Before the Selwyn District Council

under: the Resource Management Act 1991

in the matter of: Proposed Private Plan Change 69 to the Operative District Plan: Lincoln South

and: **Rolleston Industrial Developments Limited**
Applicant

Statement of Evidence of David Smith (Traffic Modelling)

Dated: 4 November 2021

Reference: JM Appleyard (jo.appleyard@chapmantripp.com)
LMN Forrester (lucy.forrester@chapmantripp.com)

chapmantripp.com
T +64 3 353 4130
F +64 3 365 4587

PO Box 2510
Christchurch 8140
New Zealand

Auckland
Wellington
Christchurch

chapman tripp

STATEMENT OF EVIDENCE OF DAVID SMITH

INTRODUCTION

1 My full name is David John Robert Smith.

2 I hold a Bachelor of Technology (with Honours) in Industrial Operations Research and Master of Philosophy in Operations Research from Massey University. I am a Chartered Member of the Institute of Logistics and Transport (CMILT), a member of Engineering New Zealand (MEngNZ) and of the NZ Modelling User Group sub-group of ENZ. I have been appointed to the NZ Transport Agency Independent Professional Advisors panel for Transportation Modelling. I am also certified as a Hearings Commissioner having completed the Making Good Decisions course in 2019.

3 I hold the position of Technical Director of Transportation Planning at Abley. I have been in this position since 2018 and have been at Abley for nine years. I lead a range of development and transportation planning projects for public and private sector clients.

4 My previous work experience includes 21 years of transportation planning and engineering experience. I have managed and led numerous projects related to transportation planning, transportation research and Resource Management Act (RMA) related matters for public and private sector clients. As an expert witness I have recently been engaged by Foodstuffs South Island Limited, Auckland Council, Selwyn District Council, Queenstown-Lakes District Council, Ports of Auckland and Fonterra.

5 I am familiar with the plan change application by Rolleston Industrial Developments Limited (*the Applicant*) to rezone approximately 190 hectares of land on Springs Road, Lincoln to enable approximately 2,000 residential sites and three small commercial zones.

CODE OF CONDUCT

6 Although this is not an Environment Court hearing, I note that in preparing my evidence I have reviewed the Code of Conduct for Expert Witnesses contained in Part 7 of the Environment Court Practice Note 2014. I have complied with it in preparing my evidence. I confirm that the issues addressed in this statement of evidence are within my area of expertise, except where relying on the opinion or evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

SCOPE OF EVIDENCE

7 My evidence will deal with the following:

7.1 Scope of my involvement;

7.2 Response to Transportation Hearing Report prepared by Mr Collins; and

7.3 Updated traffic modelling.

8 In preparing this statement of evidence I have read the:

8.1 Integrated Transportation Assessment report prepared by Novo Group October 2020; and

8.2 Transportation Hearing report prepared by Mr Collins of Flow Transportation Specialists October 2021.

SCOPE OF MY INVOLVEMENT

9 Abley were commissioned by the Applicant to undertake traffic modelling of the Plan Change using the Lincoln Paramics microsimulation model (*the model*). I scoped the modelling specifications and was the technical lead for the modelling. I further note that the scope of my involvement is limited to the Paramics modelling and **Mr Fuller** undertook the Sidra Intersection modelling presented elsewhere in the ITA.

10 The model draws demand information down from the Christchurch Transportation Model (CTM) as an input and converts land use activity into vehicle demands and flows on the Lincoln transport network. The model was developed in 2014 for Council under my direction by the Abley team and has subsequently been used to support transportation planning across the township.

11 The modelling outputs have been appended to Mr Fuller's Integrated Transportation Assessment (ITA) as Attachment 1 to the RFI response[1]. The interpretation of the modelling outputs was undertaken by Mr Fuller and is reported in his ITA.

12 I have reviewed the Transportation Hearing report prepared by **Mr Collins** and appended to the Section 42A report. I respond to matters raised by Mr Collins in relation to transportation modelling in this brief of evidence.

[1] labelled Appendix D2 Addendum Transport Assessment in the lodged ITA document

RESPONSE TO SECTION 42A REPORT

13 Mr Collins presents a review of the traffic modelling and traffic effects in sections 4 and 5 of his report, and I note the scope of his review is limited to the models which do not include the Lincoln Southern Bypass.

14 Mr Collins notes in section 4.1 that the Springs Road/Farm Road intersection currently only allows for pedestrian access but has been represented as a vehicle access in the model. This is correct and is also consistent with all other modelling undertaken using the Lincoln model. Farm Road is essentially a proxy for the adjacent car park immediately to the south of the vehicle access point and the parking demands associated with this car park are fed onto Springs Road using Farm Road. I note the Farm Road and car park access are located approximately 110m apart and consider that the impact of loading the demand closer to the Springs / Ellesmere Junction / Gerald intersection will have no material impact on the modelling results.

15 Section 5.1 raises two concerns relating to trip generation within the modelling. Mr Collins is correct that the model assumes 0.7 vehicle trips per household in peak hour. This trip rate was specified by Mr Fuller and I defer to him in that regard.

16 Mr Collins also helpfully points out that the evening peak generation of 1200 (which is equivalent to 0.6 trips per household in peak hour) vehicles in peak hour across PC69 is lower than the morning peak generation of 1400 (correctly reflecting the calibrated 0.7 trips per household in peak hour). I have checked the underlying demand calculations in the evening peak model and note that this is an error which has been corrected in subsequent modelling which I present later in this statement of evidence.

17 The distribution of PC69 traffic in the model is observed by Mr Collins as having a different distribution to other residential development areas in the vicinity of Gerald Street. The quantum of traffic from greenfield residential areas in the model travelling to the north of Lincoln in the morning peak model is higher than in the older residential areas. This reflects the higher level of residential activity proportionate to the total number of employment opportunities within the township as Lincoln develops, and was calibrated from the CTM when the model was developed.

18 This approach taken for the distribution of PC69 traffic is consistent approach with all other developing and future greenfield areas including Te Whāriki and Verdeco Park. Given a higher rate has been assumed, I consider that the modelling may be conservatively high in terms of potential impact on the Springs Road corridor.

19 In section 5.2 Mr Collins identifies several aspects of the modelling that may be contributing to under reporting of delays at the Springs / Ellesmere Junction / Gerald intersection are as follows:

19.1 Journey time paths are too short on Springs Road approach – There is a process within the model where the geographic extent of queuing is manually coded for each intersection approach and the delay is calculated from this point to the intersection exit. I have checked the model and extended the length of queuing and can confirm that an additional 5 seconds of queueing may be experienced at peak times.

19.2 Journey time paths are too short on Ellesmere Junction Road approach – I have followed the same process as outlined in 19.1 and can confirm that an additional 5 seconds of queueing may be experienced at peak times on this approach.

19.3 Pedestrian crossing phases not included – There is no provision for pedestrian crossing movements included within the RFI response modelling. I have included provision for pedestrian crossings across the Gerald Street and Springs Road approaches in the updated modelling presented in this evidence.

19.4 Trip generation and distribution assumptions – refer to paragraphs 15-18.

20 Mr Collins suggests roundabouts may be appropriate treatments at the two proposed accesses from PC69 to Springs Road. The northernmost primary access has been modelled as signals, and I recommend this intersection layout be retained to meet right turn demands onto Springs Road and to provide for fully protected pedestrian crossing movements at the intersection. I agree with Mr Collins that the southern access would be better suited to a roundabout configuration as the traffic volumes are more evenly distributed among the intersection approaches and the roundabout would have the desired effect of reducing vehicle speeds as they enter the urban environment. The modelling presented later in this report has been updated to include the roundabout at the southern access.

21 In section 5.9 of his report, Mr Collins raises concerns about potential links to Verdeco Park, Te Whāriki and Liffey Springs Road. I have sought advice from Mr Fuller and the Rolleston Industrial Developments Limited team and have been instructed to revisit the modelling to include the following changes to the PC69 structure plan from my prior modelling:

21.1 Realign connection between PC69 and Verdeco Park further to the east;

21.2 Remove connection between PC69 and Te Whāriki subdivision but also run a second model with a realigned link based on a potentially available future connection; and

21.3 Remove connection between PC69 and Liffey Springs Drive.

UPDATED TRAFFIC MODELLING

22 I have updated the traffic modelling of PC69 based on Mr Collins' review of the Plan Change. The updated modelling is presented in the attached technical note and includes the following changes:

22.1 Correction to evening peak demands to calibrate to 0.7 trips in peak hour per dwelling;

22.2 Lengthened delay paths coded into the model at Springs / Ellesmere Junction / Gerald intersection to include full extent of delays in peak hour;

22.3 Inclusion of pedestrian phases at Springs / Ellesmere Junction / Gerald intersection;

22.4 Addition of roundabout at southern access from PC69 on Springs Road; and

22.5 Removal and realignment of PC69 connections to adjacent residential areas.

23 As with the modelling presented in Attachment 1 of the RFI response, I leave the interpretation of the modelling outputs to Mr Fuller.

CONCLUSIONS

24 I have undertaken modelling of PC69 traffic using the Lincoln Paramics microsimulation model. Following Mr Collins' review of the modelling presented in his Transport Hearing Report, I have revisited several assumptions and updated the modelling accordingly for Mr Fuller's consideration. This is appended to this report as **Appendix 1**.

25 I consider that the modelling has been undertaken in line with best practice and appropriately demonstrates the effects of the Plan Change on the Lincoln transport network.

Dated: 4 November 2021

Dave Smith

APPENDIX 1

Transport + Location Intelligence

ATTACHMENT ONE – Technical Note

South Lincoln Private Plan Change Modelling

Prepared for:	Rolleston Industrial Developments Ltd
Job Number:	RIDL-J001
Revision:	Revised draft
Issue Date:	3 November 2021
Prepared by:	Chris Blackmore, Senior Transportation Planner
Reviewed by:	Dave Smith, Technical Director

1. Development Overview

Abley were commissioned by Rolleston Industrial Developments Ltd (RIDL) to model a residential development, totalling around 2,000 households, in South Lincoln. Modelling was carried out within the Lincoln s-Paramics microsimulation model. This model has been developed by Abley for Selwyn District Council (SDC), and permission has been granted by SDC to use the model for this work.

Diagrams of the proposed development area were provided by RIDL for inclusion in the Lincoln model, shown in **Figure 1.1**. This network has been updated as advised by RIDL, and in response to comments from the Section 42a report, as described in Section 2.2.

Trip generation from the residential development was provided by RIDL for use in the modelling, morning and evening peak generation for inbound and outbound trips is shown in **Table 1.1**. Other trip generation and distribution, including expanding the peak hour generation to a two-hour level and then distributing the generated volumes onto the network have been informed by similar residential developments within the existing Lincoln model. Trip generation and distribution for the small 450sqm GFA commercial / retail development has been based on the existing commercial and retail activity within the model. No additional pass-by reductions have been made at this time.

The model runs a two-hour morning period from 07:00 to 09:00 and a two-hour evening period from 16:00 to 18:00. From these results are reported for a peak hour in the morning from 08:00 to 09:00 and in the evening from 17:00 to 18:00.

Paramics microsimulation is a stochastic modelling package, which means there is some inherent variability between modelling runs. To account for this the results presented are the averages of five model runs. Generally, outlier results are excluded from the analysis however this has not been required for any of the results reported here.

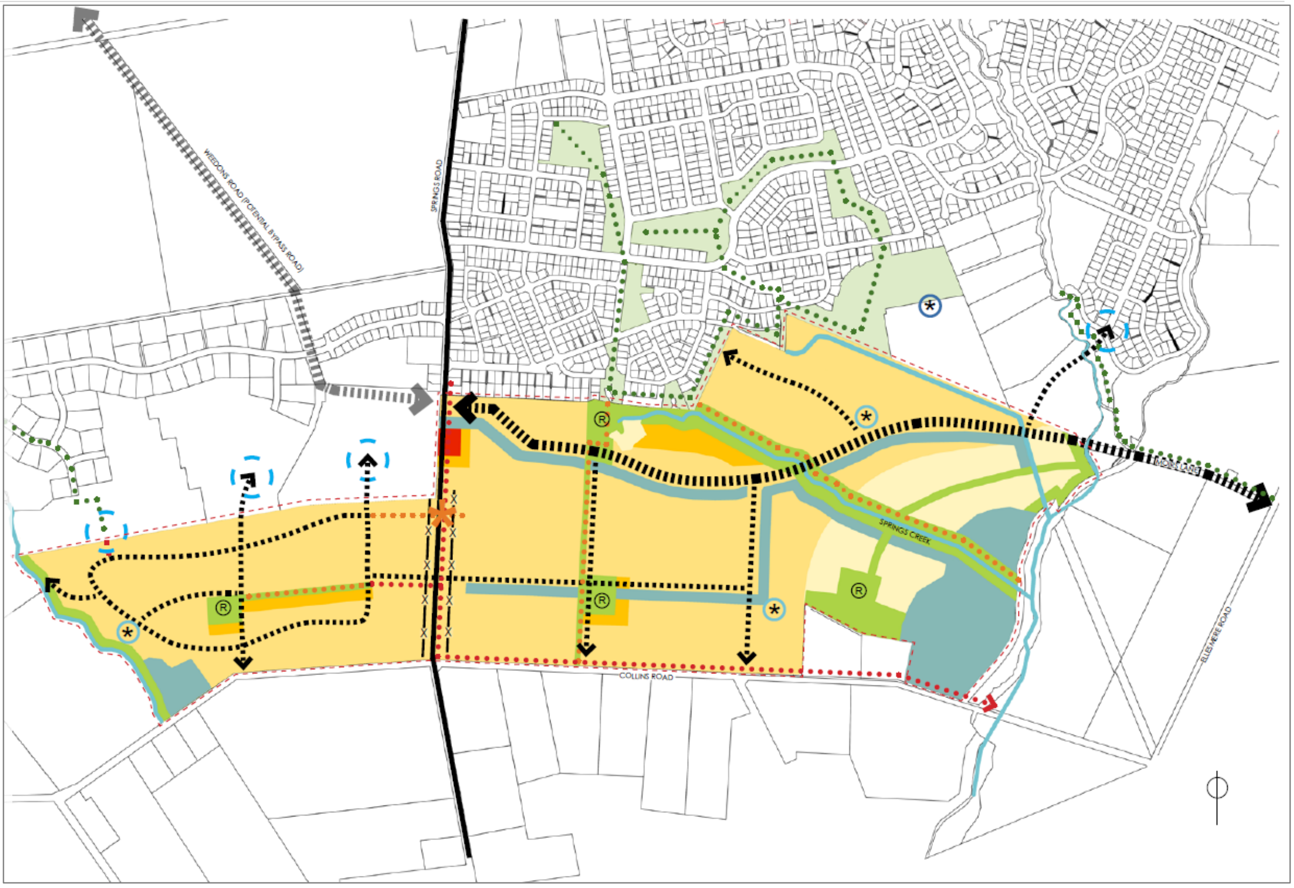

Figure 1.1 Overview of South Lincoln Development, supplied by RIDL

Table 1.1 Trip Generation per Developed Household, supplied by RIDL

Period	Arrivals	Departures	Total
Morning Peak Hour	0.175	0.525	0.7
Evening Peak Hour	0.441	0.259	0.7
Daily	3.5	3.5	7.0

2. Modelled Network

2.1 Base Network

The base network utilised for this analysis corresponds to the 2031 future model developed for SDC. This includes development of all current ODP areas, including Verdeco Park and residential development south of Southfield Dr, which are both currently under construction. This model also includes infrastructure included by SDC as part of the draft 2021-2024 Long Term Plan in line with other modelling conducted for SDC in Lincoln.

Small changes to corridor operation have been included to ensure vehicle behaviour along key links, especially Springs Rd, is realistic and responses to vehicle congestion are appropriate. These changes have been maintained across all model networks to maintain a fair comparison.

A significant improvement to routing choice has been made in the northern exits to and from Christchurch. Vehicles travelling along the Springs Rd and Shands Rd corridors are now able to react to delay on each corridor and can make a choice between the two routes. This is improved from previous modelling where the corridor choice was deterministic and fixed. As with the minor changes, this has been kept consistent across the model networks.

The base network used is shown in **Figure 2.1**.

Figure 2.1 Base Model Network

2.2 Inclusion of South Lincoln Development

Road connections were included in line with the plans shown in **Figure 1.1**. Infrastructure included at intersections was agreed with RIDL and represents intersection forms which would typically be associated with Connector class roads. The changes to the network are shown in **Figure 2.2**.

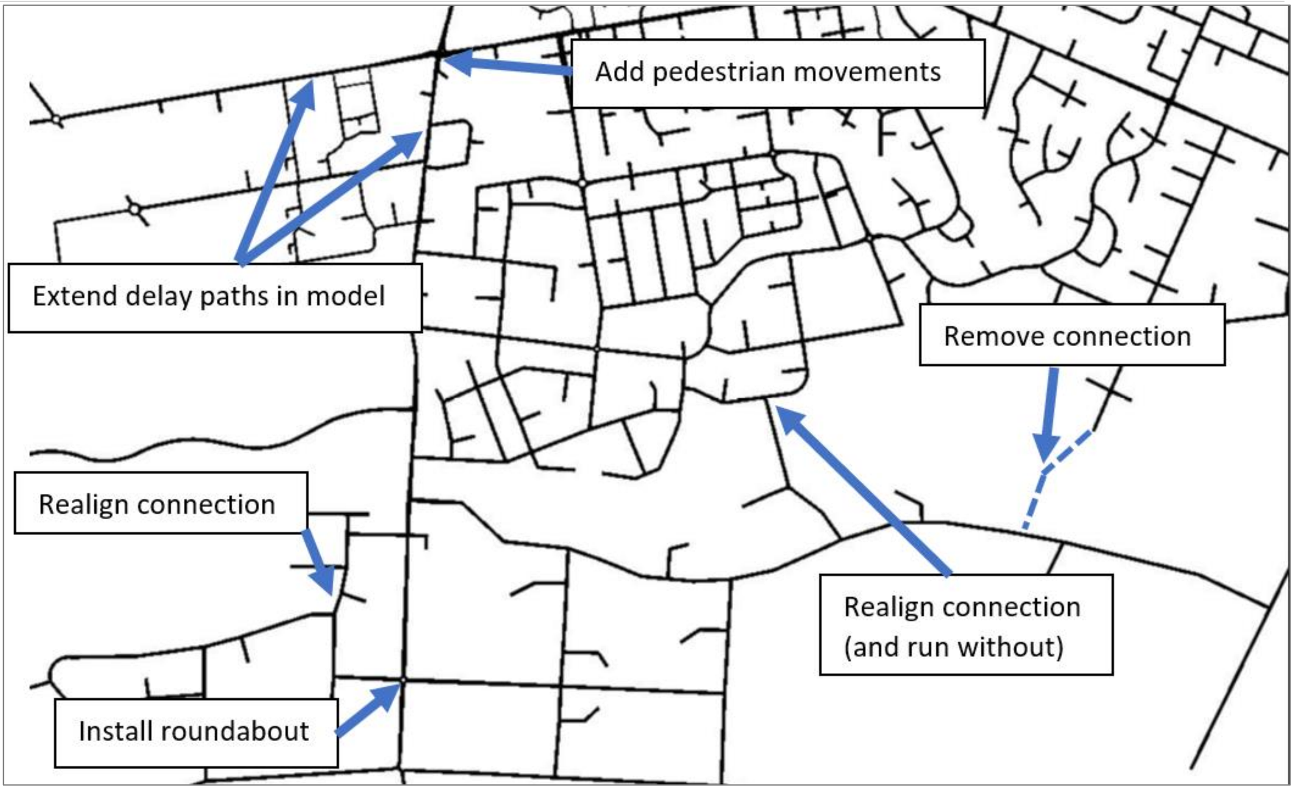

Figure 2.2 Network changes resulting from structure plan updates

2.3 Inclusion of Central Link Connection

The alignment used for the potential Central Link connection is as per the supplied plans from RIDL. It connects to the southern side of Kaitorete Dr and forms a connection with the unnamed Development Connector road.

The network including the potential Central Link connection is shown in **Figure 2.3**.

The model was run firstly excluding the potential Central Link, then including the potential Central Link. Results for each scenario are presented in Section 4.

Figure 2.3 Network including main ODP Road and potential Central Link

3. Included Modelling Assumptions

The main assumptions relied on in this modelling are listed below. While these would have an impact on results if not included, they are in line with previous modelling undertaken for SDC and provide a consistent basis with which to analyse the impact of the South Lincoln Development.

- Lincoln University activity, especially the main car park, remains located in the south-eastern corner of the University land. While there has been discussion of the formation of a large carpark on the north-western corner of the Springs Rd / Ellesmere Jct intersection there is no publicly available information at this time.
- The University access at Springs Rd / Farm Rd is currently unformed. This is assumed to become a formed access in the future network to allow a second access to the University off Springs Rd. There is no formal announcement from the University to undertake this development, however this assumption is in line with other modelling conducted for SDC.
- The trip distribution for the residential and commercial development is assumed to follow the same patterns as other residential greenfield development vehicle trips, i.e. the residents of the new development access the town centre, supermarket and other destinations at the same rate as residents in similar greenfields developments around Lincoln. This also means that residents of the new development travel to and from Christchurch and Rolleston at the same rate as other residents in similar greenfields developments.

4. Outputs Provided

4.1 Volumes

The 'With Development' model shows that increases in traffic volumes in both peaks are primarily along Springs Rd and Ellesmere Jct / Gerald St, with other collectors also seeing some increase. When the Central Link connection is included around 200 vehicles divert from Springs Rd and Ellesmere Rd to the Central Link, while around 100 vehicles previously using Southfield Dr and Vernon Dr to access the town centre divert to the Central Link. Refer to **Table 4.1**, **Figure 4.1** and **Figure 4.2** for the morning peak results and **Table 4.2**, **Figure 4.3** and **Figure 4.4** for evening peak results.

Table 4.1 Two-Way Volumes on Key Corridors in the Morning Peak (08:00-09:00)

Measurement point	No Development	With Development	With Development and Central Link
Springs N of Verdeco	412	1355	1229
Springs S of Ellesmere Jct / Gerald	814	1509	1454
Springs N of Ellesmere Jct / Gerald	608	1050	1048
Ellesmere Jct W of Uni	935	1130	1144
Weedons N of Ellesmere Jct	573	753	766
Gerald W of Springs	1022	1155	1165
Central Link N of ODP Road	0	0	268
Days N of Collins	0	34	33
Ellesmere S of Edward	213	431	358

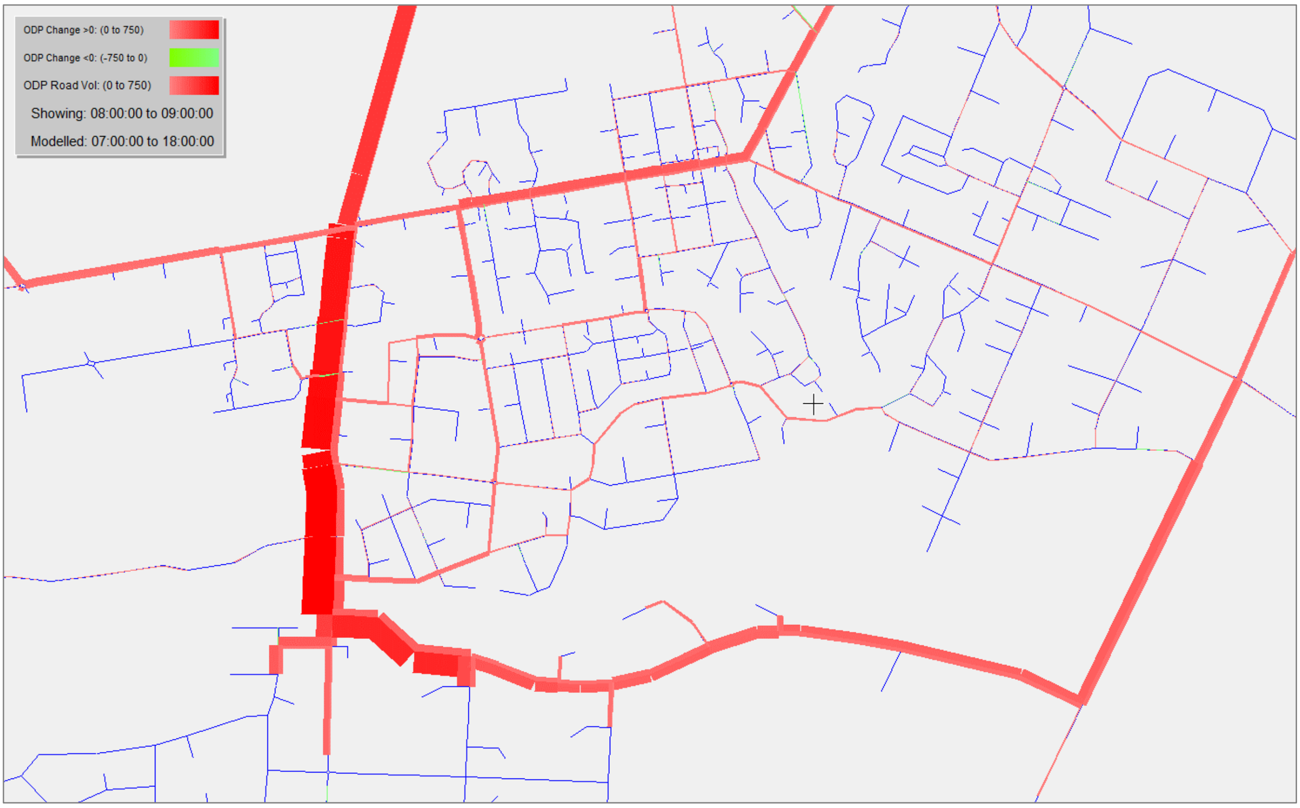

Figure 4.1 Change in Volume between No Development and Development in the Morning Peak (08:00-09:00)

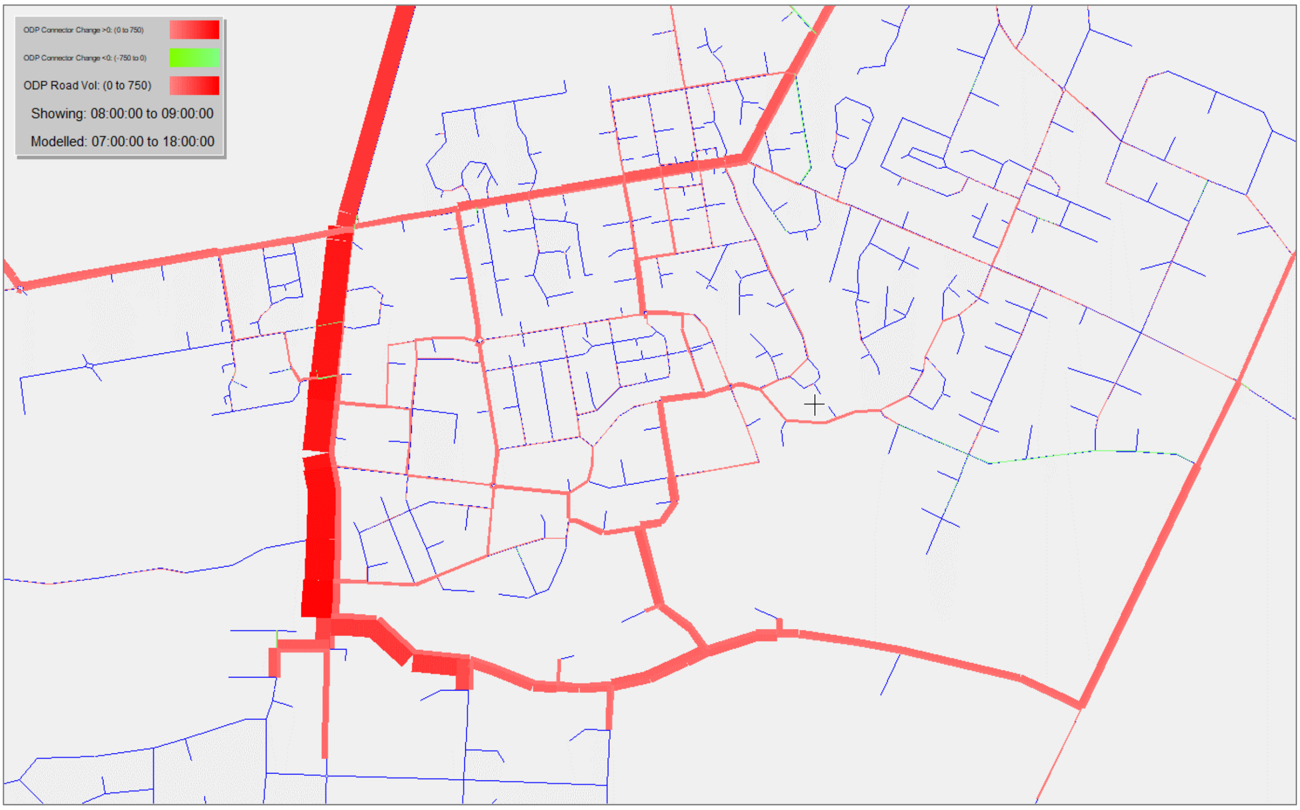

Figure 4.2 Change in Volume between No Development and Development with Central Link in the Morning Peak (08:00-09:00)

Table 4.2 Two-Way Volumes on Key Corridors in the Evening Peak (17:00-18:00)

Measurement point	No Development	With Development	With Development and Central Link
Springs N of Verdeco	538	1048	965
Springs S of Ellesmere Jct / Gerald	914	1264	1209
Springs N of Ellesmere Jct / Gerald	512	617	605
Ellesmere Jct W of Uni	816	922	915
Weedons N of Ellesmere Jct	447	525	526
Gerald W of Springs	1126	1241	1227
Central Link N of ODP Road	0	0	299
Days N of Collins	0	31	28
Ellesmere S of Edward	160	450	378

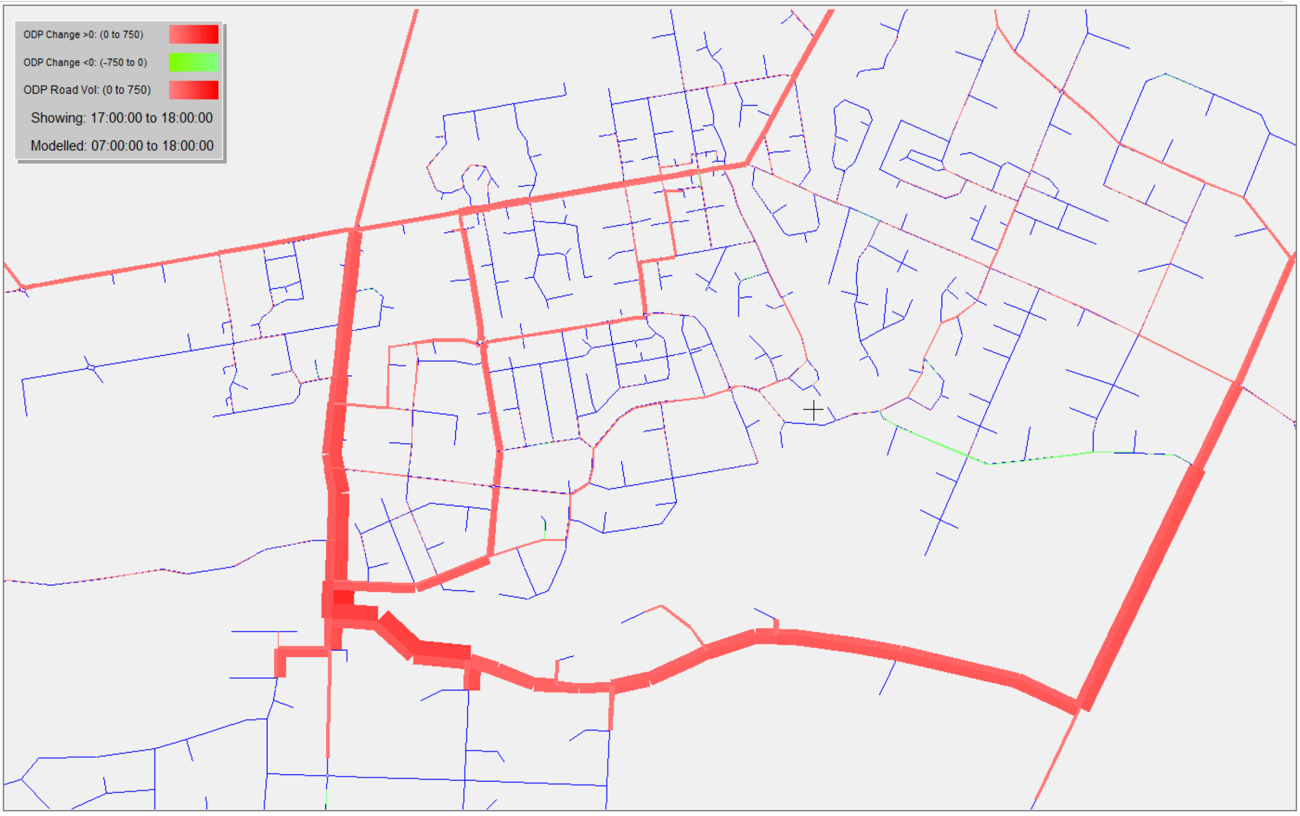

Figure 4.3 Change in Volume between No Development and Development in the Evening Peak (17:00-18:00)

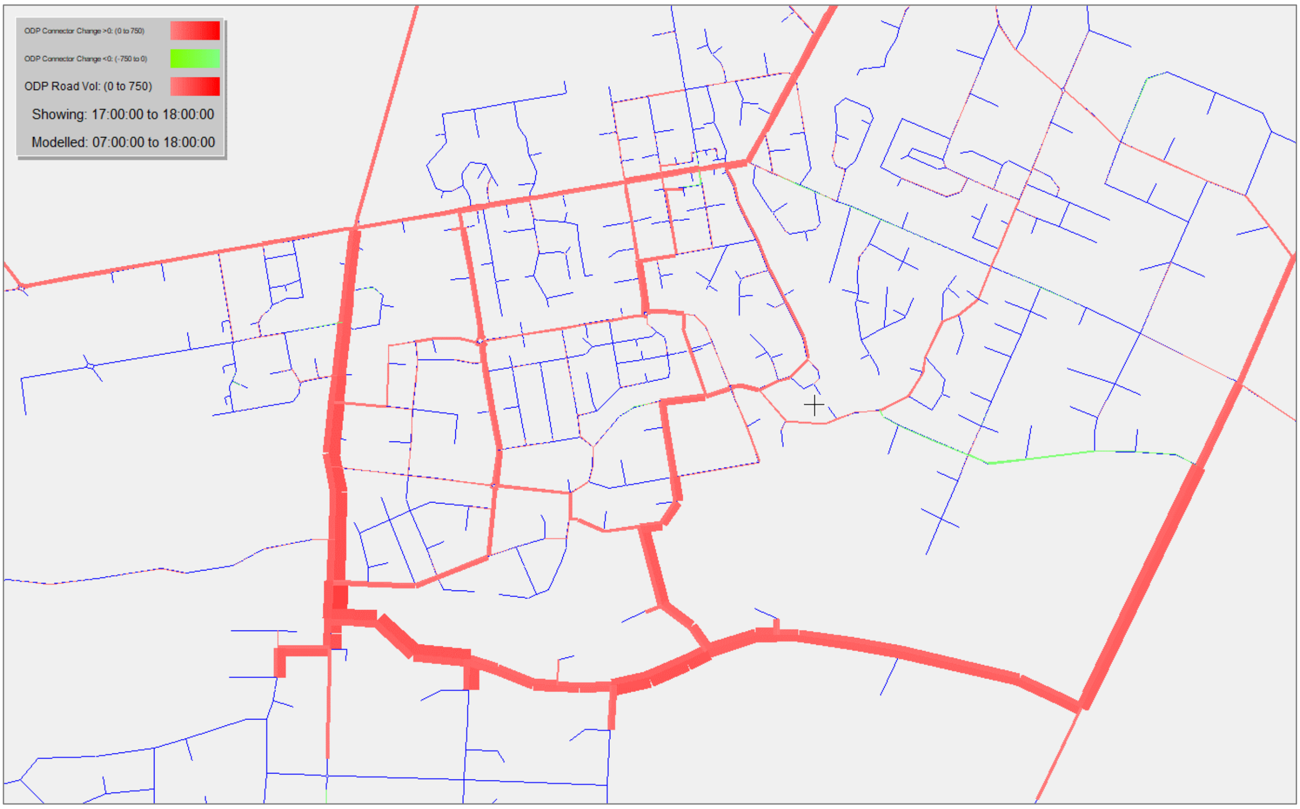

Figure 4.4 Change in Volume between No Development and Development with Central Link in the Evening Peak (17:00-18:00)

4.2 Intersection Performance

The delay and Level of Service (LOS) of key intersections have been evaluated and compared between the 'without development', 'with development', and 'with Central Link' models. LOS is calculated for roundabouts and signalised intersections on the basis of average weighted approach while for priority control intersections it is calculated as the worst approach averaged across movements. The performance of key intersections in the morning peak hour is demonstrated in **Table 4.3** and the evening peak hour in **Table 4.4**. Further breakdowns of the individual movements are attached as Appendix A.

Table 4.3 Intersection Performance at Key Intersections in the Morning Peak (08:00-09:00)

Intersection	No Development			With Development			With Development and Central Link		
	Vol	Delay	LOS	Vol	Delay	LOS	Vol	Delay	LOS
Springs / Gerald / Ellesmere Jct Signals	1617	19	B	2320	40	D	2301	39	D
Gerald / James / Edward Signals	1275	12	B	1538	13	B	1575	1413	B
Weedons / Ellesmere Jct RAB	957	5	A	1125	6	A	1313	8	A
Springs / Anaru Priority	474	2	A	1293	3	A	1027	2	A
Springs / Southfield Priority	496	5	A	1315	31	D	1042	16	C
Springs / Verdeco Priority	421	4	A		36	E	1257	24	C
Springs / West Arterial Signals	255	1	A	1400	20	C	1217	19	B
Springs / ODP Access RAB	140	2	A	345	3	A	316	2	A
Springs / Collins Priority	140	3	A	133	3	A	142	3	A

Table 4.4 Intersection Performance at Key Intersections in the Evening Peak (17:00-18:00)

Intersection	No Development			With Development			With Development and Central Link		
	Vol	Delay	LOS	Vol	Delay	LOS	Vol	Delay	LOS
Springs / Gerald / Ellesmere Jct Signals	1616	18	B	1970	36	D	1924	36	D
Gerald / James / Edward Signals	1376	11	B	1512	12	B	1546	12	B
Weedons / Ellesmere Jct RAB	816	4	A	920	4	A	916	4	A
Springs / Anaru Priority	488	2	A	982	2	A	917	2	A
Springs / Southfield Priority	570	5	A	1081	7	A	1006	8	A
Springs / Verdeco Priority	552	5	A	1082	10	B	998	8	A
Springs / West Arterial Signals	572	2	A	1480	17	B	1285	16	B
Springs / ODP Access RAB	194	2	A	342	3	A	328	3	A
Springs / Collins Priority	194	2	A	195	3	A	194	3	A

4.3 Accessway Performance

Accessway performance for the Lincoln University accesses onto Springs Rd have been collected for the northern (this is essentially the car park access to the south of Farm Road) and southern (Engineering Drive) intersections. The LOS for priority control intersections it is calculated as the worst approach averaged across movements. The performance of the accesses in the morning peak hour is demonstrated in **Table 4.5** and the evening peak hour in **Table 4.6**. Further breakdowns of the individual movements are included within Appendix A.

Table 4.5 Access Performance in the Morning Peak (08:00-09:00)

Intersection	No Development			With Development			With Development and Central Link		
	Vol	Delay	LOS	Vol	Delay	LOS	Vol	Delay	LOS
Springs Rd Uni Entrance North Priority	808	6	A	1515	24	C	1455	33	D
Springs Rd Uni Entrance South Priority	680	6	A	1419	29	D	1341	48	E

Table 4.6 Access Performance in the Evening Peak (17:00-18:00)

Intersection	No Development			With Development			With Development and Central Link		
	Vol	Delay	LOS	Vol	Delay	LOS	Vol	Delay	LOS
Springs Rd Uni Entrance North Priority	902	10	B	1268	18	C	1224	21	C
Springs Rd Uni Entrance South Priority	735	5	A	1145	10	A	1100	9	A

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Springs / Gerald / Ellesmere Jct Signals

Intersection Movement value is weighted delay for signals and roundabouts and worst movement for priority intersections ***Approach values are only calculated for priority intersections***

No ODP

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	62	9	A				45	9	A			
Springs Rd North	Thru	215	19	B				53	17	B			
Springs Rd North	Right	15	20	C				10	25	C			
Gerald St East	Left	114	16	B				186	18	B			
Gerald St East	Thru	255	19	B				328	20	C			
Gerald St East	Right	84	35	D				47	26	C			
Springs Rd South	Left	25	12	B				84	16	B			
Springs Rd South	Thru	223	16	B				321	18	B			
Springs Rd South	Right	113	19	B				209	18	B			
Ellesmere Jct Rd West	Left	4	21	C				0	0	A			
Ellesmere Jct Rd West	Thru	388	19	B				290	17	B			
Ellesmere Jct Rd West	Right	118	23	C				44	23	C			
Intersection		1617	19	B				1616	18	B			

ODP, no Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	69	14	B				48	10	A			
Springs Rd North	Thru	223	41	D				126	43	D			
Springs Rd North	Right	15	64	E				9	38	D			
Gerald St East	Left	120	48	D				236	52	D			
Gerald St East	Thru	257	47	D				311	51	D			
Gerald St East	Right	80	54	D				45	38	D			
Springs Rd South	Left	112	42	D				113	26	C			
Springs Rd South	Thru	647	42	D				342	29	C			
Springs Rd South	Right	228	47	D				300	31	C			
Ellesmere Jct Rd West	Left	5	25	C				21	31	C			
Ellesmere Jct Rd West	Thru	392	25	C				287	31	C			
Ellesmere Jct Rd West	Right	171	35	D				132	29	C			
Intersection		2320	40	D				1970	36	D			

ODP and Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	81	11	B				57	8	A			
Springs Rd North	Thru	194	38	D				115	39	D			
Springs Rd North	Right	19	61	E				5	48	D			
Gerald St East	Left	109	47	D				232	51	D			
Gerald St East	Thru	264	48	D				305	48	D			
Gerald St East	Right	88	69	E				47	35	D			
Springs Rd South	Left	102	36	D				118	27	C			
Springs Rd South	Thru	651	40	D				337	32	C			
Springs Rd South	Right	220	44	D				280	33	C			
Ellesmere Jct Rd West	Left	5	23	C				16	25	C			
Ellesmere Jct Rd West	Thru	397	25	C				290	32	C			
Ellesmere Jct Rd West	Right	172	33	C				121	28	C			
Intersection		2301	39	D				1924	36	D			

Gerald / James / Edward Signals

No ODP

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
James St North	Left	357	11	B				316	10	B			
James St North	Right	85	18	B				18	16	B			
Edward St East	Thru	251	10	A				298	8	A			
Edward St East	Right	288	6	A				464	8	A			
Gerald St West	Left	38	16	B				22	14	B			
Gerald St West	Thru	255	20	C				258	20	C			
Intersection		1275	12	B				1376	11	B			

ODP, no Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
James St North	Left	383	11	B				322	11	B			
James St North	Right	98	21	C				19	22	C			
Edward St East	Thru	422	9	A				350	8	A			
Edward St East	Right	301	7	A				470	8	A			
Gerald St West	Left	40	19	B				22	17	B			
Gerald St West	Thru	295	22	C				330	21	C			
Intersection		1538	13	B				1512	12	B			

ODP and Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
James St North	Left	375	12	B				324	10	A			
James St North	Right	103	28	C				15	23	C			
Edward St East	Thru	440	10	A				359	9	A			
Edward St East	Right	300	7	A				474	8	A			
Gerald St West	Left	38	18	B				22	18	B			
Gerald St West	Thru	319	22	C				352	21	C			
Intersection		1575	14	B				1546	12	B			

Weedons / Ellesmere Jct RAB

No ODP

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Weedons Rd North	Left	413	5	A				206	2	A			
Weedons Rd North	Thru	0	0	A				0	0	A			
Weedons Rd North	Right												
Ellesmere Jct Rd East	Left	0	0	A				0	0	A			
Ellesmere Jct Rd East	Thru	127	3	A				233	4	A			
Ellesmere Jct Rd East	Right	161	4	A				241	4	A			
West Arterial South	Left	0	0	A				0	0	A			
West Arterial South	Thru	0	0	A				0	0	A			
West Arterial South	Right	0	0	A				0	0	A			
Ellesmere Jct Rd West	Left												
Ellesmere Jct Rd West	Thru	234	6	A				136	5	A			
Ellesmere Jct Rd West	Right	0	0	A				0	0	A			
Intersection		934	5	A				816	4	A			

ODP, no Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Weedons Rd North	Left	503	7	A				263	3	A			
Weedons Rd North	Thru	0	0	A				0	0	A			
Weedons Rd North	Right												
Ellesmere Jct Rd East	Left	0	0	A				0	0	A			
Ellesmere Jct Rd East	Thru	127	4	A				234	4	A			
Ellesmere Jct Rd East	Right	250	4	A				262	5	A			
West Arterial South	Left	0	0	A				0	0	A			
West Arterial South	Thru	0	0	A				0	0	A			
West Arterial South	Right	0	0	A				0	0	A			
Ellesmere Jct Rd West	Left												
Ellesmere Jct Rd West	Thru	249	8	A				160	6	A			
Ellesmere Jct Rd West	Right	0	0	A				0	0	A			
Intersection		1129	6	A				920	4	A			

ODP and Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Weedons Rd North	Left	516	8	A				263	3	A			
Weedons Rd North	Thru	0	0	A				0	0	A			
Weedons Rd North	Right												
Ellesmere Jct Rd East	Left	0	0	A				0	0	A			
Ellesmere Jct Rd East	Thru	128	4	A				233	4	A			
Ellesmere Jct Rd East	Right	249	4	A				264	5	A			
West Arterial South	Left	0	0	A				0	0	A			
West Arterial South	Thru	0	0	A				0	0	A			
West Arterial South	Right	0	0	A				0	0	A			
Ellesmere Jct Rd West	Left												
Ellesmere Jct Rd West	Thru	251	8	A				157	6	A			
Ellesmere Jct Rd West	Right	0	0	A				0	0	A			
Intersection		1145	7	A				916	4	A			

Springs Rd Uni Entrance North Priority

No ODP

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Thru	345	2	A	435	3	A	272	2	A	283	2	A
Springs Rd North	Right	89	6	A				11	10	A			
Springs Rd South	Left	5	2	A	347	1	A	2	3	A	488	2	A
Springs Rd South	Thru	342	1	A				486	2	A			
Uni Access West	Left	24	5	A	25	6	A	127	10	B	131	10	B
Uni Access West	Right	2	23	C				4	18	C			
Intersection		808	23	C	808	6	A	902	18	C	902	10	B

ODP, no Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Thru	431	4	A	506	7	A	490	2	A	499	2	A
Springs Rd North	Right	75	24	C				8	12	B			
Springs Rd South	Left	14	5	A	991	5	A	6	3	A	641	2	A
Springs Rd South	Thru	977	5	A				635	2	A			
Uni Access West	Left	15	19	C	18	24	C	118	17	C	128	18	C
Uni Access West	Right	3	54	F				10	25	D			
Intersection		1515	54	F	1515	24	C	1268	25	D	1268	18	C

ODP and Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Thru	391	15	B	463	17	C	464	2	A	473	2	A
Springs Rd North	Right	72	30	D				9	11	B			
Springs Rd South	Left	12	5	A	976	6	A	6	3	A	626	2	A
Springs Rd South	Thru	964	6	A				620	2	A			
Uni Access West	Left	14	24	C	16	33	D	111	20	C	125	21	C
Uni Access West	Right	2	93	F				13	32	D			
Intersection		1455	93	F	1455	33	D	1224	32	D	1224	21	C

Springs Rd Uni Entrance South Priority

No ODP

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Thru	127	1	A	348	6	A	251	1	A	277	2	A
Springs Rd North	Right	221	9	A				26	5	A			
Springs Rd South	Left	16	2	A	293	2	A	3	2	A	185	2	A
Springs Rd South	Thru	277	2	A				182	2	A			
Uni Access West	Left	35	4	A	39	5	A	249	4	A	274	5	A
Uni Access West	Right	4	11	B				25	7	A			
Intersection		680	11	B	680	6	A	737	7	A	737	5	A

ODP, no Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Thru	281	3	A	436	29	D	474	2	A	504	2	A
Springs Rd North	Right	154	76	F				30	7	A			
Springs Rd South	Left	25	4	A	944	3	A	5	3	A	351	2	A
Springs Rd South	Thru	919	3	A				346	2	A			
Uni Access West	Left	32	12	B	39	14	B	235	9	A	290	10	A
Uni Access West	Right	7	22	C				55	14	B			
Intersection		1419	76	F	1419	29	D	1145	14	B	1145	10	A

ODP and Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Thru	247	8	A	397	48	E	452	2	A	479	2	A
Springs Rd North	Right	150	114	F				27	5	A			
Springs Rd South	Left	25	4	A	897	4	A	5	3	A	325	2	A
Springs Rd South	Thru	872	4	A				320	2	A			
Uni Access West	Left	35	21	C	47	24	C	244	9	A	297	9	A
Uni Access West	Right	12	33	D				53	13	B			
Intersection		1341	114	F	1341	48	E	1100	13	B	1100	9	A

Springs / Anaru Priority

No ODP

Approach	Movement	AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	7	2	A	132	2	A	9	2	A	281	2	A
Springs Rd North	Thru	125	2	A				272	2	A			
Anaru Rd East	Left	3	2	A	43	2	A	7	2	A	11	2	A
Anaru Rd East	Right	40	2	A				4	1	A			
Springs Rd South	Thru	293	2	A	299	2	A	185	1	A	196	1	A
Springs Rd South	Right	6	2	A				11	2	A			
Intersection		473	2	A	473	2	A	488	2	A	488	2	A

ODP, no Central Link

Approach	Movement	AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	7	2	A	291	2	A	16	2	A	538	2	A
Springs Rd North	Thru	284	2	A				522	2	A			
Anaru Rd East	Left	13	2	A	83	3	A	50	2	A	60	2	A
Anaru Rd East	Right	69	3	A				10	2	A			
Springs Rd South	Thru	944	3	A	996	3	A	350	2	A	385	2	A
Springs Rd South	Right	52	2	A				34	2	A			
Intersection		1370	3	A	1370	3	A	982	2	A	982	2	A

ODP and Central Link

Approach	Movement	AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	7	2	A	261	2	A	15	3	A	512	2	A
Springs Rd North	Thru	254	2	A				497	2	A			
Anaru Rd East	Left	11	2	A	111	2	A	40	2	A	54	2	A
Anaru Rd East	Right	100	2	A				14	2	A			
Springs Rd South	Thru	899	3	A	933	3	A	324	2	A	352	2	A
Springs Rd South	Right	34	2	A				28	2	A			
Intersection		1305	3	A	1305	3	A	917	3	A	917	2	A

Springs / Southfield Priority

No ODP

Approach	Movement	AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	18	2	A	127	1	A	25	1	A	279	1	A
Springs Rd North	Thru	109	1	A				255	1	A			
Southfield Dr East	Left	23	2	A	86	6	A	41	4	A	49	5	A
Southfield Dr East	Right	63	7	A				9	7	A			
Springs Rd South	Thru	236	1	A	279	1	A	188	1	A	242	1	A
Springs Rd South	Right	43	2	A				53	3	A			
Intersection		492	7	A	492	6	A	570	7	A	570	5	A

ODP, no Central Link

Approach	Movement	AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	13	2	A	296	1	A	23	2	A	571	1	A
Springs Rd North	Thru	283	1	A				548	1	A			
Southfield Dr East	Left	34	14	B	75	27	D	55	6	A	63	7	A
Southfield Dr East	Right	40	37	E				8	12	B			
Springs Rd South	Thru	958	2	A	1037	2	A	377	2	A	447	3	A
Springs Rd South	Right	79	5	A				70	7	A			
Intersection		1408	37	E	1408	27	D	1081	12	B	1081	7	A

ODP and Central Link

Approach	Movement	AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	17	3	A	265	1	A	27	3	A	538	1	A
Springs Rd North	Thru	248	1	A				511	1	A			
Southfield Dr East	Left	29	17	C	88	26	D	51	7	A	63	8	A
Southfield Dr East	Right	59	30	D				11	11	B			
Springs Rd South	Thru	875	2	A	949	2	A	341	2	A	406	3	A
Springs Rd South	Right	74	5	A				65	7	A			
Intersection		1303	30	D	1303	26	D	1006	11	B	1006	8	A

Springs / Verdeco Priority

No ODP

Approach	Movement	AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Thru	79	3	A	133	3	A	245	3	A	295	3	A
Springs Rd North	Right	54	3	A				51	4	A			
Springs Rd South	Left	4	0	A	145	2	A	6	1	A	207	2	A
Springs Rd South	Thru	141	2	A				201	2	A			
Verdeco Dr West	Left	138	4	A	144	4	A	41	5	A	50	5	A
Verdeco Dr West	Right	6	7	A				9	8	A			
Intersection		422	7	A	422	4	A	552	8	A	552	5	A

ODP, no Central Link

Approach	Movement	AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Thru	267	3	A	317	6	A	554	6	A	604	6	A
Springs Rd North	Right	50	20	C				51	6	A			
Springs Rd South	Left	17	2	A	921	2	A	15	1	A	421	2	A
Springs Rd South	Thru	904	2	A				406	2	A			
Verdeco Dr West	Left	134	37	E	149	36	E	39	6	A	57	10	B
Verdeco Dr West	Right	16	34	D				18	19	C			
Intersection		1387	37	E	1387	36	E	1082	19	C	1082	10	B

ODP and Central Link

Approach	Movement	AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Thru	231	2	A	277	5	A	512	3	A	563	3	A
Springs Rd North	Right	47	17	C				51	5	A			
Springs Rd South	Left	16	2	A	832	2	A	15	2	A	378	2	A
Springs Rd South	Thru	816	2	A				363	2	A			
Verdeco Dr West	Left	134	24	C	148	24	C	42	6	A	57	8	A
Verdeco Dr West	Right	14	25	C				16	12	B			
Intersection		1257	25	C	1257	24	C	998	12	B	998	8	A

Springs / West Arterial Signals

No ODP

Approach	Movement	AM Peak (0800-0900) Movement Flow	Average Delay	LOS	PM Peak (1700-1800) Movement Flow	Average Delay	LOS
Springs Rd North	Left	0	0	A	0	0	A
Springs Rd North	Thru	104	2	A	315	2	A
Springs Rd North	Right	0	0	A	0	0	A
ODP Road East	Left	0	0	A	0	0	A
ODP Road East	Thru	0	0	A	0	0	A
ODP Road East	Right	0	0	A	0	0	A
Springs Rd South	Left	0	0	A	0	0	A
Springs Rd South	Thru	151	1	A	257	2	A
Springs Rd South	Right	0	0	A	0	0	A
West Arterial West	Left	0	0	A	0	0	A
West Arterial West	Thru	0	0	A	0	0	A
West Arterial West	Right	0	0	A	0	0	A
Intersection		255	1	A	572	2	A

ODP, no Central Link

Approach	Movement	AM Peak (0800-0900) Movement Flow	Average Delay	LOS	PM Peak (1700-1800) Movement Flow	Average Delay	LOS
Springs Rd North	Left	147	12	B	305	16	B
Springs Rd North	Thru	202	15	B	523	19	B
Springs Rd North	Right	0	0	A	0	0	A
ODP Road East	Left	27	15	B	66	16	B
ODP Road East	Thru	0	0	A	0	0	A
ODP Road East	Right	497	25	C	158	18	B
Springs Rd South	Left	0	0	A	0	0	A
Springs Rd South	Thru	501	20	C	370	12	B
Springs Rd South	Right	26	23	C	58	41	D
West Arterial West	Left	0	0	A	0	0	A
West Arterial West	Thru	0	0	A	0	0	A
West Arterial West	Right	0	0	A	0	0	A
Intersection		1400	20	C	1480	17	B

ODP and Central Link

Approach	Movement	AM Peak (0800-0900) Movement Flow	Average Delay	LOS	PM Peak (1700-1800) Movement Flow	Average Delay	LOS
Springs Rd North	Left	98	11	B	182	13	B
Springs Rd North	Thru	195	16	B	510	18	B
Springs Rd North	Right	0	0	A	0	0	A
ODP Road East	Left	26	17	B	63	17	B
ODP Road East	Thru	0	0	A	0	0	A
ODP Road East	Right	390	21	C	104	17	B
Springs Rd South	Left	0	0	A	0	0	A
Springs Rd South	Thru	482	19	B	366	12	B
Springs Rd South	Right	26	22	C	61	28	C
West Arterial West	Left	0	0	A	0	0	A
West Arterial West	Thru	0	0	A	0	0	A
West Arterial West	Right	0	0	A	0	0	A
Intersection		1217	19	B	1285	16	B

Springs / ODP Access South RAB

No ODP

Approach	Movement	AM Peak (0800-0900) Movement Flow	Average Delay	LOS	PM Peak (1700-1800) Movement Flow	Average Delay	LOS
Springs Rd North	Left	0	0	A	0	0	A
Springs Rd North	Thru	32	3	A	138	3	A
Springs Rd North	Right	0	0	A	0	0	A
ODP Road East	Left	0	0	A	0	0	A
ODP Road East	Thru	0	0	A	0	0	A
ODP Road East	Right	0	0	A	0	0	A
Springs Rd South	Left	0	0	A	0	0	A
Springs Rd South	Thru	108	1	A	56	1	A
Springs Rd South	Right	0	0	A	0	0	A
ODP Road West	Left	0	0	A	0	0	A
ODP Road West	Thru	0	0	A	0	0	A
ODP Road West	Right	0	0	A	0	0	A
Intersection		140	2	A	194	2	A

ODP, no Central Link

Approach	Movement	AM Peak (0800-0900) Movement Flow	Average Delay	LOS	PM Peak (1700-1800) Movement Flow	Average Delay	LOS
Springs Rd North	Left	13	3	A	28	3	A
Springs Rd North	Thru	26	2	A	117	3	A
Springs Rd North	Right	17	2	A	35	3	A
ODP Road East	Left	2	3	A	9	3	A
ODP Road East	Thru	11	3	A	25	3	A
ODP Road East	Right	66	5	A	20	6	A
Springs Rd South	Left	1	0	A	1	1	A
Springs Rd South	Thru	88	3	A	43	3	A
Springs Rd South	Right	3	1	A	3	2	A
ODP Road West	Left	110	2	A	39	1	A
ODP Road West	Thru	8	2	A	22	1	A
ODP Road West	Right	0	0	A	0	0	A
Intersection		345	3	A	342	3	A

ODP and Central Link

Approach	Movement	AM Peak (0800-0900) Movement Flow	Average Delay	LOS	PM Peak (1700-1800) Movement Flow	Average Delay	LOS
Springs Rd North	Left	5	2	A	15	3	A
Springs Rd North	Thru	25	2	A	117	3	A
Springs Rd North	Right	17	3	A	34	3	A
ODP Road East	Left	5	3	A	8	4	A
ODP Road East	Thru	10	4	A	25	4	A
ODP Road East	Right	51	3	A	14	4	A
Springs Rd South	Left	0	0	A	0	0	A
Springs Rd South	Thru	91	2	A	44	2	A
Springs Rd South	Right	4	2	A	5	2	A
ODP Road West	Left	98	2	A	45	1	A
ODP Road West	Thru	9	2	A	21	1	A
ODP Road West	Right	0	0	A	0	0	A
Intersection		316	2	A	328	3	A

Springs / Collins Priority

No ODP

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	0	0	A	32	2	A	0	0	A	138	2	A
Springs Rd North	Thru	0	0	A				0	0	A			
Springs Rd North	Right	32	2	A				138	2	A			
Collins Rd East	Left	0	0	A	0	0	A	0	0	A	0	0	A
Collins Rd East	Thru	0	0	A				0	0	A			
Collins Rd East	Right	0	0	A				0	0	A			
Springs Rd South	Left	0	0	A	0	0	A	0	0	A	0	0	A
Springs Rd South	Thru	0	0	A				0	0	A			
Springs Rd South	Right	0	0	A				0	0	A			
Collins Rd West	Left	108	3	A	108	3	A	55	2	A	55	2	A
Collins Rd West	Thru	0	0	A				0	0	A			
Collins Rd West	Right	0	0	A				0	0	A			
Intersection		140	3	A	140	3	A	194	2	A	194	2	A

ODP, no Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	0	0	A	29	2	A	1	0	A	127	2	A
Springs Rd North	Thru	0	0	A				0	0	A			
Springs Rd North	Right	29	2	A				126	2	A			
Collins Rd East	Left	0	0	A	9	3	A	0	0	A	15	3	A
Collins Rd East	Thru	4	1	A				13	4	A			
Collins Rd East	Right	5	4	A				2	2	A			
Springs Rd South	Left	0	0	A	0	0	A	0	0	A	0	0	A
Springs Rd South	Thru	0	0	A				0	0	A			
Springs Rd South	Right	0	0	A				0	0	A			
Collins Rd West	Left	87	3	A	96	3	A	44	3	A	52	3	A
Collins Rd West	Thru	9	1	A				8	3	A			
Collins Rd West	Right	0	0	A				0	0	A			
Intersection		133	3	A	133	3	A	195	2	A	195	3	A

ODP and Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	0	0	A	30	2	A	0	0	A	125	2	A
Springs Rd North	Thru	0	0	A				0	0	A			
Springs Rd North	Right	30	2	A				125	2	A			
Collins Rd East	Left	0	0	A	8	3	A	0	0	A	14	3	A
Collins Rd East	Thru	5	3	A				12	4	A			
Collins Rd East	Right	4	3	A				2	3	A			
Springs Rd South	Left	0	0	A	0	0	A	0	0	A	0	0	A
Springs Rd South	Thru	0	0	A				0	0	A			
Springs Rd South	Right	0	0	A				0	0	A			
Collins Rd West	Left	92	3	A	104	3	A	48	3	A	56	3	A
Collins Rd West	Thru	12	3	A				8	4	A			
Collins Rd West	Right	0	0	A				0	0	A			
Intersection		142	3	A	142	3	A	194	2	A	194	3	A

Springs / Boundary Priority

No ODP

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	39	6	A	436	3	A	38	6	A	165	4	A
Springs Rd North	Thru	198	3	A				63	3	A			
Springs Rd North	Right	198	3	A				63	3	A			
Boundary Rd East	Left	18	4	A	176	6	A	4	3	A	100	5	A
Boundary Rd East	Thru	86	6	A				52	5	A			
Boundary Rd East	Right	72	6	A				44	4	A			
Springs Rd South	Left	32	2	A	314	1	A	37	2	A	408	1	A
Springs Rd South	Thru	274	1	A				369	1	A			
Springs Rd South	Right	8	4	A				2	4	A			
Boundary Rd West	Left	2	3	A	164	5	A	3	3	A	126	6	A
Boundary Rd West	Thru	84	7	A				84	7	A			
Boundary Rd West	Right	79	4	A				39	3	A			
Intersection		1091	3	A	1091	6	A	799	3	A	799	6	A

ODP, no Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	45	2	A	263	1	A	40	3	A	155	2	A
Springs Rd North	Thru	214	1	A				106	1	A			
Springs Rd North	Right	4	7	A				10	3	A			
Boundary Rd East	Left	27	8	A	197	10	B	12	3	A	119	5	A
Boundary Rd East	Thru	85	12	B				62	6	A			
Boundary Rd East	Right	85	9	A				44	4	A			
Springs Rd South	Left	90	2	A	740	2	A	41	2	A	436	1	A
Springs Rd South	Thru	637	2	A				392	1	A			
Springs Rd South	Right	13	3	A				4	4	A			
Boundary Rd West	Left	4	6	A	141	9	A	2	2	A	152	6	A
Boundary Rd West	Thru	70	11	B				88	8	A			
Boundary Rd West	Right	66	7	A				62	3	A			
Intersection		1341	4	A	1341	10	B	863	3	A	863	6	A

ODP and Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	42	3	A	248	2	A	33	4	A	146	2	A
Springs Rd North	Thru	201	1	A				105	1	A			
Springs Rd North	Right	5	10	A				9	4	A			
Boundary Rd East	Left	27	7	A	193	11	B	10	3	A	114	5	A
Boundary Rd East	Thru	84	12	B				61	6	A			
Boundary Rd East	Right	82	11	B				44	5	A			
Springs Rd South	Left	96	3	A	753	2	A	38	2	A	432	1	A
Springs Rd South	Thru	642	2	A				390	1	A			
Springs Rd South	Right	16	3	A				3	4	A			
Boundary Rd West	Left	4	5	A	138	8	A	2	2	A	149	5	A
Boundary Rd West	Thru	68	10	B				87	7	A			
Boundary Rd West	Right	66	6	A				60	3	A			
Intersection		1333	4	A	1333	11	B	841	3	A	841	5	A

Springs / Tancreds Priority

No ODP

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	24	3	A	193	1	A	18	3	A	84	2	A
Springs Rd North	Thru	165	1	A				57	1	A			
Springs Rd North	Right	4	5	A				9	5	A			
Tancreds Rd East	Left	7	6	A	91	8	A	10	6	A	89	6	A
Tancreds Rd East	Thru	73	8	A				41	7	A			
Tancreds Rd East	Right	10	5	A				38	6	A			
Springs Rd South	Left	37	3	A	347	1	A	26	3	A	418	1	A
Springs Rd South	Thru	304	1	A				386	1	A			
Springs Rd South	Right	5	5	A				6	5	A			
Tancreds Rd West	Left				128	8	A				116	8	A
Tancreds Rd West	Thru	61	9	A				73	9	A			
Tancreds Rd West	Right	68	6	A				42	6	A			
Intersection		758	3	A	758	8	A	706	3	A	706	8	A

ODP, no Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	23	4	A	214	1	A	17	4	A	98	2	A
Springs Rd North	Thru	187	1	A				72	1	A			
Springs Rd North	Right	4	8	A				10	6	A			
Tancreds Rd East	Left	14	9	A	102	13	B	24	5	A	92	8	A
Tancreds Rd East	Thru	75	15	C				43	11	B			
Tancreds Rd East	Right	14	9	A				24	5	A			
Springs Rd South	Left	74	4	A	726	1	A	28	4	A	443	1	A
Springs Rd South	Thru	638	1	A				407	1	A			
Springs Rd South	Right	13	4	A				9	4	A			
Tancreds Rd West	Left				120	12	B				133	9	A
Tancreds Rd West	Thru	55	13	B				74	10	B			
Tancreds Rd West	Right	65	10	B				59	7	A			
Intersection		1162	4	A	1162	13	B	766	3	A	766	9	A

ODP and Central Link

		AM Peak (0800-0900)						PM Peak (1700-1800)					
		Movement			Approach			Movement			Approach		
Approach	Movement	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS	Flow	Average Delay	LOS
Springs Rd North	Left	24	4	A	210	1	A	15	4	A	93	2	A
Springs Rd North	Thru	181	1	A				68	1	A			
Springs Rd North	Right	5	7	A				9	5	A			
Tancreds Rd East	Left	11	7	A	97	11	B	22	5	A	89	7	A
Tancreds Rd East	Thru	76	13	B				45	9	A			
Tancreds Rd East	Right	11	7	A				22	5	A			
Springs Rd South	Left	72	3	A	724	1	A	26	3	A	442	1	A
Springs Rd South	Thru	639	1	A				408	1	A			
Springs Rd South	Right	13	5	A				8	4	A			
Tancreds Rd West	Left				120	11	B				131	8	A
Tancreds Rd West	Thru	62	12	B				75	9	A			
Tancreds Rd West	Right	58	10	B				56	7	A			
Intersection		1151	3	A	1151	11	B	754	3	A	754	8	A