

IRR - ATTACHMENT B

AMENDED TRAFFIC IMPACT ASSESSMENT



26 June 2023

RTeref: 22301

Chief Executive Officer
City of Gold Coast
C / - Gassman Development Perspectives

Dear Sir / Madam,

**RESPONSE TO COUNCIL'S INFORMATION REQUEST
PROPOSED WELLBEING PRECINCT AND INDUSTRIAL LOTS (VANTAGE STAGE 3)
LOT 301, 302, 303 AND 401, VANTAGE ESTATE, YATALA**

Reference is made to the project at the above address and Council's Information Request (COM/2023/82) dated 1 June 2023. We have been engaged to provide a response to Item3 of the request in relation to external road upgrades.

Our responses is provided below, as follows:

Items:

3. External Road Upgrades

This is the third and final stage of the proposed Vantage industrial development. Condition 10 of the overarching preliminary approval (MIN/2023/64) requires various external road upgrades. Some of which are yet to be undertaken. Specifically, the upgrade of Christensen Road and Christensen Road South, the intersection of Christensen Road and the Eastern Service Road as well as the re-prioritisation of the Christensen Road/Christensen Road South intersection. The applicant is therefore requested to submit fully dimensioned functional road layout plans supported by a Traffic Impact Assessment (TIA) demonstrating how condition 10 will be satisfied. If recommended for approval, officers will impose conditions requiring these works be undertaken at no cost to Council prior to the sealing of Stage 3 Vantage subdivision plans.

Response:

The layout of the proposed upgrade of the Christensen Road / Christensen Road South intersection is shown as Attachment A. As shown, the proposal is for the primary movement of the intersection to be reprioritized with the western approach of Christensen Road and Christensen Road South forming the major movement, and the eastern approach of Christensen Road functioning as the minor approach.

The proposed upgrade of the Christensen Road / Eastern Service Road intersection is shown as Attachment B. As shown, it is considered that the intersection will need to be signalised, with minor widening required on each corner of the existing intersection to facilitate the necessary hardware and cyclist facilities on each approach. It is noted that the Eastern Service Road has been maintained as the priority route given that it forms part of the service road network for the Pacific Motorway.



A swept path analysis of the modified intersection arrangements has been prepared in accordance with AS2890.2:2018, adopting an Articulated Vehicle as the design service truck for the arrangements. As shown as Attachments C and D, such can satisfactorily negotiate the proposed treatments whilst maintaining appropriate clearance to obstructions at all time.

A capacity analysis of the Christensen Road / Christensen Road South intersection and the Christensen Road / Eastern Service Road intersection has been prepared using SIDRA software to demonstrate that such will operate within acceptable criteria under modified arrangements. Detailed movement summaries of the SIDRA assessment are provided as Attachments E and F, with a diagram of the design future traffic volumes provided as Attachment G.

Based on the above, it is considered that the modified design of the Christensen Road / Christensen Road South intersection and the Christensen Road / Eastern Service Road intersection will be able to accommodate movements by the design vehicle, with each operating within acceptable criteria under future design traffic conditions of the local road network.

Please contact the undersigned regarding any queries in relation to this matter.

Yours faithfully

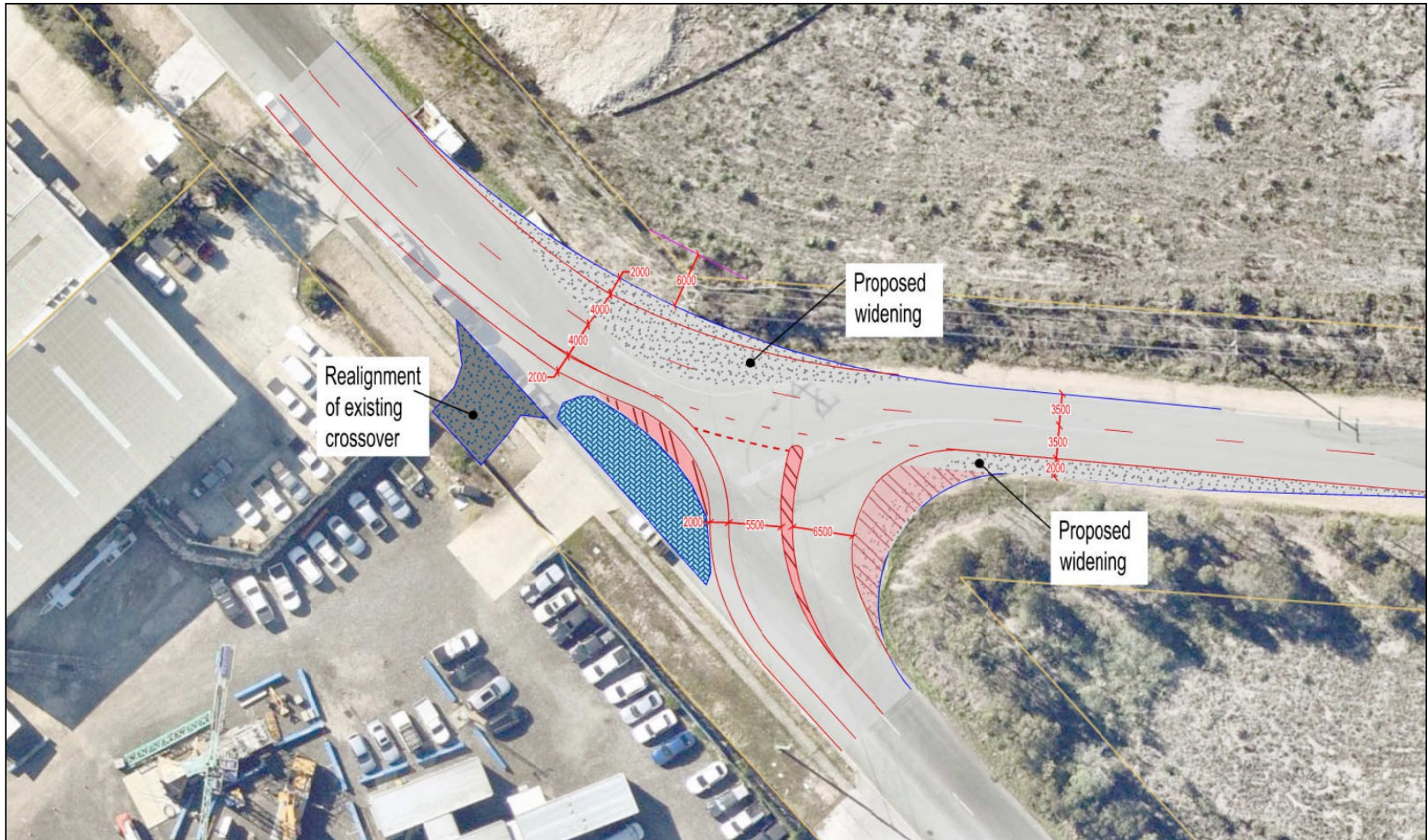


LUKE RYTENSKILD

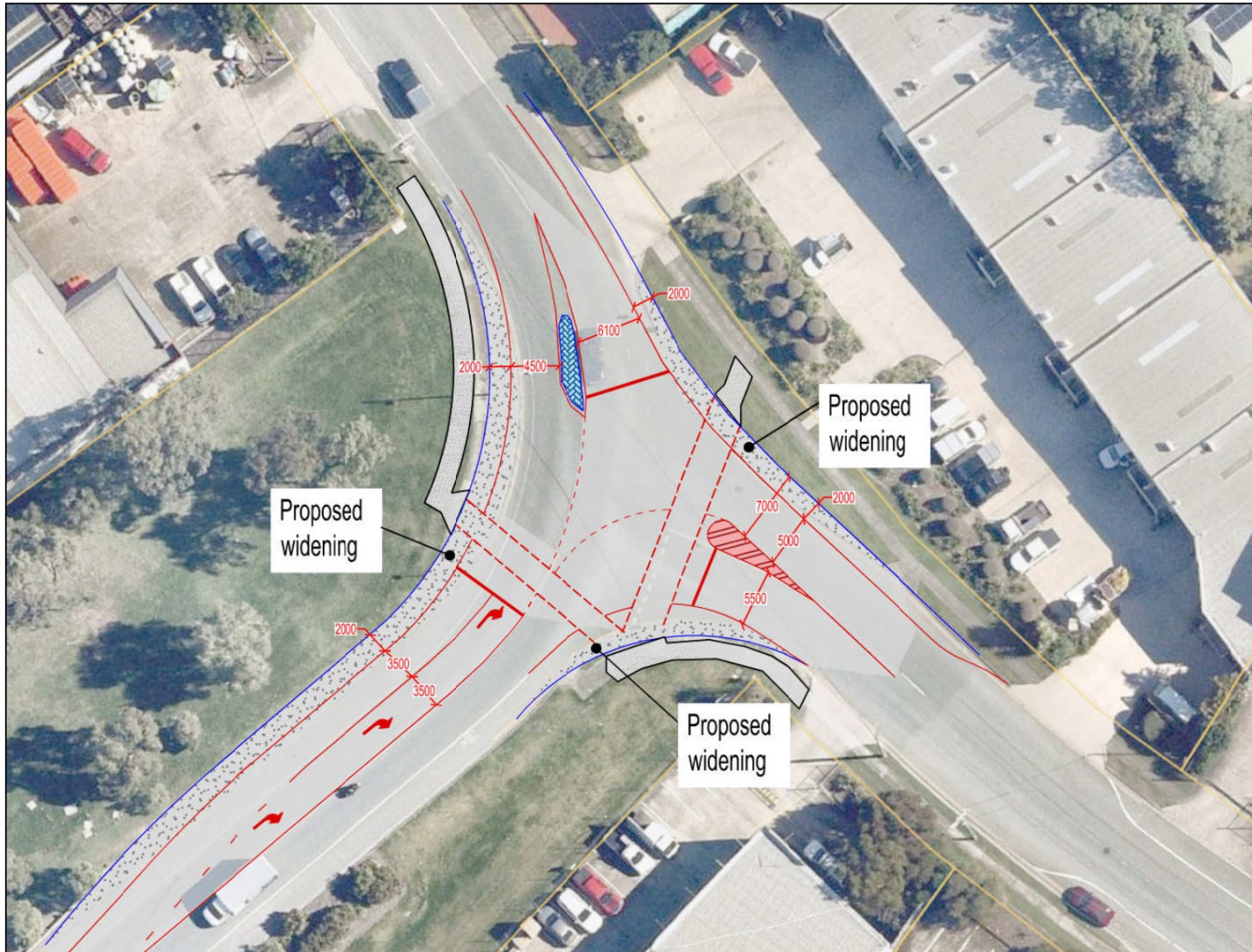
DIRECTOR, B.ENG (Civil), RPEQ 6293

ATTACHMENT A –	CHRISTENSEN ROAD / CHRISTENSEN ROAD SOUTH INTERSECTION
ATTACHMENT B –	SWEPT PATHS AT THE CHRISTENSEN ROAD / EASTERN SERVICE ROAD INTERSECTION
ATTACHMENT C –	SWEPT PATHS AT THE CHRISTENSEN ROAD / CHRISTENSEN ROAD SOUTH INTERSECTION
ATTACHMENT D –	CHRISTENSEN ROAD / EASTERN SERVICE ROAD INTERSECTION
ATTACHMENT E –	SIDRA MODELLING OF THE CHRISTENSEN ROAD / CHRISTENSEN ROAD SOUTH INTERSECTION
ATTACHMENT F –	SIDRA MODELLING OF THE CHRISTENSEN ROAD / EASTERN SERVICE ROAD INTERSECTION
ATTACHMENT G –	TRAFFIC SCHEMATIC DIAGRAMS

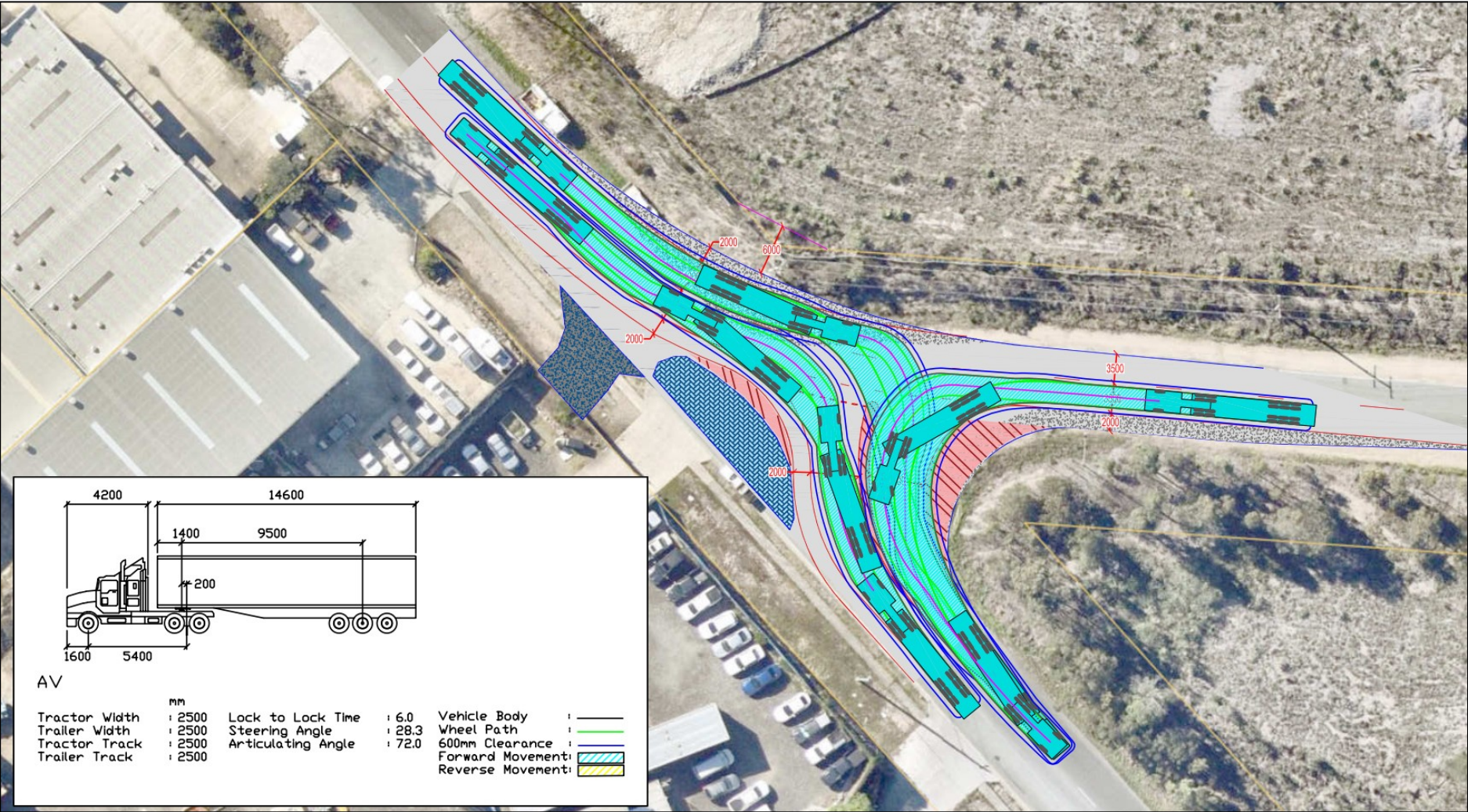
ATTACHMENT A – CHRISTENSEN ROAD / CHRISTENSEN ROAD SOUTH INTERSECTION

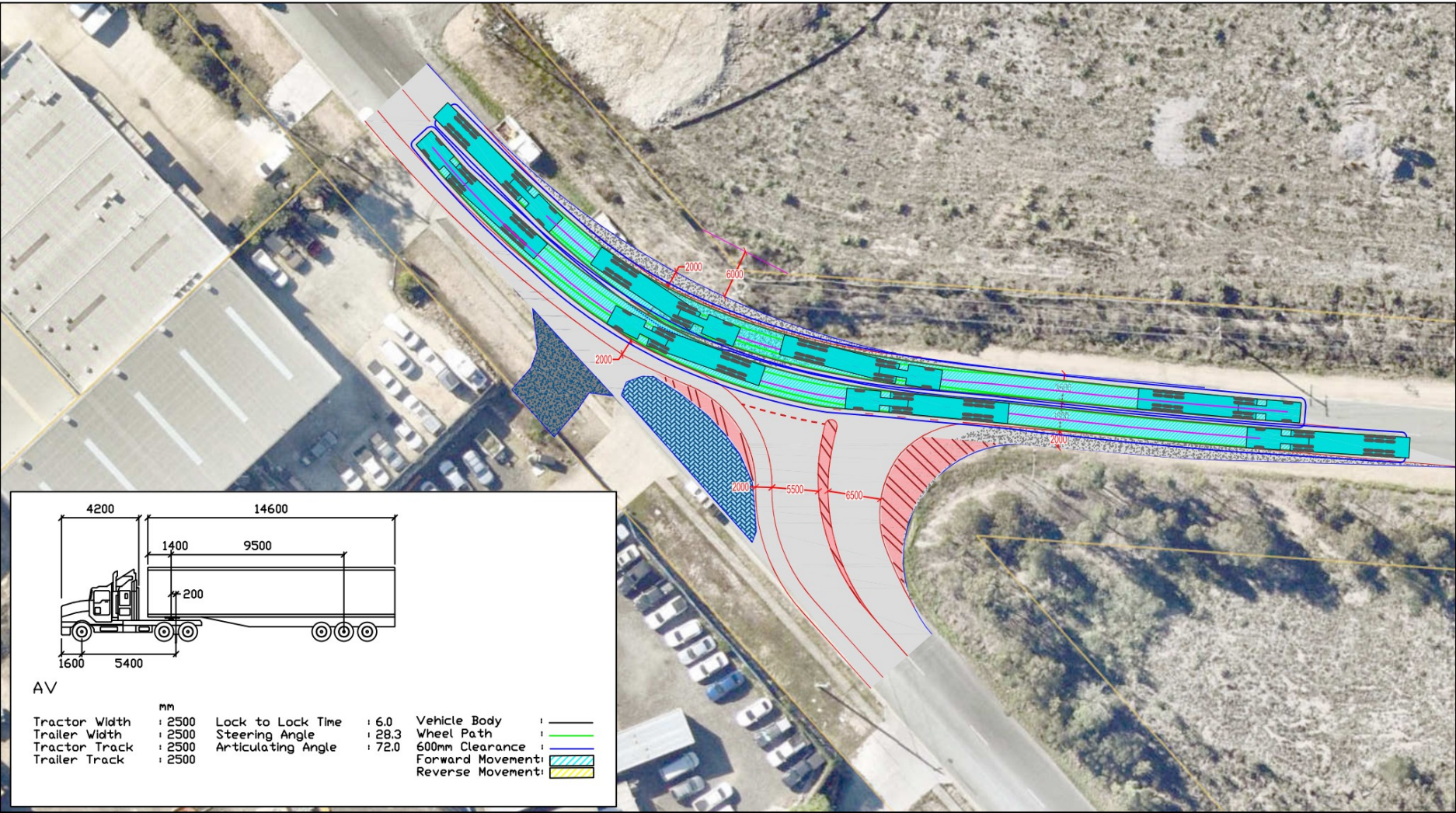


ATTACHMENT B – CHRISTENSEN ROAD / EASTERN SERVICE ROAD INTERSECTION

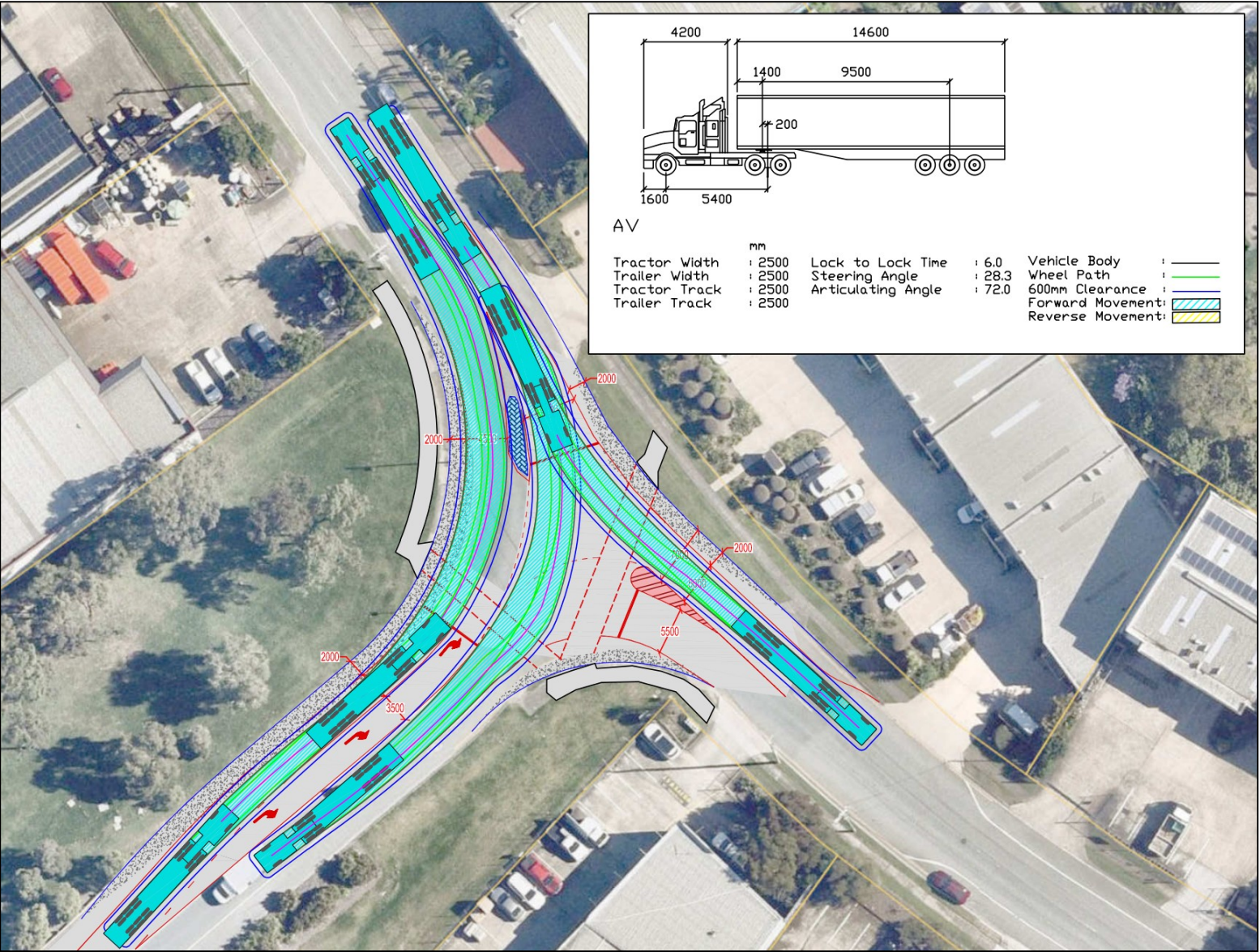


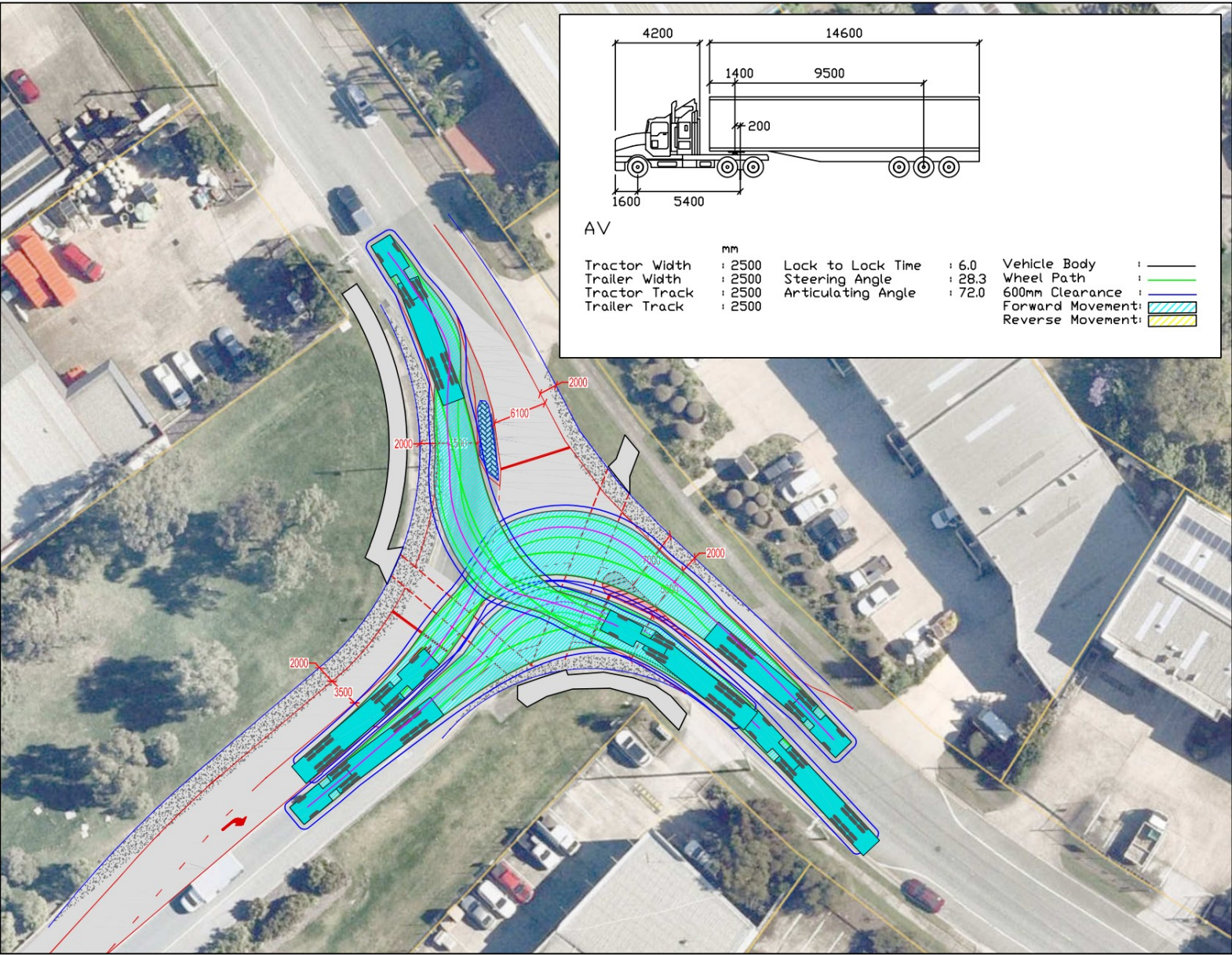
ATTACHMENT C – SWEEPED PATHS AT THE CHRISTENSEN ROAD / CHRISTENSEN ROAD SOUTH INTERSECTION





ATTACHMENT D – SWEPT PATHS AT THE CHRISTENSEN ROAD / EASTERN SERVICE ROAD INTERSECTION





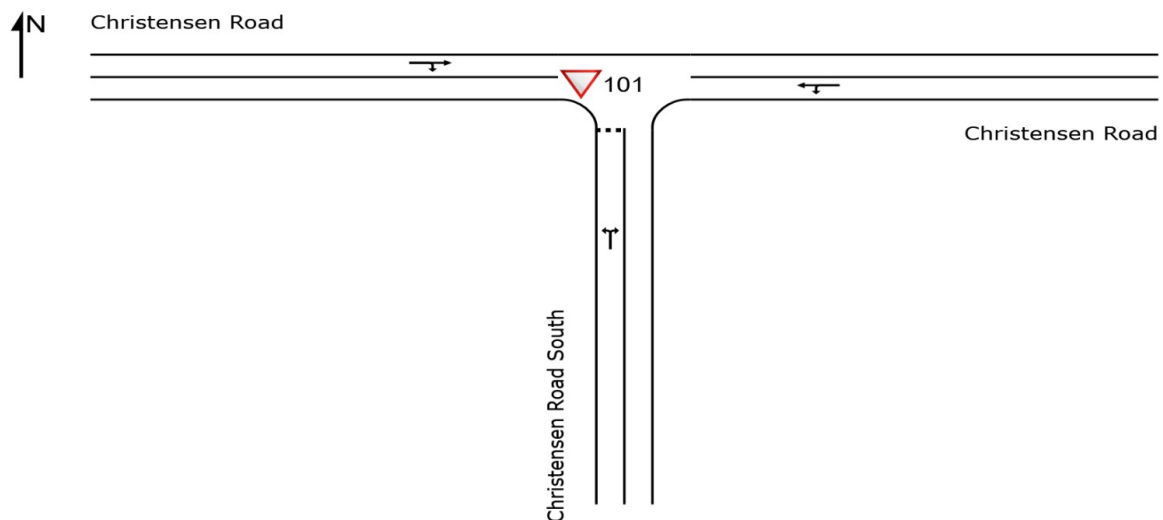
ATTACHMENT E– SIDRA MODELLING OF THE CHRISTENSEN ROAD / CHRISTENSEN ROAD SOUTH INTERSECTION

SITE LAYOUT

▽ Site: 101 [Design Peak Hour AM/PM (Site Folder: Christensen Rd / Christensen Rd South)]

Christensen Road / Christensen Road South
Site Category: (None)
Give-Way (Two-Way)

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



MOVEMENT SUMMARY

▽ Site: 101 [Design Peak Hour AM/PM (Site Folder: Christensen Rd / Christensen Rd South)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Christensen Road / Christensen Road South
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]	m			km/h
South: Christensen Road South															
1	L2	All MCs	26	2.0	26	2.0	0.062	6.7	LOS A	0.2	1.5	0.45	0.67	0.45	51.2
3	R2	All MCs	26	2.0	26	2.0	0.062	8.9	LOS A	0.2	1.5	0.45	0.67	0.45	50.9
Approach			53	2.0	53	2.0	0.062	7.8	LOS A	0.2	1.5	0.45	0.67	0.45	51.0
East: Christensen Road															
4	L2	All MCs	26	2.0	26	2.0	0.178	5.6	LOS A	0.0	0.0	0.00	0.05	0.00	56.9
5	T1	All MCs	316	2.0	316	2.0	0.178	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.5
Approach			342	2.0	342	2.0	0.178	0.5	NA	0.0	0.0	0.00	0.05	0.00	59.3
West: Christensen Road															
11	T1	All MCs	316	2.0	316	2.0	0.185	0.0	LOS A	0.2	1.7	0.09	0.10	0.09	59.2
12	R2	All MCs	26	2.0	26	2.0	0.185	9.0	LOS A	0.2	1.7	0.09	0.10	0.09	56.4
Approach			342	2.0	342	2.0	0.185	0.7	NA	0.2	1.7	0.09	0.10	0.09	59.0
All Vehicles			737	2.0	737	2.0	0.185	1.1	NA	0.2	1.7	0.07	0.12	0.07	58.5

ATTACHMENT F – SIDRA MODELLING OF THE CHRISTENSEN ROAD / EASTERN SERVICE ROAD INTERSECTION

SITE LAYOUT

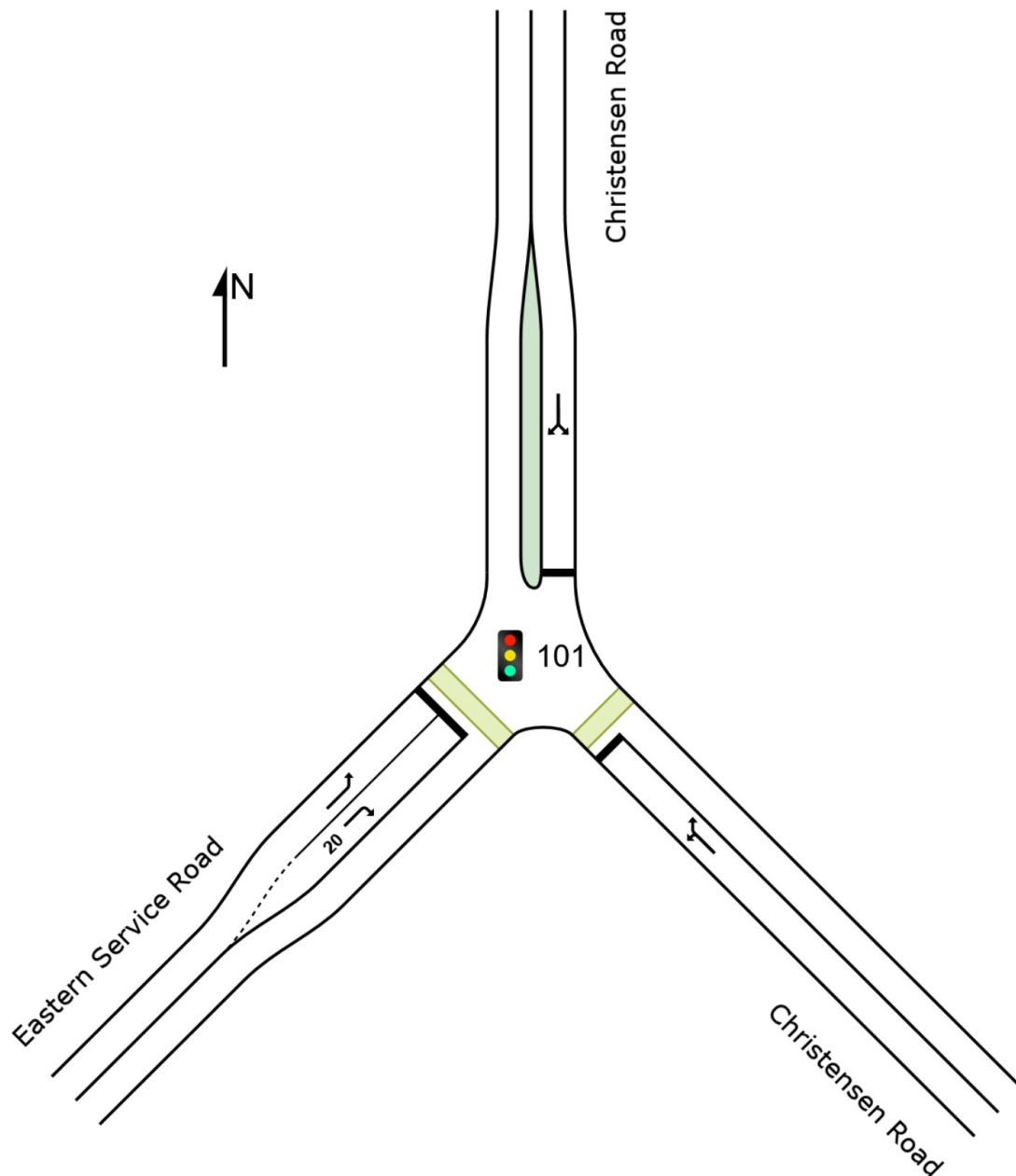
 **Site: 101 [Design Peak Hour AM (Site Folder: General)]**

Christensen Road / Eastern Service Road

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



MOVEMENT SUMMARY

Site: 101 [Design Peak Hour AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Christensen Road / Eastern Service Road

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Practical Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist] m				km/h
SouthEast: Christensen Road															
21	L2	All MCs	42	2.0	42	2.0	0.831	49.9	LOS D	14.0	99.8	1.00	0.95	1.22	32.3
23a	R1	All MCs	253	2.0	253	2.0	* 0.831	49.2	LOS D	14.0	99.8	1.00	0.95	1.22	32.3
Approach			295	2.0	295	2.0	0.831	49.3	LOS D	14.0	99.8	1.00	0.95	1.22	32.3
North: Christensen Road															
7a	L1	All MCs	547	2.0	547	2.0	0.867	31.2	LOS C	38.4	273.7	0.93	0.94	1.04	38.4
9a	R1	All MCs	342	2.0	342	2.0	* 0.867	30.6	LOS C	38.4	273.7	0.93	0.94	1.04	38.6
Approach			889	2.0	889	2.0	0.867	31.0	LOS C	38.4	273.7	0.93	0.94	1.04	38.5
SouthWest: Eastern Service Road															
30a	L1	All MCs	158	2.0	158	2.0	0.124	10.5	LOS B	2.4	17.0	0.37	0.67	0.37	49.1
32	R2	All MCs	26	2.0	26	2.0	* 0.216	51.2	LOS D	1.2	8.3	0.98	0.71	0.98	31.7
Approach			184	2.0	184	2.0	0.216	16.3	LOS B	2.4	17.0	0.46	0.68	0.46	45.5
All Vehicles			1368	2.0	1368	2.0	0.867	32.9	LOS C	38.4	273.7	0.88	0.90	1.00	37.7

MOVEMENT SUMMARY

Site: 101 [Design Peak Hour PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Christensen Road / Eastern Service Road

Site Category: (None)

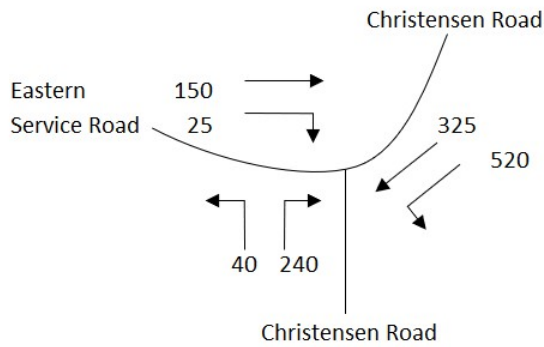
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Practical Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
SouthEast: Christensen Road															
21	L2	All MCs	26	2.0	26	2.0	0.871	34.3	LOS C	19.7	140.0	1.00	1.00	1.29	37.5
23a	R1	All MCs	547	2.0	547	2.0	* 0.871	33.5	LOS C	19.7	140.0	1.00	1.00	1.29	37.6
Approach			574	2.0	574	2.0	0.871	33.6	LOS C	19.7	140.0	1.00	1.00	1.29	37.6
North: Christensen Road															
7a	L1	All MCs	253	2.0	253	2.0	0.871	37.6	LOS D	14.3	101.7	1.00	1.01	1.36	36.0
9a	R1	All MCs	158	2.0	158	2.0	* 0.871	37.0	LOS D	14.3	101.7	1.00	1.01	1.36	36.2
Approach			411	2.0	411	2.0	0.871	37.4	LOS D	14.3	101.7	1.00	1.01	1.36	36.1
SouthWest: Eastern Service Road															
30a	L1	All MCs	342	2.0	342	2.0	0.417	20.3	LOS C	6.9	48.9	0.72	0.78	0.72	45.0
32	R2	All MCs	42	2.0	42	2.0	* 0.230	37.2	LOS D	1.2	8.7	0.96	0.73	0.96	37.1
Approach			384	2.0	384	2.0	0.417	22.1	LOS C	6.9	48.9	0.75	0.77	0.75	44.0
All Vehicles			1368	2.0	1368	2.0	0.871	31.5	LOS C	19.7	140.0	0.93	0.94	1.16	38.7

ATTACHMENT G – TRAFFIC SCHEMATIC DIAGRAMS

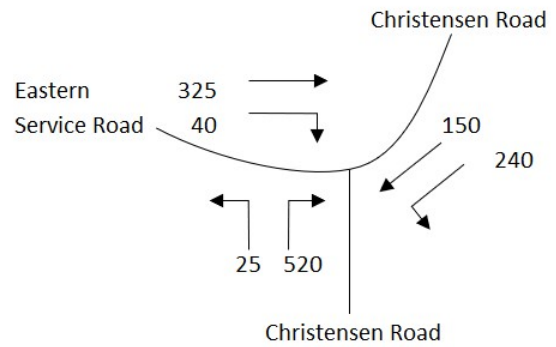
AM PEAK HOUR TRAFFIC VOLUMES

Design Peak Traffic



PM PEAK HOUR TRAFFIC VOLUMES

Design Peak Traffic



AM/PM PEAK HOUR TRAFFIC VOLUMES

Design Peak Traffic

