	0.067	0.2	NA	0.0	0.0	0.00	0.02	0.00	99.2
East: Devine Rd (E)															
4b	L3	All MCs	3	0.0	3	0.0	0.005	5.8	LOS A	0.0	0.1	0.26	0.51	0.26	55.3
6a	R1	All MCs	3	3.0	3	3.0	0.005	5.1	LOS A	0.0	0.1	0.26	0.51	0.26	54.7
Approach			6	1.5	6	1.5	0.005	5.4	LOS A	0.0	0.1	0.26	0.51	0.26	55.0
NorthWest: Drayton Wellcamp Rd (NW)															
27a	L1	All MCs	3	3.0	3	3.0	0.098	7.4	LOS A	0.4	2.6	0.12	0.61	0.12	57.1
28	T1	All MCs	136	0.0	136	0.0	0.098	6.8	LOS A	0.4	2.6	0.12	0.61	0.12	74.7
Approach			139	0.1	139	0.1	0.098	6.9	LOS A	0.4	2.6	0.12	0.61	0.12	74.2
All Vehicles			276	0.1	276	0.1	0.098	3.7	NA	0.4	2.6	0.07	0.32	0.07	83.6

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

MOVEMENT SUMMARY

Site: 1 [2050 AM BG (Site Folder: Realignment)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Realignment
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Drayton Wellcamp Rd (SE)															
22	T1	All MCs	147	0.0	147	0.0	0.077	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	99.5
23b	R3	All MCs	3	0.0	3	0.0	0.077	7.9	LOS A	0.0	0.0	0.00	0.02	0.00	87.7
Approach			150	0.0	150	0.0	0.077	0.2	NA	0.0	0.0	0.00	0.02	0.00	99.3
East: Devine Rd (E)															
4b	L3	All MCs	3	0.0	3	0.0	0.005	5.8	LOS A	0.0	0.1	0.27	0.52	0.27	55.3
6a	R1	All MCs	3	3.0	3	3.0	0.005	5.2	LOS A	0.0	0.1	0.27	0.52	0.27	54.6
Approach			6	1.5	6	1.5	0.005	5.5	LOS A	0.0	0.1	0.27	0.52	0.27	54.9
NorthWest: Drayton Wellcamp Rd (NW)															
27a	L1	All MCs	3	3.0	3	3.0	0.101	7.4	LOS A	0.4	2.7	0.13	0.60	0.13	57.1
28	T1	All MCs	140	0.0	140	0.0	0.101	6.9	LOS A	0.4	2.7	0.13	0.60	0.13	74.7
Approach			143	0.1	143	0.1	0.101	6.9	LOS A	0.4	2.7	0.13	0.60	0.13	74.2
All Vehicles			299	0.1	299	0.1	0.101	3.5	NA	0.4	2.7	0.07	0.31	0.07	84.3

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

MOVEMENT SUMMARY

Site: 1 [2050 PM BG (Site Folder: Realignment)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Realignment
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Drayton Wellcamp Rd (SE)															
22	T1	All MCs	142	0.0	142	0.0	0.075	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	99.5
23b	R3	All MCs	3	0.0	3	0.0	0.075	7.9	LOS A	0.0	0.0	0.00	0.02	0.00	87.7
Approach			145	0.0	145	0.0	0.075	0.2	NA	0.0	0.0	0.00	0.02	0.00	99.2
East: Devine Rd (E)															
4b	L3	All MCs	3	0.0	3	0.0	0.005	5.8	LOS A	0.0	0.1	0.28	0.52	0.28	55.2
6a	R1	All MCs	3	3.0	3	3.0	0.005	5.2	LOS A	0.0	0.1	0.28	0.52	0.28	54.6
Approach			6	1.5	6	1.5	0.005	5.5	LOS A	0.0	0.1	0.28	0.52	0.28	54.9
NorthWest: Drayton Wellcamp Rd (NW)															
27a	L1	All MCs	3	3.0	3	3.0	0.108	7.4	LOS A	0.4	2.9	0.13	0.60	0.13	57.1
28	T1	All MCs	150	0.0	150	0.0	0.108	6.9	LOS A	0.4	2.9	0.13	0.60	0.13	74.7
Approach			153	0.1	153	0.1	0.108	6.9	LOS A	0.4	2.9	0.13	0.60	0.13	74.2
All Vehicles			304	0.1	304	0.1	0.108	3.7	NA	0.4	2.9	0.07	0.32	0.07	83.7

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

MOVEMENT SUMMARY

Site: 1 [2040 AM DES (Site Folder: Realignment)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Realignment
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Drayton Wellcamp Rd (SE)															
22	T1	All MCs	158	0.0	158	0.0	0.098	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	96.8
23b	R3	All MCs	28	0.0	28	0.0	0.098	7.9	LOS A	0.0	0.0	0.00	0.11	0.00	85.6
Approach			186	0.0	186	0.0	0.098	1.2	NA	0.0	0.0	0.00	0.11	0.00	94.9
East: Devine Rd (E)															
4b	L3	All MCs	61	0.0	61	0.0	0.047	6.0	LOS A	0.2	1.3	0.28	0.55	0.28	54.7
6a	R1	All MCs	3	3.0	3	3.0	0.047	5.8	LOS A	0.2	1.3	0.28	0.55	0.28	54.1
Approach			64	0.1	64	0.1	0.047	6.0	LOS A	0.2	1.3	0.28	0.55	0.28	54.6
NorthWest: Drayton Wellcamp Rd (NW)															
27a	L1	All MCs	3	3.0	3	3.0	0.136	7.5	LOS A	0.5	3.7	0.20	0.61	0.20	56.8
28	T1	All MCs	185	0.0	185	0.0	0.136	7.0	LOS A	0.5	3.7	0.20	0.61	0.20	74.3
Approach			188	0.0	188	0.0	0.136	7.0	LOS A	0.5	3.7	0.20	0.61	0.20	73.9
All Vehicles			438	0.0	438	0.0	0.136	4.4	NA	0.5	3.7	0.12	0.39	0.12	77.1

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

MOVEMENT SUMMARY

Site: 1 [2040 PM DES (Site Folder: Realignment)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Realignment
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Drayton Wellcamp Rd (SE)															
22	T1	All MCs	192	0.0	192	0.0	0.140	0.0	LOS A	0.0	0.0	0.00	0.20	0.00	94.6
23b	R3	All MCs	67	0.0	67	0.0	0.140	7.9	LOS A	0.0	0.0	0.00	0.20	0.00	83.9
Approach			259	0.0	259	0.0	0.140	2.1	NA	0.0	0.0	0.00	0.20	0.00	91.6
East: Devine Rd (E)															
4b	L3	All MCs	31	0.0	31	0.0	0.026	5.9	LOS A	0.1	0.7	0.26	0.54	0.26	54.8
6a	R1	All MCs	3	3.0	3	3.0	0.026	6.0	LOS A	0.1	0.7	0.26	0.54	0.26	54.2
Approach			34	0.3	34	0.3	0.026	5.9	LOS A	0.1	0.7	0.26	0.54	0.26	54.7
NorthWest: Drayton Wellcamp Rd (NW)															
27a	L1	All MCs	3	3.0	3	3.0	0.127	7.6	LOS A	0.5	3.4	0.25	0.62	0.25	56.7
28	T1	All MCs	164	0.0	164	0.0	0.127	7.2	LOS A	0.5	3.4	0.25	0.62	0.25	74.0
Approach			167	0.1	167	0.1	0.127	7.2	LOS A	0.5	3.4	0.25	0.62	0.25	73.6
All Vehicles			460	0.0	460	0.0	0.140	4.2	NA	0.5	3.4	0.11	0.38	0.11	80.4

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

MOVEMENT SUMMARY

Site: 1 [2050 AM DES (Site Folder: Realignment)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Realignment
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Drayton Wellcamp Rd (SE)															
22	T1	All MCs	172	0.0	172	0.0	0.105	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	97.0
23b	R3	All MCs	28	0.0	28	0.0	0.105	7.9	LOS A	0.0	0.0	0.00	0.11	0.00	85.7
Approach			200	0.0	200	0.0	0.105	1.1	NA	0.0	0.0	0.00	0.11	0.00	95.2
East: Devine Rd (E)															
4b	L3	All MCs	61	0.0	61	0.0	0.048	6.0	LOS A	0.2	1.3	0.29	0.56	0.29	54.6
6a	R1	All MCs	3	3.0	3	3.0	0.048	5.9	LOS A	0.2	1.3	0.29	0.56	0.29	54.0
Approach			64	0.1	64	0.1	0.048	6.0	LOS A	0.2	1.3	0.29	0.56	0.29	54.6
NorthWest: Drayton Wellcamp Rd (NW)															
27a	L1	All MCs	3	3.0	3	3.0	0.147	7.5	LOS A	0.6	4.0	0.20	0.61	0.20	56.8
28	T1	All MCs	198	0.0	198	0.0	0.147	7.0	LOS A	0.6	4.0	0.20	0.61	0.20	74.3
Approach			201	0.0	201	0.0	0.147	7.0	LOS A	0.6	4.0	0.20	0.61	0.20	73.9
All Vehicles			465	0.0	465	0.0	0.147	4.3	NA	0.6	4.0	0.13	0.39	0.13	77.6

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

MOVEMENT SUMMARY

Site: 1 [2050 PM DES (Site Folder: Realignment)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Realignment
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Drayton Wellcamp Rd (SE)															
22	T1	All MCs	206	0.0	206	0.0	0.147	0.0	LOS A	0.0	0.0	0.00	0.19	0.00	94.9
23b	R3	All MCs	67	0.0	67	0.0	0.147	7.9	LOS A	0.0	0.0	0.00	0.19	0.00	84.1
Approach			273	0.0	273	0.0	0.147	2.0	NA	0.0	0.0	0.00	0.19	0.00	92.0
East: Devine Rd (E)															
4b	L3	All MCs	31	0.0	31	0.0	0.026	5.9	LOS A	0.1	0.7	0.27	0.54	0.27	54.7
6a	R1	All MCs	3	3.0	3	3.0	0.026	6.2	LOS A	0.1	0.7	0.27	0.54	0.27	54.1
Approach			34	0.3	34	0.3	0.026	5.9	LOS A	0.1	0.7	0.27	0.54	0.27	54.7
NorthWest: Drayton Wellcamp Rd (NW)															
27a	L1	All MCs	3	3.0	3	3.0	0.139	7.6	LOS A	0.5	3.7	0.26	0.62	0.26	56.6
28	T1	All MCs	178	0.0	178	0.0	0.139	7.2	LOS A	0.5	3.7	0.26	0.62	0.26	73.9
Approach			181	0.0	181	0.0	0.139	7.2	LOS A	0.5	3.7	0.26	0.62	0.26	73.6
All Vehicles			488	0.0	488	0.0	0.147	4.2	NA	0.5	3.7	0.12	0.37	0.12	80.6

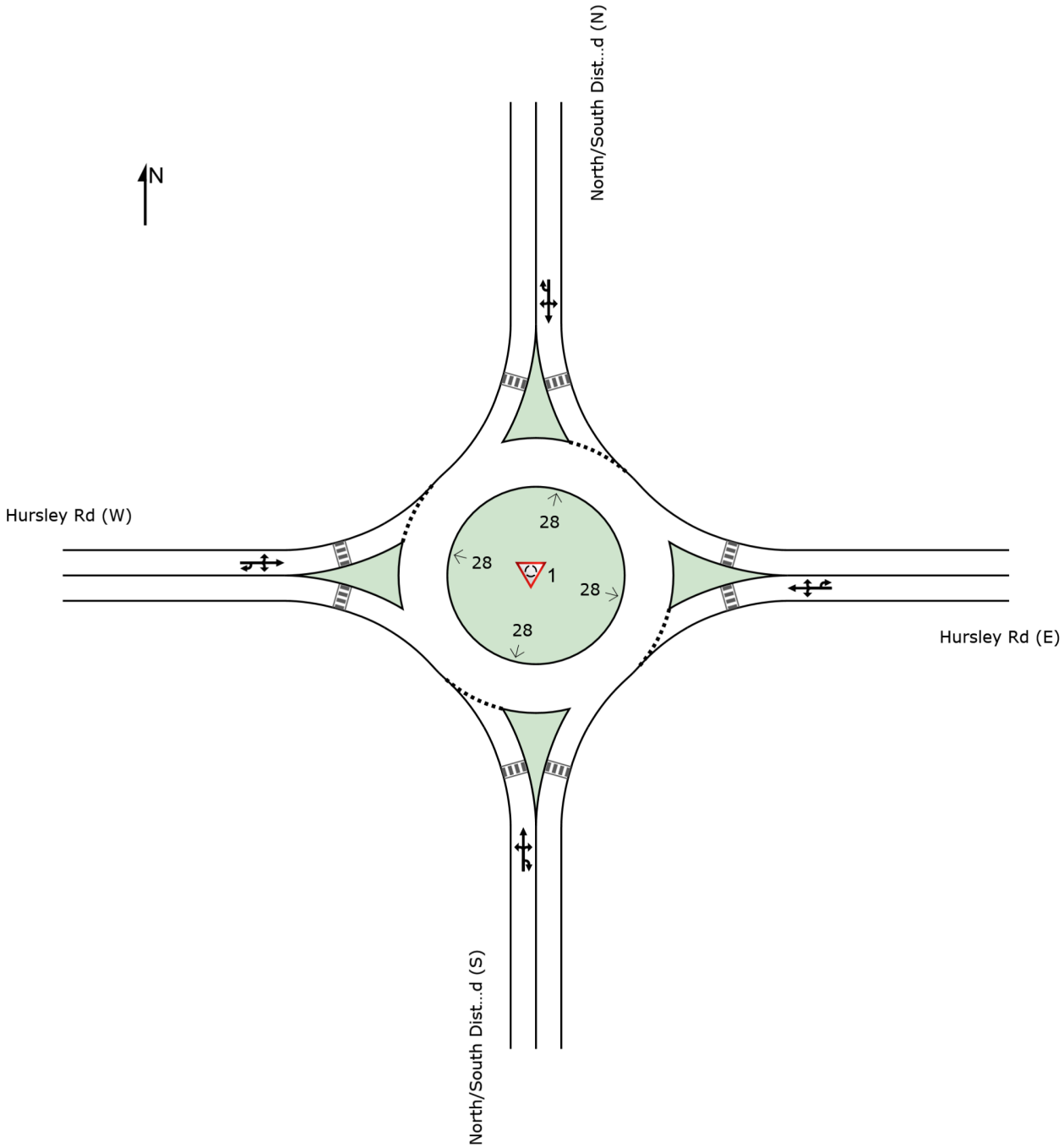
Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of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

SITE LAYOUT

Site: 1 [2040 AM BG (Site Folder: General)]

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Roundabout
Site Category: (None)
Roundabout

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



MOVEMENT SUMMARY

Site: 1 [2040 AM BG (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: North/South Distributor Rd (S)															
1	L2	All MCs	99	3.0	99	3.0	0.302	4.3	LOS A	1.8	13.3	0.36	0.58	0.36	51.4
2	T1	All MCs	1	3.0	1	3.0	0.302	4.3	LOS A	1.8	13.3	0.36	0.58	0.36	51.7
3	R2	All MCs	295	3.0	295	3.0	0.302	9.9	LOS A	1.8	13.3	0.36	0.58	0.36	50.8
3u	U	All MCs	1	3.0	1	3.0	0.302	12.1	LOS B	1.8	13.3	0.36	0.58	0.36	50.8
Approach			396	3.0	396	3.0	0.302	8.5	LOS A	1.8	13.3	0.36	0.58	0.36	50.9
East: Hursley Rd (E)															
4	L2	All MCs	127	3.0	127	3.0	0.183	3.7	LOS A	1.1	7.8	0.19	0.39	0.19	54.7
5	T1	All MCs	138	3.0	138	3.0	0.183	3.7	LOS A	1.1	7.8	0.19	0.39	0.19	55.1
6	R2	All MCs	1	3.0	1	3.0	0.183	9.3	LOS A	1.1	7.8	0.19	0.39	0.19	54.0
6u	U	All MCs	1	3.0	1	3.0	0.183	11.6	LOS B	1.1	7.8	0.19	0.39	0.19	54.0
Approach			267	3.0	267	3.0	0.183	3.8	LOS A	1.1	7.8	0.19	0.39	0.19	54.9
North: North/South Distributor Rd (N)															
7	L2	All MCs	1	3.0	1	3.0	0.004	5.6	LOS A	0.0	0.2	0.53	0.56	0.53	51.3
8	T1	All MCs	1	3.0	1	3.0	0.004	5.6	LOS A	0.0	0.2	0.53	0.56	0.53	51.6
9	R2	All MCs	1	3.0	1	3.0	0.004	11.1	LOS B	0.0	0.2	0.53	0.56	0.53	50.7
9u	U	All MCs	1	3.0	1	3.0	0.004	13.4	LOS B	0.0	0.2	0.53	0.56	0.53	50.7
Approach			4	3.0	4	3.0	0.004	8.9	LOS A	0.0	0.2	0.53	0.56	0.53	51.1
West: Hursley Rd (W)															
10	L2	All MCs	1	3.0	1	3.0	0.159	5.0	LOS A	0.9	6.4	0.48	0.54	0.48	52.5
11	T1	All MCs	131	3.0	131	3.0	0.159	5.0	LOS A	0.9	6.4	0.48	0.54	0.48	52.8
12	R2	All MCs	43	3.0	43	3.0	0.159	10.6	LOS B	0.9	6.4	0.48	0.54	0.48	51.9
12u	U	All MCs	1	3.0	1	3.0	0.159	12.9	LOS B	0.9	6.4	0.48	0.54	0.48	51.9
Approach			176	3.0	176	3.0	0.159	6.4	LOS A	0.9	6.4	0.48	0.54	0.48	52.6
All Vehicles			843	3.0	843	3.0	0.302	6.6	LOS A	1.8	13.3	0.33	0.51	0.33	52.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2040 PM BG (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: North/South Distributor Rd (S)															
1	L2	All MCs	56	3.0	56	3.0	0.171	4.0	LOS A	0.9	6.8	0.29	0.57	0.29	51.6
2	T1	All MCs	1	3.0	1	3.0	0.171	4.1	LOS A	0.9	6.8	0.29	0.57	0.29	51.9
3	R2	All MCs	168	3.0	168	3.0	0.171	9.6	LOS A	0.9	6.8	0.29	0.57	0.29	51.0
3u	U	All MCs	1	3.0	1	3.0	0.171	11.9	LOS B	0.9	6.8	0.29	0.57	0.29	51.0
Approach			226	3.0	226	3.0	0.171	8.2	LOS A	0.9	6.8	0.29	0.57	0.29	51.1
East: Hursley Rd (E)															
4	L2	All MCs	253	3.0	253	3.0	0.260	4.0	LOS A	1.6	11.6	0.28	0.42	0.28	54.3
5	T1	All MCs	106	3.0	106	3.0	0.260	4.0	LOS A	1.6	11.6	0.28	0.42	0.28	54.8
6	R2	All MCs	1	3.0	1	3.0	0.260	9.5	LOS A	1.6	11.6	0.28	0.42	0.28	53.7
6u	U	All MCs	1	3.0	1	3.0	0.260	11.8	LOS B	1.6	11.6	0.28	0.42	0.28	53.7
Approach			361	3.0	361	3.0	0.260	4.0	LOS A	1.6	11.6	0.28	0.42	0.28	54.5
North: North/South Distributor Rd (N)															
7	L2	All MCs	1	3.0	1	3.0	0.004	5.2	LOS A	0.0	0.1	0.49	0.55	0.49	51.5
8	T1	All MCs	1	3.0	1	3.0	0.004	5.2	LOS A	0.0	0.1	0.49	0.55	0.49	51.8
9	R2	All MCs	1	3.0	1	3.0	0.004	10.8	LOS B	0.0	0.1	0.49	0.55	0.49	50.9
9u	U	All MCs	1	3.0	1	3.0	0.004	13.1	LOS B	0.0	0.1	0.49	0.55	0.49	50.9
Approach			4	3.0	4	3.0	0.004	8.6	LOS A	0.0	0.1	0.49	0.55	0.49	51.3
West: Hursley Rd (W)															
10	L2	All MCs	1	3.0	1	3.0	0.193	4.4	LOS A	1.1	7.8	0.37	0.51	0.37	52.6
11	T1	All MCs	153	3.0	153	3.0	0.193	4.4	LOS A	1.1	7.8	0.37	0.51	0.37	53.0
12	R2	All MCs	84	3.0	84	3.0	0.193	10.0	LOS A	1.1	7.8	0.37	0.51	0.37	52.0
12u	U	All MCs	1	3.0	1	3.0	0.193	12.2	LOS B	1.1	7.8	0.37	0.51	0.37	52.0
Approach			239	3.0	239	3.0	0.193	6.4	LOS A	1.1	7.8	0.37	0.51	0.37	52.6
All Vehicles			831	3.0	831	3.0	0.260	5.9	LOS A	1.6	11.6	0.31	0.49	0.31	53.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2050 AM BG (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: North/South Distributor Rd (S)															
1	L2	All MCs	99	3.0	99	3.0	0.306	4.4	LOS A	1.9	13.5	0.38	0.58	0.38	51.3
2	T1	All MCs	1	3.0	1	3.0	0.306	4.4	LOS A	1.9	13.5	0.38	0.58	0.38	51.6
3	R2	All MCs	295	3.0	295	3.0	0.306	9.9	LOS A	1.9	13.5	0.38	0.58	0.38	50.7
3u	U	All MCs	1	3.0	1	3.0	0.306	12.2	LOS B	1.9	13.5	0.38	0.58	0.38	50.7
Approach			396	3.0	396	3.0	0.306	8.5	LOS A	1.9	13.5	0.38	0.58	0.38	50.9
East: Hursley Rd (E)															
4	L2	All MCs	127	3.0	127	3.0	0.191	3.7	LOS A	1.2	8.3	0.19	0.38	0.19	54.6
5	T1	All MCs	152	3.0	152	3.0	0.191	3.7	LOS A	1.2	8.3	0.19	0.38	0.19	55.1
6	R2	All MCs	1	3.0	1	3.0	0.191	9.3	LOS A	1.2	8.3	0.19	0.38	0.19	54.0
6u	U	All MCs	1	3.0	1	3.0	0.191	11.6	LOS B	1.2	8.3	0.19	0.38	0.19	54.0
Approach			281	3.0	281	3.0	0.191	3.8	LOS A	1.2	8.3	0.19	0.38	0.19	54.9
North: North/South Distributor Rd (N)															
7	L2	All MCs	1	3.0	1	3.0	0.004	5.6	LOS A	0.0	0.2	0.54	0.56	0.54	51.2
8	T1	All MCs	1	3.0	1	3.0	0.004	5.6	LOS A	0.0	0.2	0.54	0.56	0.54	51.6
9	R2	All MCs	1	3.0	1	3.0	0.004	11.2	LOS B	0.0	0.2	0.54	0.56	0.54	50.7
9u	U	All MCs	1	3.0	1	3.0	0.004	13.5	LOS B	0.0	0.2	0.54	0.56	0.54	50.7
Approach			4	3.0	4	3.0	0.004	9.0	LOS A	0.0	0.2	0.54	0.56	0.54	51.0
West: Hursley Rd (W)															
10	L2	All MCs	1	3.0	1	3.0	0.171	5.0	LOS A	1.0	7.0	0.48	0.54	0.48	52.5
11	T1	All MCs	144	3.0	144	3.0	0.171	5.0	LOS A	1.0	7.0	0.48	0.54	0.48	52.9
12	R2	All MCs	43	3.0	43	3.0	0.171	10.6	LOS B	1.0	7.0	0.48	0.54	0.48	51.9
12u	U	All MCs	1	3.0	1	3.0	0.171	12.9	LOS B	1.0	7.0	0.48	0.54	0.48	51.9
Approach			189	3.0	189	3.0	0.171	6.3	LOS A	1.0	7.0	0.48	0.54	0.48	52.6
All Vehicles			871	3.0	871	3.0	0.306	6.5	LOS A	1.9	13.5	0.34	0.51	0.34	52.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2050 PM BG (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: North/South Distributor Rd (S)															
1	L2	All MCs	56	3.0	56	3.0	0.185	4.4	LOS A	1.0	7.5	0.38	0.59	0.38	51.3
2	T1	All MCs	1	3.0	1	3.0	0.185	4.4	LOS A	1.0	7.5	0.38	0.59	0.38	51.6
3	R2	All MCs	168	3.0	168	3.0	0.185	10.0	LOS A	1.0	7.5	0.38	0.59	0.38	50.7
3u	U	All MCs	1	3.0	1	3.0	0.185	12.3	LOS B	1.0	7.5	0.38	0.59	0.38	50.7
Approach			226	3.0	226	3.0	0.185	8.6	LOS A	1.0	7.5	0.38	0.59	0.38	50.9
East: Hursley Rd (E)															
4	L2	All MCs	253	3.0	253	3.0	0.308	4.0	LOS A	2.1	14.8	0.30	0.45	0.30	53.8
5	T1	All MCs	117	3.0	117	3.0	0.308	4.0	LOS A	2.1	14.8	0.30	0.45	0.30	54.2
6	R2	All MCs	61	3.0	61	3.0	0.308	9.6	LOS A	2.1	14.8	0.30	0.45	0.30	53.1
6u	U	All MCs	1	3.0	1	3.0	0.308	11.8	LOS B	2.1	14.8	0.30	0.45	0.30	53.1
Approach			432	3.0	432	3.0	0.308	4.8	LOS A	2.1	14.8	0.30	0.45	0.30	53.8
North: North/South Distributor Rd (N)															
7	L2	All MCs	1	3.0	1	3.0	0.004	5.3	LOS A	0.0	0.2	0.50	0.55	0.50	51.4
8	T1	All MCs	1	3.0	1	3.0	0.004	5.3	LOS A	0.0	0.2	0.50	0.55	0.50	51.8
9	R2	All MCs	1	3.0	1	3.0	0.004	10.9	LOS B	0.0	0.2	0.50	0.55	0.50	50.9
9u	U	All MCs	1	3.0	1	3.0	0.004	13.2	LOS B	0.0	0.2	0.50	0.55	0.50	50.9
Approach			4	3.0	4	3.0	0.004	8.7	LOS A	0.0	0.2	0.50	0.55	0.50	51.2
West: Hursley Rd (W)															
10	L2	All MCs	1	3.0	1	3.0	0.218	4.7	LOS A	1.2	9.0	0.44	0.53	0.44	52.4
11	T1	All MCs	168	3.0	168	3.0	0.218	4.8	LOS A	1.2	9.0	0.44	0.53	0.44	52.8
12	R2	All MCs	84	3.0	84	3.0	0.218	10.3	LOS B	1.2	9.0	0.44	0.53	0.44	51.8
12u	U	All MCs	1	3.0	1	3.0	0.218	12.6	LOS B	1.2	9.0	0.44	0.53	0.44	51.8
Approach			255	3.0	255	3.0	0.218	6.6	LOS A	1.2	9.0	0.44	0.53	0.44	52.5
All Vehicles			917	3.0	917	3.0	0.308	6.3	LOS A	2.1	14.8	0.36	0.51	0.36	52.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2040 AM DES (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: North/South Distributor Rd (S)															
1	L2	All MCs	162	3.0	162	3.0	0.511	4.8	LOS A	3.9	28.3	0.51	0.59	0.51	50.9
2	T1	All MCs	1	3.0	1	3.0	0.511	4.8	LOS A	3.9	28.3	0.51	0.59	0.51	51.3
3	R2	All MCs	488	3.0	488	3.0	0.511	10.4	LOS B	3.9	28.3	0.51	0.59	0.51	50.4
3u	U	All MCs	1	3.0	1	3.0	0.511	12.7	LOS B	3.9	28.3	0.51	0.59	0.51	50.4
Approach			653	3.0	653	3.0	0.511	9.0	LOS A	3.9	28.3	0.51	0.59	0.51	50.5
East: Hursley Rd (E)															
4	L2	All MCs	211	3.0	211	3.0	0.260	3.8	LOS A	1.7	12.0	0.24	0.42	0.24	54.2
5	T1	All MCs	138	3.0	138	3.0	0.260	3.8	LOS A	1.7	12.0	0.24	0.42	0.24	54.6
6	R2	All MCs	24	3.0	24	3.0	0.260	9.4	LOS A	1.7	12.0	0.24	0.42	0.24	53.6
6u	U	All MCs	1	3.0	1	3.0	0.260	11.7	LOS B	1.7	12.0	0.24	0.42	0.24	53.6
Approach			374	3.0	374	3.0	0.260	4.2	LOS A	1.7	12.0	0.24	0.42	0.24	54.3
North: North/South Distributor Rd (N)															
7	L2	All MCs	56	3.0	56	3.0	0.094	7.2	LOS A	0.6	4.0	0.69	0.68	0.69	51.6
8	T1	All MCs	1	3.0	1	3.0	0.094	7.2	LOS A	0.6	4.0	0.69	0.68	0.69	51.9
9	R2	All MCs	19	3.0	19	3.0	0.094	12.7	LOS B	0.6	4.0	0.69	0.68	0.69	51.0
9u	U	All MCs	1	3.0	1	3.0	0.094	15.0	LOS B	0.6	4.0	0.69	0.68	0.69	51.0
Approach			77	3.0	77	3.0	0.094	8.7	LOS A	0.6	4.0	0.69	0.68	0.69	51.4
West: Hursley Rd (W)															
10	L2	All MCs	8	3.0	8	3.0	0.201	6.4	LOS A	1.2	8.9	0.65	0.63	0.65	51.7
11	T1	All MCs	131	3.0	131	3.0	0.201	6.4	LOS A	1.2	8.9	0.65	0.63	0.65	52.1
12	R2	All MCs	43	3.0	43	3.0	0.201	11.9	LOS B	1.2	8.9	0.65	0.63	0.65	51.1
12u	U	All MCs	1	3.0	1	3.0	0.201	14.2	LOS B	1.2	8.9	0.65	0.63	0.65	51.1
Approach			183	3.0	183	3.0	0.201	7.7	LOS A	1.2	8.9	0.65	0.63	0.65	51.8
All Vehicles			1286	3.0	1286	3.0	0.511	7.4	LOS A	3.9	28.3	0.46	0.55	0.46	51.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2040 PM DES (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: North/South Distributor Rd (S)															
1	L2	All MCs	86	3.0	86	3.0	0.281	4.5	LOS A	1.8	12.7	0.42	0.59	0.42	51.2
2	T1	All MCs	1	3.0	1	3.0	0.281	4.5	LOS A	1.8	12.7	0.42	0.59	0.42	51.5
3	R2	All MCs	260	3.0	260	3.0	0.281	10.1	LOS B	1.8	12.7	0.42	0.59	0.42	50.6
3u	U	All MCs	1	3.0	1	3.0	0.281	12.3	LOS B	1.8	12.7	0.42	0.59	0.42	50.6
Approach			348	3.0	348	3.0	0.281	8.7	LOS A	1.8	12.7	0.42	0.59	0.42	50.8
East: Hursley Rd (E)															
4	L2	All MCs	465	3.0	465	3.0	0.468	4.3	LOS A	3.8	27.0	0.43	0.47	0.43	53.5
5	T1	All MCs	106	3.0	106	3.0	0.468	4.4	LOS A	3.8	27.0	0.43	0.47	0.43	53.9
6	R2	All MCs	61	3.0	61	3.0	0.468	9.9	LOS A	3.8	27.0	0.43	0.47	0.43	52.9
6u	U	All MCs	1	3.0	1	3.0	0.468	12.2	LOS B	3.8	27.0	0.43	0.47	0.43	52.9
Approach			634	3.0	634	3.0	0.468	4.9	LOS A	3.8	27.0	0.43	0.47	0.43	53.5
North: North/South Distributor Rd (N)															
7	L2	All MCs	26	3.0	26	3.0	0.040	6.0	LOS A	0.2	1.6	0.58	0.62	0.58	52.3
8	T1	All MCs	1	3.0	1	3.0	0.040	6.0	LOS A	0.2	1.6	0.58	0.62	0.58	52.7
9	R2	All MCs	9	3.0	9	3.0	0.040	11.6	LOS B	0.2	1.6	0.58	0.62	0.58	51.7
9u	U	All MCs	1	3.0	1	3.0	0.040	13.9	LOS B	0.2	1.6	0.58	0.62	0.58	51.7
Approach			38	3.0	38	3.0	0.040	7.6	LOS A	0.2	1.6	0.58	0.62	0.58	52.1
West: Hursley Rd (W)															
10	L2	All MCs	21	3.0	21	3.0	0.264	5.3	LOS A	1.6	11.5	0.53	0.58	0.53	51.9
11	T1	All MCs	153	3.0	153	3.0	0.264	5.3	LOS A	1.6	11.5	0.53	0.58	0.53	52.2
12	R2	All MCs	112	3.0	112	3.0	0.264	10.9	LOS B	1.6	11.5	0.53	0.58	0.53	51.3
12u	U	All MCs	1	3.0	1	3.0	0.264	13.2	LOS B	1.6	11.5	0.53	0.58	0.53	51.3
Approach			286	3.0	286	3.0	0.264	7.5	LOS A	1.6	11.5	0.53	0.58	0.53	51.9
All Vehicles			1306	3.0	1306	3.0	0.468	6.6	LOS A	3.8	27.0	0.45	0.53	0.45	52.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2050 AM DES (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: North/South Distributor Rd (S)															
1	L2	All MCs	162	3.0	162	3.0	0.519	4.9	LOS A	4.0	29.0	0.53	0.60	0.53	50.8
2	T1	All MCs	1	3.0	1	3.0	0.519	4.9	LOS A	4.0	29.0	0.53	0.60	0.53	51.2
3	R2	All MCs	488	3.0	488	3.0	0.519	10.5	LOS B	4.0	29.0	0.53	0.60	0.53	50.3
3u	U	All MCs	1	3.0	1	3.0	0.519	12.8	LOS B	4.0	29.0	0.53	0.60	0.53	50.3
Approach			653	3.0	653	3.0	0.519	9.1	LOS A	4.0	29.0	0.53	0.60	0.53	50.4
East: Hursley Rd (E)															
4	L2	All MCs	211	3.0	211	3.0	0.274	3.9	LOS A	1.8	12.9	0.27	0.42	0.27	54.1
5	T1	All MCs	152	3.0	152	3.0	0.274	3.9	LOS A	1.8	12.9	0.27	0.42	0.27	54.5
6	R2	All MCs	24	3.0	24	3.0	0.274	9.5	LOS A	1.8	12.9	0.27	0.42	0.27	53.5
6u	U	All MCs	1	3.0	1	3.0	0.274	11.8	LOS B	1.8	12.9	0.27	0.42	0.27	53.5
Approach			387	3.0	387	3.0	0.274	4.3	LOS A	1.8	12.9	0.27	0.42	0.27	54.2
North: North/South Distributor Rd (N)															
7	L2	All MCs	56	3.0	56	3.0	0.097	7.4	LOS A	0.6	4.2	0.70	0.68	0.70	51.4
8	T1	All MCs	1	3.0	1	3.0	0.097	7.4	LOS A	0.6	4.2	0.70	0.68	0.70	51.8
9	R2	All MCs	19	3.0	19	3.0	0.097	12.9	LOS B	0.6	4.2	0.70	0.68	0.70	50.9
9u	U	All MCs	1	3.0	1	3.0	0.097	15.2	LOS B	0.6	4.2	0.70	0.68	0.70	50.9
Approach			77	3.0	77	3.0	0.097	8.9	LOS A	0.6	4.2	0.70	0.68	0.70	51.3
West: Hursley Rd (W)															
10	L2	All MCs	8	3.0	8	3.0	0.228	6.4	LOS A	1.4	10.3	0.66	0.63	0.66	51.6
11	T1	All MCs	144	3.0	144	3.0	0.228	6.4	LOS A	1.4	10.3	0.66	0.63	0.66	51.9
12	R2	All MCs	54	3.0	54	3.0	0.228	12.0	LOS B	1.4	10.3	0.66	0.63	0.66	51.0
12u	U	All MCs	1	3.0	1	3.0	0.228	14.3	LOS B	1.4	10.3	0.66	0.63	0.66	51.0
Approach			207	3.0	207	3.0	0.228	7.9	LOS A	1.4	10.3	0.66	0.63	0.66	51.7
All Vehicles			1324	3.0	1324	3.0	0.519	7.5	LOS A	4.0	29.0	0.49	0.56	0.49	51.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2050 PM DES (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Number: P6218
Project: Toowoomba Cecil Plains Road Wellcamp TIA
Configuration: Proposed Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: North/South Distributor Rd (S)															
1	L2	All MCs	86	3.0	86	3.0	0.284	4.6	LOS A	1.8	12.9	0.43	0.59	0.43	51.1
2	T1	All MCs	1	3.0	1	3.0	0.284	4.6	LOS A	1.8	12.9	0.43	0.59	0.43	51.5
3	R2	All MCs	260	3.0	260	3.0	0.284	10.1	LOS B	1.8	12.9	0.43	0.59	0.43	50.6
3u	U	All MCs	1	3.0	1	3.0	0.284	12.4	LOS B	1.8	12.9	0.43	0.59	0.43	50.6
Approach			348	3.0	348	3.0	0.284	8.7	LOS A	1.8	12.9	0.43	0.59	0.43	50.7
East: Hursley Rd (E)															
4	L2	All MCs	465	3.0	465	3.0	0.476	4.3	LOS A	3.9	27.8	0.43	0.47	0.43	53.5
5	T1	All MCs	117	3.0	117	3.0	0.476	4.4	LOS A	3.9	27.8	0.43	0.47	0.43	53.9
6	R2	All MCs	61	3.0	61	3.0	0.476	9.9	LOS A	3.9	27.8	0.43	0.47	0.43	52.9
6u	U	All MCs	1	3.0	1	3.0	0.476	12.2	LOS B	3.9	27.8	0.43	0.47	0.43	52.9
Approach			644	3.0	644	3.0	0.476	4.9	LOS A	3.9	27.8	0.43	0.47	0.43	53.5
North: North/South Distributor Rd (N)															
7	L2	All MCs	26	3.0	26	3.0	0.041	6.1	LOS A	0.2	1.6	0.59	0.62	0.59	52.2
8	T1	All MCs	1	3.0	1	3.0	0.041	6.1	LOS A	0.2	1.6	0.59	0.62	0.59	52.6
9	R2	All MCs	9	3.0	9	3.0	0.041	11.7	LOS B	0.2	1.6	0.59	0.62	0.59	51.6
9u	U	All MCs	1	3.0	1	3.0	0.041	14.0	LOS B	0.2	1.6	0.59	0.62	0.59	51.6
Approach			38	3.0	38	3.0	0.041	7.7	LOS A	0.2	1.6	0.59	0.62	0.59	52.1
West: Hursley Rd (W)															
10	L2	All MCs	21	3.0	21	3.0	0.279	5.3	LOS A	1.7	12.3	0.54	0.58	0.54	51.9
11	T1	All MCs	168	3.0	168	3.0	0.279	5.4	LOS A	1.7	12.3	0.54	0.58	0.54	52.3
12	R2	All MCs	112	3.0	112	3.0	0.279	10.9	LOS B	1.7	12.3	0.54	0.58	0.54	51.3
12u	U	All MCs	1	3.0	1	3.0	0.279	13.2	LOS B	1.7	12.3	0.54	0.58	0.54	51.3
Approach			302	3.0	302	3.0	0.279	7.4	LOS A	1.7	12.3	0.54	0.58	0.54	51.9
All Vehicles			1333	3.0	1333	3.0	0.476	6.6	LOS A	3.9	27.8	0.46	0.53	0.46	52.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.